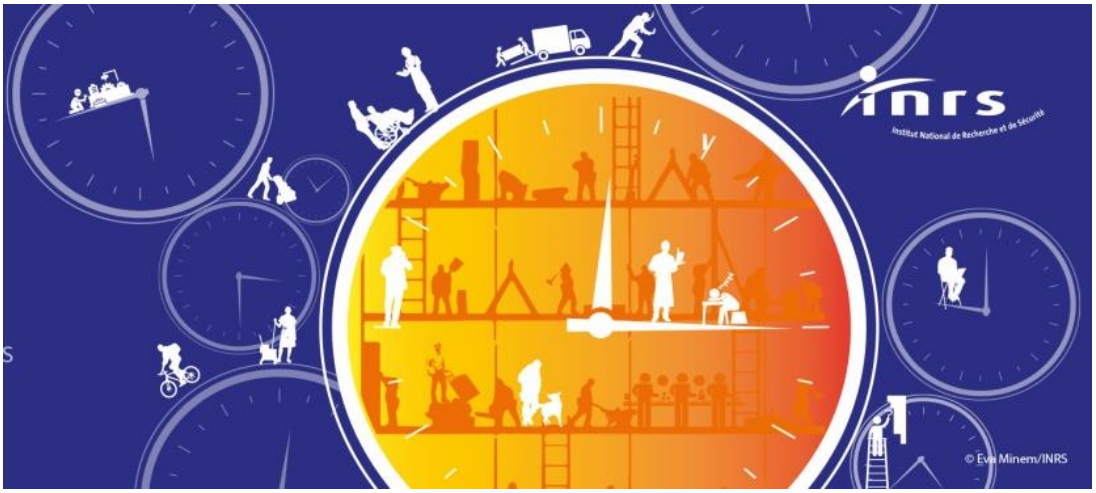
LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Juillet 2025



Objectifs : réaliser une veille scientifique sur les horaires atypiques

La validation des informations fournies (exactitude, fiabilité, pertinence par rapport aux principes de prévention, etc.) est du ressort des auteurs des articles signalés dans la veille. Les informations ne sont pas le reflet de la position de l'INRS. Les éléments issus de cette veille sont fournis sans garantie d'exhaustivité. Les liens mentionnés dans le bulletin donnent accès aux documents sous réserve d'un abonnement à la ressource.

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Horaires atypiques (HA)

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Aucun article dans ce bulletin.

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Association between nonstandard work schedules and employees' self-rated mental health with perceived work stress, work-family conflict and job satisfaction as psychosocial mediators: a national study in China.

Wang Z, Zhang G. *Front Psychol*. 2025;16:1561653.

BACKGROUND: Nonstandard work schedules are prevalent across the industrialized world. While prior research indicates nonstandard work schedules lead to poor mental health, little research has explored the psychosocial pathways underlying the association between work schedule and mental health. This study aimed to fill this gap by testing for the mediating roles of perceived work stress, perceived work-family conflict and perceived job satisfaction in the association between nonstandard work schedules and employees' self-rated mental health. METHODS: Using a nationally representative sample of data from the Chinese General Social Survey (CGSS) in 2021 (N = 1857), and using the Process v4.1 for SPSS, we examined the association between nonstandard work schedules and employees' self-rated mental health and estimated the independent and joint mediation effects of perceived work stress, perceived work-family conflict and perceived job satisfaction. RESULTS: A total of 1857 employees participated in the final analysis. Of these, 1,331 employees (71.7%) work fixed day shifts, 24 employees (1.3%) work fixed night shifts, 206 employees (11.1%) work rotating shifts, 243 employees (13.1%) work irregular schedules and 53 employees (2.8%) work other schedules. Nonstandard work schedule was negatively correlated with employees' self-rated mental health and perceived job satisfaction, and positively correlated with perceived work stress and work-family conflict ($p < 0.001$). The independent mediation effects of perceived work stress, perceived work-family conflict and perceived job satisfaction was 17.3, 22.4 and 16.5%, respectively. The joint effect of all three mediators mediated about 36.2% of the relationship between nonstandard work schedules and employees' self-rated

mental health. Sensitivity analyses revealed that rotating shift ($p < 0.05$) and irregular schedule ($p < 0.001$) were negatively associated with employees' self-rated mental health, perceived job satisfaction fully mediated the association between rotating shift and employees' self-rated mental health, while perceived work stress, work-family conflict and job satisfaction jointly and partially mediated the association between irregular schedule and employees' self-rated mental health (the joint effect of all three mediators mediated about 42.4% of the relationship). CONCLUSION: Perceived work stress, perceived work-family conflict and perceived job satisfaction mediated the relationship between nonstandard work schedules and employees' self-rated mental health. The findings advance understanding of the psychosocial mechanisms underlying the association between work schedule and mental health.

Lien vers l'article

Working hours indirectly affect anxiety symptoms through sleep and stress in dentists, physicians, and psychotherapists.

Tomac P, Rapić IJ, Lugović-Mihić L, Macan J, Bjelajac AK. *Arh Hig Rada Toksikol*. 2025 Jun 1;76(2):102-12.

The aim of this study was to examine the effects of working hours on anxiety symptoms in highly educated helping professionals, especially through sleep duration, perceived stress and sleep quality. We analysed the results of 172 helping professionals (dentists, physicians, and psychotherapists, 57 % women, average age 25-63 years) who had participated in a larger study examining the effects of working conditions and constitutional factors on the onset of hand eczema. The participants answered a battery of questionnaires, including Cohen's Perceived Stress Scale, Zung Self-Rating Anxiety Scale, and a set of standard questions on sociodemographic characteristics, working hours, sleep, and job characteristics. They also underwent clinical examination of skin on hands and wrists. Participants reported working between 19 and 90 h a week, with 25.1 % working more than 50 h a week. Several path analysis models used in the study showed that working hours predicted anxiety only indirectly. The final model "working hours → sleep duration on workdays → perceived stress → anxiety symptoms" showed excellent fit [$\chi(2)(14)=10.345$; $P>0.05$; CFI=1.000; RMSEA 90 % CI (0.000, 0.054); $P>0.05$; SRMR=0.028]. Our results indicate that long working hours are associated with shorter sleep duration, which, in turn, is associated with higher levels of perceived stress and subsequently higher levels of anxiety. Long working hours in highly educated helping professionals may therefore put at risk their own health and safety and that of the recipients of their services.

Lien vers l'article

Determinants of Long Working Hours Among Obstetrics and Gynecology Nurses and Midwives in Japan: A National Cross-Sectional Study.

Ishikawa M, Seto R, Oguro M, Sato Y, Ogawa M, Katagiri I, et al. *Healthcare (Basel)*. 2025 Jun 12;13(12).

Background/Objectives: Nursing staff face mentally and physically demanding work environments in the obstetrics and gynecology departments in hospitals. This study elucidated the working hours of midwives and nurses in these departments and the background factors influencing them. Methods: This study employed a quantitative, descriptive, and correlational cross-sectional design. A questionnaire-based survey targeting nursing personnel working in the obstetrics and gynecology departments in hospitals across Japan was conducted. The respondents' attributes, working hours, number of night shifts, and other employment conditions were described. To identify the background factors of long working hours, multivariate logistic regression analysis was performed using working hours ≥50 h per week as dependent variables and respondents' attributes and employment conditions as explanatory variables. Results: Questionnaires were sent to 1170 hospitals, and valid responses were obtained from 2043 nursing personnel in 474 hospitals. Working ≥50 and ≥60 h per week were

observed in 15.5% and 3.6% of the respondents, respectively, and 54.2% reported working night shifts ≥5 times monthly. Background factors strongly correlated with working ≥50 h per week among nursing staff included being in their 40s, licensed practical nurses, or a head nurse; having 5-8 night shifts per month; and working in hospitals with a total bed count of 200-400, 400-600, or 600-800, as well as ≥10 full-time physicians, ≥10 or an unknown number of advanced practice midwives, and >400 inpatient midwifery delivery cases annually. Conclusions: Urgent interventions are needed to reduce the workload of nursing staff in the obstetrics and gynecology departments of Japanese hospitals.

Lien vers l'article

Long working hours among hospital-employed obstetricians and gynecologists and associated factors: a comparative study based on a nationwide survey.

Ishikawa M, Seto R, Oguro M, Sato Y. *Environ Occup Health Pract*. 2025;7(1).

OBJECTIVES: To elucidate the status of reduction in working hours following physician work-style reforms and factors associated with long working hours. METHODS: A nationwide questionnaire survey was conducted among obstetricians and gynecologists (OB/GYNs) working in hospitals. The survey elucidated actual working conditions, including working hours and number of out-of-hour (OOH) shifts. To identify factors associated with long working hours, a multivariate logistic regression analysis was performed, with ≥60 or ≥80 working hours per week as dependent variables and OB/GYNs attributes (sex, age, job position, hospital type by ownership, total number of hospital beds, and regional characteristics) as independent variables. RESULTS: Questionnaires were sent to 1,170 hospitals. Valid responses were obtained from 1164 OB/GYNs at 423 hospitals (response rate: 36%): 26.0% worked ≥60 hours per week, a reduction from 58.1% in 2019 (equivalent to over 960 hours of overtime annually), 5.4% worked ≥80 hours per week, a reduction from 41.2% in 2019 (equivalent to over 1,920 hours of overtime annually); and 46.9% worked OOH shifts ≥5 times per month. Factors significantly associated with long working hours per week included male sex, resident position, teaching duty, and number of OOH shifts. CONCLUSIONS: Although the working hours of OB/GYNs have decreased because of physician work-style reforms initiated in 2019, long working hours persist. To ensure health of OB/GYNs and patient safety, it is necessary to actively promote physician work-style reforms and advance measures aimed at the centralization of medical resources and addressing their maldistribution.

Lien vers l'article

A Mixed-methods Systematic Review of Sleep Duration and Quality in Healthcare Workers: Impacts on Patient Safety and Quality of Care.

Fox J, McGrail M, Cha YJ, Cho D, Lu RW, Yi R, et al. *Behav Sleep Med*. 2025 Jun 19:1-17.

OBJECTIVES: The aim of this systematic review was to synthesize evidence on the impacts of sleep duration and quality in healthcare workers on patient safety and quality of care. A secondary aim was to understand the impact of shiftwork and workload characteristics alongside sleep duration and quality. METHODS: A systematic search of Scopus, PubMed, Embase, APA PsycINFO, and CINAHL databases was completed in May 2023 and updated in December 2024. Only studies published in English from 2013 onwards were considered for inclusion in the review. Quality appraisal of included studies was conducted via the McMaster tools for quantitative and qualitative studies, respectively, and results were synthesized and presented as a narrative summary. RESULTS: Database searching revealed 7,422 results, with 30 studies eventually included in the review. Studies consistently showed that short sleep duration in healthcare workers was associated with worse patient safety (increased errors and poorer cognitive functioning). There was also a clear link between shiftwork and long shifts with reduced patient safety. CONCLUSIONS: The majority of included studies revealed that patient

safety and quality of care are worse where HCWs experience short duration and/or low-quality sleep or are working long and/or irregular shifts.

Lien vers l'article

Santé psychique

Working hours indirectly affect anxiety symptoms through sleep and stress in dentists, physicians, and psychotherapists.

Tomac P, Rapić IJ, Lugović-Mihić L, Macan J, Bjelajac AK. *Arh Hig Rada Toksikol*. 2025 Jun 1;76(2):102-12.

The aim of this study was to examine the effects of working hours on anxiety symptoms in highly educated helping professionals, especially through sleep duration, perceived stress and sleep quality. We analysed the results of 172 helping professionals (dentists, physicians, and psychotherapists, 57 % women, average age 25-63 years) who had participated in a larger study examining the effects of working conditions and constitutional factors on the onset of hand eczema. The participants answered a battery of questionnaires, including Cohen's Perceived Stress Scale, Zung Self-Rating Anxiety Scale, and a set of standard questions on sociodemographic characteristics, working hours, sleep, and job characteristics. They also underwent clinical examination of skin on hands and wrists. Participants reported working between 19 and 90 h a week, with 25.1 % working more than 50 h a week. Several path analysis models used in the study showed that working hours predicted anxiety only indirectly. The final model "working hours → sleep duration on workdays → perceived stress → anxiety symptoms" showed excellent fit [$\chi(2)(14)=10.345$; $P>0.05$; CFI=1.000; RMSEA 90 % CI (0.000, 0.054); $P>0.05$; SRMR=0.028]. Our results indicate that long working hours are associated with shorter sleep duration, which, in turn, is associated with higher levels of perceived stress and subsequently higher levels of anxiety. Long working hours in highly educated helping professionals may therefore put at risk their own health and safety and that of the recipients of their services.

Lien vers l'article

Association of long working hours with psychological distress in men with pregnant partners: An observational study from the Japan Environment and Children's Study.

Inadera H, Matsumura K, Kasamatsu H, Sakai J, Tsuchida A. *PLoS One*. 2025;20(6):e0326864.

BACKGROUND: It has been suggested that working long hours affects workers' mental health, although findings have been inconsistent. In this study, we investigated the association of working hours with psychological distress in a population of Japanese men with pregnant partners, using data from the Japan Environment and Children's Study. METHODS: Data from 44,996 men were analyzed and weekly working hours were classified into six groups. The Kessler Psychological Distress Scale (K6) was used to assess mental health. Each of the six items were assessed on a 5-point scale (0-4), with a total score of 0-24 and higher scores indicating greater psychological distress. A total score of 5-12 was considered to indicate moderate psychological distress and a score of ≥13 to indicate severe psychological distress. To investigate the association of working hours with psychological distress, multinomial logistic regression analysis was performed to calculate odds ratios (ORs) and 95% confidence intervals (CIs). RESULTS: The results showed that after adjusting for covariates, weekly working hours was positively associated with moderate and severe psychological distress. Compared with men who worked ≤40 h per week, those who worked >55 to ≤65 h or >65 h per week had significantly higher ORs (95% CIs) for moderate psychological distress, 1.12 (1.03-1.21) and 1.34 (1.24-1.45), respectively, and those working >65 h per week had significantly higher OR, 1.84 (1.47-2.32) for severe psychological distress. For these two outcomes, a significant p for trend (<.0001) was observed in both the crude and adjusted models.

CONCLUSION: The results of this study suggest that the greater time constraints resulting from working long hours are associated with psychological distress in Japanese men with pregnant partners.

Lien vers l'article

Troubles cognitifs et de la vigilance

Working hours indirectly affect anxiety symptoms through sleep and stress in dentists, physicians, and psychotherapists.

Tomac P, Rapić IJ, Lugović-Mihić L, Macan J, Bjelajac AK. *Arh Hig Rada Toksikol*. 2025 Jun 1;76(2):102-12.

The aim of this study was to examine the effects of working hours on anxiety symptoms in highly educated helping professionals, especially through sleep duration, perceived stress and sleep quality. We analysed the results of 172 helping professionals (dentists, physicians, and psychotherapists, 57 % women, average age 25-63 years) who had participated in a larger study examining the effects of working conditions and constitutional factors on the onset of hand eczema. The participants answered a battery of questionnaires, including Cohen's Perceived Stress Scale, Zung Self-Rating Anxiety Scale, and a set of standard questions on sociodemographic characteristics, working hours, sleep, and job characteristics. They also underwent clinical examination of skin on hands and wrists. Participants reported working between 19 and 90 h a week, with 25.1 % working more than 50 h a week. Several path analysis models used in the study showed that working hours predicted anxiety only indirectly. The final model "working hours → sleep duration on workdays → perceived stress → anxiety symptoms" showed excellent fit [$\chi(2)(14)=10.345$; $P>0.05$; CFI=1.000; RMSEA 90 % CI (0.000, 0.054); $P>0.05$; SRMR=0.028]. Our results indicate that long working hours are associated with shorter sleep duration, which, in turn, is associated with higher levels of perceived stress and subsequently higher levels of anxiety. Long working hours in highly educated helping professionals may therefore put at risk their own health and safety and that of the recipients of their services.

Lien vers l'article

Travail posté et de nuit

Généralités et prévention

Detailed assessment of night shift work aspects and potential mediators of its health effects: the contribution of field studies.

van der Grinten T, van de Langenberg D, van Kerkhof L, Harding BN, Garde AH, Laurell C, et al. *Front Public Health*. 2025;13:1578128.

Night shift work has been associated with adverse health outcomes, but inconsistencies in epidemiological findings reveal gaps in understanding the mechanisms involved. Beyond shift schedules (e.g., duration and intensity) and nighttime light exposure, we propose assessing ten key aspects to enhance understanding of shift work's nature and health implications. These include: (1) exposure-related factors ("meal timing and composition during the night shift," "physical activity during the night shift"); (2) potential mediators ("supplements and medication use," "social disruption," "sunlight exposure," "meal timing and dietary patterns outside shifts," "physical activity," "sleep quality," and "substance use"); and (3) effect modifiers ("occupational co-exposures"). Recent advances in technology, such as mobile apps, wearable sensors, and biomarkers, enable real-time, multidimensional assessments of these factors in field studies. Incorporating these tools into high-quality data collection can provide critical insights into the pathways linking night shift work and health. Such approaches will generate new hypotheses and inform the design of next-generation cohort and case-control studies, fostering a deeper understanding of this complex exposure and its health implications.

Lien vers l'article

Relationship Between Work With Night Shifts and Self-Rated Health: A Nationwide Prospective Cohort Study.

Kumakawa Y, Nagata T, Odagami K, Adi NP, Nagata M, Mori K. *J uoeh*. 2025;47(2):87-93.

Work with night shifts has been reported to have a variety of negative health effects. Self-rated health is an important indicator of health, yet studies regarding the relationship of work with night shifts on self-rated health have reported inconsistent findings. The present study aimed to examine that relationship. We conducted a prospective cohort study using a self-administered online questionnaire on workers aged 20 years or older in Japan. The relationship between work with night shifts and self-rated health was examined by logistic regression analysis. Compared with participants who work without night shifts, the odds ratio of poor self-rated health was significantly higher among participants who work with night shifts (odds ratio: 1.19), after adjusting for age, sex, annual household income, industry category and self-rated health at baseline. The present study suggests that self-rated health, a commonly used simple and general indicator of health effects, can be used for workers with night shifts.

Lien vers l'article

Rethinking shifts: shift length, diurnal variability, and long-term health risks for emergency medicine physicians.

Khatib N, Kempinska A, Levin H, Lynch T, Khattab N, DeSouza K, et al. *Intern Emerg Med*. 2025 Jul 4.

Emergency physicians are experts in managing critical conditions in a fast-paced everchanging environment. They deliver continuous 24/7 care and are the entry point to the healthcare system for many patients. It is essential to have healthy, alert and skilled emergency physicians at all times of the day and yet they face the physical and mental challenges of shift work. This article aims to explore the current literature on emergency department (ED) shiftwork, the mental well-being and physical

implications of shift work and offer strategies to mitigate its detrimental effects on emergency physicians.

Lien vers l'article

The efficacy of interventions in the workplace promoting exercise and a healthy diet among shift workers: A systematic review.

Dos Reis FL, Bertoloto JCF, Rodrigues TDC, Cardoso Toniasso SC, Baldin CP, Rodrigues JB, et al. *PLoS One*. 2025;20(6):e0325071.

INTRODUCTION: Chronic non-communicable diseases (CNCDs) are a major public health concern, with significant impacts on quality of life and health costs. Shift work is a risk factor associated with these diseases, since it interferes with circadian rhythms and physiological processes, and can lead to circadian desynchronization and sleep deprivation. Given this scenario, the workplace is recognized by the WHO as a strategic environment for promoting health and preventing CNCDs. OBJECTIVE: To analyze the scientific evidence regarding the efficacy of interventions to promote healthy eating and/or physical activities among shift workers. METHODS: Systematic review protocol scientific databases in the field of health: MEDLINE (via PUBMED), Excerpta Medica Database (Embase), Latin American and Caribbean Literature in Health Sciences (LILACS), Web of Science and Scientific Electronic Library Online (SciELO), between January 2013 and December 2023, and was registered in the database for the study of the systematic review PROSPERO, under number: CRD42024517563. The risk of bias was analyzed according to the assessment tool, RoB 2.0 (Revised Cochrane risk-of-bias tool for randomized trials), two of the studies were evaluated using the risk of bias tool by the Non-randomized Studies - of Interventions (ROBIN I). RESULTS: The electronic search resulted in 2361 relevant articles based on the database search. After removing duplicates and articles that did not meet the inclusion criteria, 366 articles were identified. Thirteen articles were selected for full-text review, and 7 articles were included. DISCUSSION: The selected studies show that health interventions in the workplace, although with differences in the types of interventions and populations, have favorable results. Strategies aimed at nutritional support and physical activity, with the use of technologies such as motivational messages, have shown a positive impact, which is amplified when it is possible to involve workers and adapt them in the workplace. The diversity in study designs offers a broad perspective, but the variability in research methods also brings significant challenges for comparability, which justifies the decision not to carry out a meta-analysis. In addition, most studies focus on short-term interventions and outcomes, which may not adequately reflect the long-term health benefits or risks associated with shift work. CONCLUSION: The diversity of interventions suggests that there is no single solution to promote health at the workplace. The strategies can be adapted to the specific needs and contexts of the workers and working environments. The adherence of the managers is a way of reinforcing the importance of preventative actions and allows a better adaptation of the organizational context to these activities. The lack of long-term follow-up and continued adherence are challenges that need more investment and organizational policies to ensure the effectiveness of the actions.

Lien vers l'article

Activités physiques

The relationship between circadian type and physical activity as predictors of cognitive performance during simulated nightshifts: A randomised controlled trial.

Easton D, Gupta C, Vincent G, Vandelanotte C, Duncan M, Tucker P, et al. *Chronobiol Int*. 2025 Jun;42(6):736-54.

Nightshift is associated with impaired cognitive performance on many tasks, yet performance is also moderated by individual differences. We investigated the effect of circadian type (two factors: flexible-rigid, and languid-vigour), and the efficacy of a novel countermeasure, breaking up sitting with light-intensity physical activity, in the context of nightshift performance. Thirty-three healthy adults (age M ± SD: 24.3 ± 4.6 y; 19 females) participated in a sleep laboratory study over five consecutive simulated nightshifts (2200-0600 h). Sleep opportunities occurred at 0800-1700 h. Participants were randomised to a sedentary (SIT; n = 14), or "breaking-up" sitting (BREAK; n = 19) condition. BREAK participants completed 3 min of light-intensity walking every 30 min at 3.2 km/h, while SIT participants remained seated. Every 2 h during nightshift, participants completed the Psychomotor Vigilance Task (mean RRT), Stroop Task, and Digit Symbol Substitution Task. Participants completed the revised Circadian Type Inventory which categorises individuals on a rigid-flexible scale and a languid-vigorous scale (rigid; n = 12, flexible; n = 11; languid; n = 11, vigorous n = 13). Linear mixed models showed a significant 3-way interaction between Nightshifts (1-5), Condition (SIT, BREAK), and flexibility-rigidity for mean RRT ($p = 0.03$) only. Flexible types in the BREAK condition had better performance than rigid BREAK, rigid SIT, and flexible SIT over five nights, with performance marginally worse on the first night for all participants apart from rigid SIT. Linear mixed models showed a significant 2-way interaction between Nightshifts (1-5), and flexibility-rigidity for percentage accuracy on the Stroop task, and a significant 2-way interaction between Nightshifts (1-5), and languid-vigour for response time on the Stroop task. Accuracy worsened for rigid types, while response time on the Stroop task improved for languid types over five nights. No other significant differences were found. Breaking up sitting with light-intensity physical activity maintained sustained attention for flexible circadian types across all five experimental nightshifts. Both rigidity and languidity moderated trends in performance, though whether these differences have meaningful real-world implications must be explored further. Our results indicate that circadian type classifications should be accounted for in breaking up sitting interventions overnight.

Lien vers l'article

Autres pathologies

Association Between Shift Working and Brain Morphometric Changes in Workers: A Voxel-wise Comparison.

Choi JY, Kim S, Lee Y, Kim D, Lee W. *Saf Health Work*. 2025 Jun;16(2):236-42.

OBJECTIVE: There is abundant evidence from observational studies linking various health problems to shift work, but there is a lack of brain-based neurological evidence. Therefore, we examined morphometric changes on brain magnetic resonance imaging (MRI) between shift and non-shift workers. METHODS: A total 111 healthy workers participated in this study and underwent brain MRI, with the analysis incorporating merged workers' health surveillance data from regional hospital workers. Voxel-based morphometry analysis was used to investigate regional changes in the gray matter volume. To investigate the association of structural changes between shift workers and non-shift workers, a general linear model and threshold-free cluster enhancement were used with covariates, including total intracranial volume, age, and sex. RESULTS: After family-wise error correction, non-shift workers exhibited a significantly larger cerebellar region ($p < 0.05$) than shift workers. Conversely, the inferior parietal gyrus was found to be significantly larger in shift workers

than in non-shift workers with family-wise error correction. CONCLUSIONS: We observed increased clusters in the brains of both shift and non-shift workers, suggesting that the acquired occupational environment, including the shift work schedule, could influence brain neuroplasticity, which is an important consideration for occupational health.

Lien vers l'article

The Association Between Shift Work and Lipid Health in Chinese Railway Workers: A Longitudinal Analysis of 6 Years.

Wu H, Jin Y, Liu Y, Zeng S, Wen L, Qian C, et al. *J Occup Environ Med*. 2025 Jun 1;67(6):e406-e12.

OBJECTIVE: This study aimed to evaluate the longitudinal association between shift work and lipid health among railway workers. METHODS: Data from 1126 railway workers with at least two physical examinations from 2016 to 2021 were retrieved. Records of triglycerides, total cholesterol, low-density, and high-density lipoprotein cholesterol were extracted, with dyslipidemia defined by Chinese guidelines. Group-based trajectory model were adopted to identify the trajectory of lipid health. Multinomial logistics regression evaluated the association between shifts and trajectories of lipid health. RESULTS: Three trajectories of dyslipidemia prevalence were identified: persistently low (40.8%), persistently moderate (34.3%), and persistently high (24.9%). Those on dedicated/pooled charter shifts were more likely be persistently low dyslipidemia prevalence trajectory group (odds ratio = 0.617, 95% confidence interval = 0.408-0.934). CONCLUSIONS: Nonregular day shift work is associated with lower levels of lipid profile and lower risk of lipid abnormalities.

Lien vers l'article

Review Article: Night Shift Work, Circadian Disruption, and the Gut Microbiome: Implications for Human Health.

Vivarelli S, Marconi A, Matera S, Falzone L, Fenga C. *Crit Rev Oncog*. 2025;30(2):67-81.

The gut microbiome (GM) plays a critical role in regulating a number of physiological processes within the human host, including metabolism, immune function, and protection from pathogens. Emerging evidence suggests that occupational exposures, particularly working night shifts or during irregular hours, significantly influence the GM composition and functionality. These disruptions are closely tied to the misalignment between the host's circadian rhythms and the GM's internal clocks, leading to dysbiosis and increased systemic inflammation. This misalignment has been linked to the development of several health conditions, including dysmetabolism, type 2 diabetes, obesity, cardiovascular diseases, and gastrointestinal disorders. This review provides a thorough analysis of the current research on workers who are exposed to night shifts, highlighting the profound impact of circadian misalignment on both the GM wellbeing and the overall human health. Innovative interventions, such as dietary supplementation with probiotics, prebiotics, circadian-aligned nutrition, and time-restricted eating, offer promising strategies for restoring the GM balance and synchronizing the microbiome with the host's circadian rhythms affected by occupational stressors. Precision-based interventions tailored to specific occupational exposures and circadian patterns may provide effective solutions for improving worker's health and preventing long-term chronic diseases associated with detrimental exposures. In light of these findings, integrating microbiome-targeted approaches into occupational health policies could lead to better health outcomes, reduce the risk of chronic diseases, and enhance the overall well-being of at-risk workers. Occupational research should continue to explore these personalized approaches, together with novel assessment strategies, to optimize health interventions and mitigate the long-term effects of night shift work.

Lien vers l'article

Insight inTo Stress and POOping on Work TIME (ITS POO TIME): Protocol for a Web-Based, Cross-Sectional Study.

Tully PJ, Cosh S, Wittert G, Martin S, Vincent A, Mikocka-Walus A, et al. *JMIR Res Protoc*. 2025 Jun 5;14:e58655.

BACKGROUND: Long occupational working hours and shift work are common in high-, middle-, and lower-income economies. Bowel movement frequency and stool form in occupational settings may be important markers of stressful working conditions as well as diurnal gut microbiota action, gastrointestinal discomfort, and disorders of gut-brain interaction (DGBI). Characterizing DGBI in shift and nonshift workers could help identify the impact of diurnal work patterns on workers' physical and mental health, including anxiety related to bowel movements. OBJECTIVE: This study aims to outline the Insight inTo Stress and POOping on work TIME (ITS POO TIME) protocol describing a web-based multimethods research project on DGBI, stool form and frequency, psychological factors, sleep, diet, and anxiety related to bowel movements in occupational settings by comparison to residential settings. METHODS: Study 1 comprises a web-based convenience sampling survey to acquire quantitative data from adults who are engaged in paid employment. We seek to assess occupational characteristics, organizational factors, as well as standardized questionnaires for stool form, DGBI assessed based on Rome-IV criteria, sleep, diet, bowel movement anxiety (ie, parcopresis), and distress. Study 2 is a qualitative study that asks open-ended questions about respondents' attitudes to defecation at work. Analyses for study 1 will explore rates of DGBI in shift versus nonshift workers and explore how occupational characteristics are associated with occupational bowel movement stool form and frequency. With regards to distress and parcopresis, study 1 will analyze how parcopresis, distress, and contamination fears are associated with stool form and frequency in occupational settings compared with residential settings. Study 1 is designed to have 90% power to detect a 5% difference in DGBI prevalence between groups at α=.05 based on the conservative estimate of 15% DGBI prevalence in shift workers and 10% DGBI prevalence in nonshift workers, with a final sample of 1967 required. Study 2 qualitative data will be analyzed using inductive thematic analysis to identify themes concerning feelings and attitudes about bowel movements in occupational settings. RESULTS: The findings of ITS POO TIME will elicit important information on what factors are associated with bowel movements and stool form and frequency in occupational settings and identify associations pertinent to occupational health. Data collection commenced in January 2019 and finished enrollment in December 2023. Study 1 obtained 1872 responses and fell short of the desired sample size. Study 2 received 337 responses, and the primary results are expected to be published in 2025 and the qualitative results published in 2026. CONCLUSIONS: The results of the research described in this research protocol will have direct implications for industry, employers, and policy makers concerning DGBI, stress, and worker health.

Lien vers l'article

Associations Between Shift Work, Sociodemographic and Lifestyle Characteristics, Body Measurements, and MASLD.

Tosoratto J, Tárraga López PJ, López-González Á A, Busquets-Cortes C, Obrador de Hevia J, Ramirez-Manent JI. *Life (Basel)*. 2025 Jun 16;15(6).

Background: Metabolic dysfunction-associated steatotic liver disease (MASLD) is the most prevalent chronic liver disorder worldwide and is closely linked to the components of metabolic syndrome. Shift work, through its disruption of circadian rhythms and the promotion of adverse behavioral patterns, has been proposed as a potential contributor to metabolic dysfunction and liver disease, yet evidence on its association with MASLD remains limited in large, heterogeneous occupational populations. Objectives: To investigate the association between shift work and MASLD risk using multiple validated non-invasive indices in a large sample of Spanish workers, and to explore the influence of

sociodemographic characteristics, lifestyle behaviors, and sex on these associations. Methods: This cross-sectional study analyzed data from 53,053 employed adults across diverse sectors in Spain, including 31,753 men and 21,300 women. The participants underwent standardized occupational health assessments between 2019 and 2020. The MASLD risk was evaluated using seven indices: fatty liver index (FLI), hepatic steatosis index (HSI), ZJU index, fatty liver disease (FLD) index, Framingham steatosis index (FSI), lipid accumulation product (LAP), and BARD score. Sociodemographic, anthropometric, clinical, biochemical, and lifestyle data were collected. Multinomial logistic regression models were used to assess independent associations between shift work and high-risk MASLD scores. Results: Shift workers exhibited significantly higher mean values and prevalence of elevated MASLD scores across all indices compared to non-shift workers, in both sexes. In men, the prevalence of high BARD scores increased from 43.5% (non-shift) to 71.5% (shift), while in women it rose from 49.9% to 85.7%. Multivariate analysis confirmed that shift work was independently associated with an increased MASLD risk, particularly for HSI (OR: 7.83; 95% CI: 7.40-8.26) and ZJU (OR: 5.91; 95% CI: 5.60-6.22). Male sex, older age, smoking, and blue-collar status were also consistently associated with elevated risk scores. Conclusions: Shift work is significantly associated with an increased MASLD risk, independent of sociodemographic and lifestyle factors. Women and blue-collar workers may be especially vulnerable to the hepatic consequences of circadian disruption. These findings support the inclusion of liver health screening in occupational health programs and highlight the need for targeted interventions to reduce the MASLD risk among shift-working populations. Cross-sectional design limits causality; longitudinal studies are needed to confirm temporal relationships.

Lien vers l'article

Night-shift work and susceptibility to infectious diseases: a systematic review and meta-analysis.

Loef B, Bosma E, van Kerkhof LWM, Proper KI, van Baarle D, Dollé MET. *Scand J Work Environ Health*. 2025 Jul 1;51(4):298-311.

OBJECTIVES: A growing body of research on infection susceptibility among night-shift workers has emerged, particularly since the COVID-19 pandemic. However, a comprehensive overview is still lacking. Therefore, this review aimed to synthesize the evidence on the association between night-shift work and susceptibility to infectious diseases. METHODS: Embase and PsycINFO were systematically searched for studies published up to September 2024. Studies were included if they comprised a working population, night-shift workers were compared to non-shift workers, and the outcome was an infectious disease. Results were descriptively synthesized for common respiratory infections (flu and common cold), SARS-CoV-2 infection, and other infections. Pooled effect estimates were calculated using random-effects meta-analysis. RESULTS: In total, 16 articles describing 14 studies among 191 320 workers were included. Based on 4 studies, night-shift work was not associated with a significantly increased risk of common respiratory infections [odds ratio (OR) 1.11, 95% confidence interval (CI) 0.97-1.27, I(2)=65.8%[. However, night-shift workers had a higher risk of SARS-CoV-2 infection than non-shift workers (OR 1.31, 95% CI 1.09-1.58, I(2)=92.2%, N=10 studies). This association was stronger in higher-quality studies and studies conducted in the first year of the COVID-19 pandemic. For other infections, insufficient studies were available to conduct a meta-analysis. The certainty of evidence was graded very low due to a limited number of (prospective cohort) studies and high inconsistency in the available studies. CONCLUSIONS: This systematic review and meta-analysis showed that night-shift work was associated with an increased risk of SARS-CoV-2 infection, but not of common respiratory infections. To address the lack of high-certainty evidence, more studies are needed that apply a prospective design with appropriate adjustment for confounding factors and more extensive information on night-shift work exposure.

Lien vers l'article

How Shift Work Affects Our Gut Microbiota: Impact on Gastrointestinal Diseases.

Saviano A, Candelli M, Brigida M, Petruzziello C, Tilli P, Franceschi F, et al. *Medicina (Kaunas)*. 2025 May 27;61(6).

Background and Objectives: Shift work and night work are common among emergency physicians. It is necessary to provide continuous care to patients, especially with acute diseases, including throughout the night. Literature studies show that shift and night workers have an altered light exposure, timing of sleep and intake of food. The consequence of this desynchronization with the biological clock can lead these workers to be more exposed to developing some acute and chronic health conditions. In particular, the alteration of the sleep-wake cycle, fatigue, the shortened sleep duration and the misalignment of the body's hormone production is a codified risk factor of gut dysbiosis that can lead to acute and chronic diseases, also gastrointestinal ones. the aim of this narrative review is to collect and summarize evidence about the association between the disruption of the circadian rhythm, sleep and food timing alterations, gut dysbiosis and the risk of gastrointestinal diseases among shift and night workers. Materials and Methods: we searched for evidence about the association of shift and night work, dysbiosis, gut microbiota and gastrointestinal diseases among shift workers in healthcare settings. Results: shift work and night work are associated with a higher risk of diseases, an inflammatory state and the alteration of the gut microbiota composition; but definitive data are still inconsistent. Conclusions: Until now, obtaining conclusive results in regard to the relationship between shift work, the gut microbiota and the increased risk of gastrointestinal disorders has been particularly complex and not yet feasible. More confirmatory studies are needed to better characterize risk factors and realize preventive measures.

Lien vers l'article

Epigenetic markers of adverse lifestyle identified among evening and night shift workers in two UK population-based studies: Generation Scotland and Understanding Society.

Hulls PM, McCartney DL, Bao Y, Walker RM, de Vocht F, Martin RM, et al. *Chronobiol Int*. 2025 May;42(5):561-71.

Epigenetic changes in the form of DNA methylation (DNAm) may act as biological markers of risk factors or adverse health states. In two cohort studies, Generation Scotland (GS) (n = 7,028) and Understanding Society (UKHLS) (n = 1,175), we evaluated associations between evening or night shift work and four lifestyle factors (body mass index, smoking, alcohol, education) through linear regression using both conventionally measured phenotypes and DNA methylation-based scores proxying the phenotypes. DNA methylation-based measures of biological ageing were also generated using six established "epigenetic clocks." Meta-analysis of GS and UKHLS results was conducted using inverse-variance weighted fixed effects. Evening/night shift work was associated with higher BMI (0.79; 95%CI 0.02, 1.56; p = 0.04) and lower education (- 0.18; - 0.30, - 0.07; p = 0.002). There was weak evidence of association between evening/night shift work and DNAm scores for smoking (0.06, - 0.03, 0.15; p = 0.18) and education (- 0.24; - 0.49, 0.01; p = 0.06) in fully adjusted models (adjusted for age, sex, methylation principal components and phenotypic measures). Two of the epigenetic age measures demonstrated higher age acceleration among evening/night shift workers (0.80; 0.42, 1.18; p < 0.001 for GrimAge and 0.46; 0.00, 0.92; p = 0.05 for PhenoAge). In over 8,000 participants from two cohort studies, evening/night shift work was associated with both phenotypic and DNA methylation-based measures of higher BMI and lower education. DNAm predictors of smoking and ageing were also related to evening/night shift work. Epigenetic measures may provide insights into the health and lifestyle profiles of night shift workers.

Lien vers l'article

The roles of lifestyle factors and genetic risk in the association between night shift work and cholelithiasis: a prospective cohort study.

He W, Mi N, Jin K, Jin B, Zhong R, Liu Z, et al. *Front Endocrinol (Lausanne)*. 2025;16:1573203.

BACKGROUND: Night shift work has been associated with adverse health outcomes. Whether night shift work is associated with cholelithiasis remains uncertain, and the roles of genetic risk and lifestyle factors in cholelithiasis risk are unclear. METHODS: We conducted a prospective analysis of 219,810 UK Biobank participants. Cox proportional hazards models were used to estimate the association between night shift work and incident cholelithiasis. Polygenic risk score analyses and causal mediation analyses were performed to investigate the roles of the genetic risk and lifestyle factors in cholelithiasis risk. RESULTS: Compared with day workers, the HR and 95% CI of cholelithiasis was 1.09 (1.01-1.17) for individuals with rarely/some night shifts and 1.18 (1.04-1.35) for those with usual/permanent night shifts. Additionally, those with a higher frequency of night shifts and a longer length of each night shift were associated with an increased risk of cholelithiasis. Notably, individuals with usual/permanent night shifts and high genetic risk exhibited the highest risk of cholelithiasis (HR: 1.48, 95% CI: 1.21-1.81). Mediation analysis indicated that a substantial portion (24.64%) of the association was mediated by BMI, followed by unhealthy alcohol intake (4.50%) and sedentary time (1.82%). CONCLUSIONS: Night shift work is associated with an increased risk of cholelithiasis, with this relationship being largely mediated by lifestyle factors. Reducing the frequency and length of night shifts may help mitigate the incidence of cholelithiasis among night shift workers, particularly for those with heightened genetic susceptibility.

Lien vers l'article

Impact of nocturnal duty on cardiometabolic health: Insights across professions.

Bou Sanayeh E, Salman O, Khattar G, Nevelev D. *World J Cardiol*. 2025 May 26;17(5):105669.

This editorial explores the significant cardiometabolic outcomes of nocturnal sentry duty and its broader implications for other professions with overnight work. Highlighting the paradox of essential nighttime labor and its adverse physiological effects, we discuss how occupations like healthcare, hospitality, and emergency services are similarly affected. The study by Lin et al provides critical insights into these dynamics and lays the groundwork for understanding nocturnal duty's multifaceted impact on human health.

Lien vers l'article

Impact of cold exposure on shift working seafood handlers in Northern Norway: a comparative analysis across work shifts.

Chau PKT, Schjølberg T, Eriksen MB, Moe AG, Graff P, Haugen F. *J Occup Med Toxicol*. 2025 Jun 23;20(1):22.

OBJECTIVE: This study aimed to investigate the impact of occupational thermal exposure on shift workers, specifically whether cold exposure elicits distinct physiological responses and thermoregulatory recovery across different tasks and shift types. METHODS: Observational study at two factories processing prawns in Northern Norway in which 32 shift-working seafood handlers with different task responsibilities were followed for a single shift (morning, evening, night). The participants answered questionnaires regarding thermal exposures at work and related symptoms; these were compared to answers from 12 administration workers. Personal thermal loggers measured the range of temperature exposures associated with four different seafood handler work tasks. Pre- and post-shift plasma levels of FGF21, GDF15 and cytokines were analysed using immunoassays. As a proxy for thermoregulatory response across different shift types, hand temperature was measured

repeatedly before and after breaks using a thermal imaging camera. RESULTS: Most seafood handlers reported subjective impact from cold exposure. Cold working conditions of ≤ 10 °C were measured across all shifts and three different seafood handling tasks. The morning shift-seafood handlers displayed lower plasma FGF21 post-shift vs. pre-shift; the evening and night shifts showed no difference. GDF15 levels remained unchanged regardless of shift types but were positively correlated with age. Night shift was associated with increased plasma IL6 post-shift vs. pre-shift. Thermoregulatory responses showed a positive linear relationship with break duration but did not differ between shifts. CONCLUSIONS: The findings suggest that exposure levels are closely linked to specific tasks and shifts, with thermoregulatory responses varying by task type and time of day.

Lien vers l'article

SHift-working Investigation of Fasting and Timing (SHIFT) of diet: A cross-sectional assessment of nurses' dietary quality, fasting duration, and feasibility of completing a 7-day diet log.

Farrell ET, Turner-McGrievy GM, Dawson RM, Heflin K, Wirth MD. *Chronobiol Int*. 2025 Jul 2:1-12.

Nurses experience some barriers to healthy eating and weight loss that are different than the general population. This study examined diet timing and quality, and interest in time-restricted feeding (TRF), and compared diet quality between day and shift-working nurses. The cross-sectional SHift-working Investigation of Fasting Time and Diet Study was conducted among nurses (n = 123) in the United States. Diet was tracked for up to 7 days using the ASA24 to determine Energy-density Dietary Inflammatory Index (E-DII(TM)) scores, Heathy Eating Index (HEI), and fasting duration. Self-reported demographics, psychosocial measures (e.g. stress and depression), and TRF anticipated barriers and facilitators were obtained. Multiple linear regression analyses were conducted to compare night/rotating and dayshift. The primarily white (86%) and female (95%) participants had a mean age and body mass index (BMI) of 34.1 ± 10.0 years and 27.3 ± 5.6 kg/m(2), respectively. Most participants (75%) expressed interest in TRF. Fasting duration was short (mean hours = 11.9), and diet quality poor (mean: E-DII score = -0.05; HEI score = 54.0). Night/rotating shift had more anti-inflammatory diets compared to dayshift (mean E-DII: night/rotating = 0.19 vs dayshift = 1.21; p = 0.04). Nurses have challenging barriers to improving weight. Since most nurses indicated interest in a TRF intervention, TRF may hold potential as a key dietary approach for nurses.

Lien vers l'article

Sleep deprivation as a risk factor for cortical gray matter reduction in new medical residents.

Alvarez-Ornelas NA, Macías-Cervantes HE, Rodríguez-Villaseñor P, Sánchez-Figueroa O, Flores-Rodríguez R, García-Cisneros ZG, et al. *J Neuroradiol*. 2025 Jun;52(4):101357.

BACKGROUND AND PURPOSE: Sleep is an essential physiological condition for the proper functioning of humans, both physiologically, cognitively, and psychologically. Sleep deprivation leads to a loss of psychomotor skills in humans. It is important to evaluate the structural changes experienced by medical residents who are sleep-deprived due to extensive work shifts, including night shifts, assigned during their training program. Therefore, the main outcome was to evaluate the structural changes in the cortical gray matter and the hippocampus assessed by brain magnetic resonance imaging (MRI) in newly admitted medical residents four months after the start of the medical specialty. MATERIAL AND METHODS: Forty-one newly admitted medical residents were enrolled, and an initial questionnaire was administered to assess sleep quality. All participants underwent a brain MRI study, utilizing an advanced MRI sequence: a 3D inversion recovery (IR)-prepped fast spoiled gradient-recalled (SPGR) high-resolution T1-weighted sequence. The images were then anonymized and reformatted, and volumetric analyses of gray matter and hippocampus were performed using an open-access platform for MRI brain analysis (volBrain). This process was repeated four months later with the acquisition of a new brain MRI study for each participant. RESULTS: For gray matter volume, a baseline value of

728.04 ± 63.95 cm³ and a final value of 715.11 ± 59.38 cm³ were found (p < 0.01), and the frontal lobe showed the greatest reduction, with an initial value of 181.92 ± 15.58 cm(3) and a final volume of 176.45 ± 17.35 cm(3) (p = <0.001). We found an OR of 1.52 (95 % CI 0.93-4.14, p = 0.01) between working night shifts and gray matter reduction. CONCLUSIONS: The results of this study show a statistically significant reduction in gray matter volume in first-year residents after four months of shift work, with the greatest reduction in the frontal lobe.

Lien vers l'article

Association between night shift work and markers of metabolism, cardiovascular and immune system in a population-based German cohort.

Bittner N, Korf HW, Moebus S, Schmidt B, Caspers S. *Geroscience*. 2025 Jun;47(3):5141-55.

In humans, night shift work is a major reason for chronodisruption, may affect health and increase the risk of a metabolic syndrome, but results obtained so far are ambiguous. In this population-based, cross-sectional study, PRESENT and FORMER shift workers were compared to age- and sex-matched controls, who never worked in shift with regard to body mass index, waist-hip-ratio total, high-density lipoprotein and low-density lipoprotein, cholesterol and C-reactive protein. Moreover, association with sex, length of shift work and medication were investigated. The present results do not support the hypothesis that night shift work per se is associated to an increased risk of metabolic syndrome, and cardiovascular and immune malfunctions: no differences were found in mean anthropomteric and blood values between present or former shift workers and respective matched controls. When analyzing the proportion of participants showing values beyond the clinically relevant cut-offs, no general effect of shift work was observed, but the data may suggest an interaction between shift work and sex. These divergent results may be due to differences in the socio-economic status, the health care system and the shift schedule. All these parameters need to be considered in future studies addressing the impact of night shiftwork on human health.

Lien vers l'article

Cancers

Night Shift Work and Lung Cancer Risk: A Prospective Cohort Study with Mediator Analysis from the UK Biobank.

Zheng X, Feng Y, He J, Zou X, Liang J, Wu X, et al. *Sleep*. 2025 Jun 9.

STUDY OBJECTIVES: This study investigated the association between night shift work and lung cancer risk using data from the UK Biobank cohort of 278 650 participants, while exploring potential biological mediators and gene-environment interactions. METHODS: Cox proportional hazards models assessed relationships between current night shift status, lifetime duration, and frequency of night shifts with lung cancer incidence. Mediation analyses examined physical measurements, lifestyle habits, blood immune cell parameters, and plasma proteins as potential mediating pathways. Polygenic risk scores evaluated genetic predisposition interactions. RESULTS: During a median follow-up of 10.64 years, 1524 incident lung cancer cases were identified. A significant dose-response relationship was observed between increasing categories of current night shift work and lung cancer risk(Shift but never/rarely night shifts HR 1.18, 95% CI:1.00-1.39, p=.047; Some night shifts HR 1.28, 95% CI: 1.06-1.55, p=.010; Some night shifts HR 1.19, 95% CI: 0.90-1.57, p=.220; P for trend = 0.004). Smoking plays a significant mediating role in this association. Mediation analysis also identified prostasin (PRSS8), alkaline phosphatase (ALPP) and carcinoembryonic antigen-related cell adhesion molecule 5 (CEACAM5) as key mediators, collectively explaining over 25% of the total effect. CONCLUSIONS: This study suggests that night shift work, particularly when combined with smoking, is associated with an increased risk of lung

cancer. The identification of potential mediators such as prostasin, alkaline phosphatase and carcinoembryonic antigen-related cell adhesion molecule 5 provides insights into the underlying biological mechanisms. Future research should validate these findings and explore targeted prevention strategies for high-risk populations.

Lien vers l'article

Night shift work and risk of melanoma: a prospective cohort study among 59,384 female nurses in the Netherlands.

de Bruijn L, van Duijne HM, Vermeulen RCH, Vlaanderen JJ, Kromhout H, Jóźwiak K, et al. *Cancer Epidemiol Biomarkers Prev*. 2025 Jun 23.

BACKGROUND: Night shift work may be a risk factor for melanoma, potentially due to suppressed melatonin and decreased vitamin D levels. We examine the potential association between night shift work and melanoma risk using detailed, lifetime information on night shift work in a large cohort of Dutch nurses. METHODS: We used questionnaire data from the Nightingale Study obtained from 59,384 (former) female nurses aged 19-65 (median: 48.7 years; interquartile range: 39.6-55.3). Hazard ratios (HR) and 95% confidence intervals (95%CI) for melanoma risk in relation to various lifetime night shift work exposure variables were estimated. RESULTS: During 10 years of follow-up, 307 women developed melanoma. Melanoma risk did not differ between women who worked night shifts and those who never worked night shifts (age-adjusted HR=0.98; 95%CI=0.73-1.30). No statistically significantly increased risks were found for a longer night shift work duration, a higher cumulative number of nights worked, a higher number of consecutive nights worked per month, or a shorter time since quitting night shift work. CONCLUSION: We found no association between night shift work exposure and melanoma risk. IMPACT: This study should reassure nurses that working night shifts is not associated with an increased risk of melanoma.

Lien vers l'article

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Factors influencing medical insurance participation and satisfaction among non-standard workers in China.

Wu W, Zeng Y. *BMC Health Serv Res*. 2025 Jul 5;25(1):932.

OBJECTIVES: Universal health coverage is the goal of China's healthcare system reform. However, with the growth of the gig economy, problems such as the failure of non-standard workers to participate in basic medical insurance continue to arise. Consequently, we investigated the factors that influence non-standard workers' medical insurance participation and satisfaction, with the goal of improving their participation. METHODS: This study collected data on insurance participation among non-standard workers through 635 questionnaire surveys. Based on Andersen's model and logistic regression analysis, this study examined the factors influencing their insurance enrollment and analyzed the satisfaction level with medical insurance policies among those who participated. RESULTS: The majority of non-standard workers were young healthy men, whose utilization of health services was low. The coverage rate of basic medical insurance for non-standard workers was 38.4%, which is relatively low. Those who were young with a high monthly income, participated in commercial

or other medical insurance, and self-rated their health status as good were inclined to opt out of basic medical insurance. Non-standard workers' satisfaction with the basic medical insurance policy was 2.5 points on average. Those who were male, highly educated, floating population members, lacked an understanding of the basic medical insurance policy, and self-rated their health status as poor were more likely to have low satisfaction with the basic medical insurance policy. CONCLUSION: The insurance participation rate of non-standard workers needs to be improved. To do so, it is necessary to intensify the publicity concerning medical insurance policies; raise the awareness of non-standard workers, especially young healthy non-standard workers, about insurance; and improve the insurance policies of non-standard workers according to their industry particularities.

Lien vers l'article

An Integrative Health Educational Intervention for RNs Working at Night: A Pilot Study.

Withall J, Gabbe L, Link L, Coughlin V, Swenson DG, Kaplan S, et al. *Am J Nurs*. 2025 Jul 1;125(7):24-30.

BACKGROUND: Supporting nurses' well-being has become a top priority for nurse leaders, organizations, and nurses themselves. It's important that RNs have effective ways to access and use various integrative health programs and resources that are available to them. But this can be especially difficult for nurses who work at night, who often cannot easily participate in health and wellness activities provided during the day. PURPOSE: To assess whether a 13-week electronic, asynchronous integrative health educational intervention, tailored to the unique needs of clinical RNs working at night, was useful, applicable, and accessible to them. METHODS: This cross-sectional observational pilot study was conducted in a sample of clinical nurses who work at night at four hospitals within an academic health system. The study was guided by the Quadruple Aim framework, which considers clinician wellness to be a prerequisite to safe patient care. The study intervention was an educational curriculum consisting of 13 modules delivering instructive integrative health content. Weekly modules were focused on topics in the categories of healthful eating, purposeful movement, sleep hygiene, and stress reduction. Topic information was sent to participants via an electronic data capture system every Monday at midnight for 13 consecutive weeks. Participants completed pre- and postintervention surveys, as well as short weekly surveys assessing their engagement and interest in that week's content. RESULTS: The initial sample consisted of 108 participants who completed the preintervention survey. Of these, 76 completed the pre- and postintervention surveys, and 58 completed the entire program, including all 13 modules. Descriptive statistics, a proxy metric for engagement (time per page view), and results from an optional usability survey were analyzed. Stress management content had the highest engagement and was ranked the highest priority of the four topic categories. Sleep hygiene content was ranked the second highest priority. Statistically significant differences were found for participants' pre- and postintervention use of stress management and sleep hygiene resources. CONCLUSIONS: Providing electronic and asynchronous means to access integrative health programs and resources programs can be an effective way to engage the cohort of RNs who work at night. In developing or expanding such programs and resources, it's paramount to consider their usefulness, applicability, and accessibility to the intended audience.

Lien vers l'article

Association between nonstandard work schedules and employees' self-rated mental health with perceived work stress, work-family conflict and job satisfaction as psychosocial mediators: a national study in China.

Wang Z, Zhang G. *Front Psychol*. 2025;16:1561653.

BACKGROUND: Nonstandard work schedules are prevalent across the industrialized world. While prior research indicates nonstandard work schedules lead to poor mental health, little research has explored the psychosocial pathways underlying the association between work schedule and mental health. This

study aimed to fill this gap by testing for the mediating roles of perceived work stress, perceived work-family conflict and perceived job satisfaction in the association between nonstandard work schedules and employees' self-rated mental health. METHODS: Using a nationally representative sample of data from the Chinese General Social Survey (CGSS) in 2021 (N = 1857), and using the Process v4.1 for SPSS, we examined the association between nonstandard work schedules and employees' self-rated mental health and estimated the independent and joint mediation effects of perceived work stress, perceived work-family conflict and perceived job satisfaction. RESULTS: A total of 1857 employees participated in the final analysis. Of these, 1,331 employees (71.7%) work fixed day shifts, 24 employees (1.3%) work fixed night shifts, 206 employees (11.1%) work rotating shifts, 243 employees (13.1%) work irregular schedules and 53 employees (2.8%) work other schedules. Nonstandard work schedule was negatively correlated with employees' self-rated mental health and perceived job satisfaction, and positively correlated with perceived work stress and work-family conflict ($p < 0.001$). The independent mediation effects of perceived work stress, perceived work-family conflict and perceived job satisfaction was 17.3, 22.4 and 16.5%, respectively. The joint effect of all three mediators mediated about 36.2% of the relationship between nonstandard work schedules and employees' self-rated mental health. Sensitivity analyses revealed that rotating shift ($p < 0.05$) and irregular schedule ($p < 0.001$) were negatively associated with employees' self-rated mental health, perceived job satisfaction fully mediated the association between rotating shift and employees' self-rated mental health, while perceived work stress, work-family conflict and job satisfaction jointly and partially mediated the association between irregular schedule and employees' self-rated mental health (the joint effect of all three mediators mediated about 42.4% of the relationship). CONCLUSION: Perceived work stress, perceived work-family conflict and perceived job satisfaction mediated the relationship between nonstandard work schedules and employees' self-rated mental health. The findings advance understanding of the psychosocial mechanisms underlying the association between work schedule and mental health.

Lien vers l'article

Mediterranean diet pattern behaviors and related socio-demographic factors in a sample of nurses: results of an observational study in Italy.

Shaholli D, De Lucia F, Ferrante C, Moretti L, Vezza F, Barletta VI, et al. *Ann Ig*. 2025 Jul-Aug;37(4):435-49.

BACKGOUND: Interest in the dietary habits of healthcare professionals, particularly nurses, has increased in recent years. Nurses play a key role in promoting healthy habits among patients, yet often struggle to maintain a balanced diet due to the demanding nature of their profession. STUDY DESIGN: Cross-sectional. METHODS: The sample identified consisted of working students who attend the master's degree course in "Nursing and Midwifery Sciences" at the University of Rome "La Sapienza" and nurses inscribed in several Italian nurses' groups on Facebook, like "Infermiere professionista della salute", "Infermieri attivi", "Infermieri di Roma e Provincia" and "Infermieri Roma". A snowball sampling was used. This observational study was carried out from May to September 2020 through an online platform, and explores the dietary habits of 549 nurses, examining correlations between eating behaviors (Mediterranean Diet Score) and work conditions, such as shift patterns, work hours, and contract types. RESULTS: The Mediterranean Diet Score had a mean value of 7.50 (SD = 1.69). Results show that 90.2% of participants can take short breaks (5-10 minutes) for meals, although stress often affects the quality of these breaks. Nurses with permanent contract ($\beta = 0.098$; $p = 0.021$) and part-time schedules ($\beta = 0.106$; $p = 0.012$) reported healthier eating habits and greater adherence to the Mediterranean diet. CONCLUSIONS: The findings highlight the need for improved access to healthy food during long shifts and the implementation of nutritional education programs to support healthier eating habits among nurses.

Lien vers l'article

Factors affecting diagnostic imaging decision-making in the emergency department during day and night shifts.

Klein RP, Velan G, Razee H, Coggins A, Lai K, Shetty A, et al. *Emerg Med J*. 2025 Jul 9.

BACKGROUND: Medical imaging use has increased progressively, prompting discussions about its clinical impact. Interventions to reduce low-value imaging have had varying success, as they generally do not consider the influence of the clinical environment on decision-making. Factors affecting imaging ordering decisions by Emergency Department (ED) medical officers (MOs) and how these factors differ between day and night shifts are poorly understood. METHODOLOGY: This mixed methods study was conducted in 2021 at a major tertiary hospital in Western Sydney. Observations and interviews with ED MOs for 20 day-shift and 26 night-shift clinical encounters were analysed to understand how and why imaging decisions were made, along with usage of imaging guidelines. Demographic and clinical patient data (including patient disposition) were obtained retrospectively from medical records to assess the impact of imaging. RESULTS: During night shifts, 18 of the 26 observed clinical encounters used diagnostic imaging, compared with 12 of the 20 observed clinical encounters during day shifts. Factors affecting decision-making during night shifts included limited resources, fatigue, reduced support for junior ED MOs and higher patient load. Interviews suggested CT was more likely to be used during night shifts as a screening tool to expedite decisions and as a substitute for unavailable imaging modalities. In contrast, imaging decisions by day shift junior MOs were influenced by the need to justify their decisions to senior MOs, prompting them to research presenting complaints and imaging indications. Generally, there was minimal reference to imaging decision-making guidelines across both shifts. CONCLUSION: Differing factors impact imaging decisions by ED MOs during day and night shifts. This needs consideration when designing and implementing targeted physician support strategies and interventions to reduce low-value imaging. Limited resources and MO fatigue should be considered when modifying guidelines/strategies aiming to support MOs during ED night shifts.

Lien vers l'article

Shift nurses' work quality and job satisfaction after implementing the Inha University hospital nursing AI scheduling system (IH-NASS).

Kang HW, Kim J, Kim KJ, Bae EK, Kang H, Jang JH, et al. *BMC Nurs*. 2025 Jul 1;24(1):792.

BACKGROUND: Shift work is essential for nurses and is the backbone of the healthcare workforce. Addressing the challenges associated with time-consuming scheduling is crucial for ensuring nurses' work quality, optimal staffing levels, and increased job satisfaction. We compared the work quality from both organizational and individual perspectives after the implementation of the Inha University Hospital Nursing Artificial Intelligence (AI) Scheduling System (IH-NASS), and analyzed the factors influencing nurses' job satisfaction, focusing on their perceptions of IH-NASS and work quality. METHODS: A total of 253 shift nurses from 14 wards where the IH-NASS was implemented at a tertiary university hospital in Korea were selected. Data from the traditional manual (December 2022, retrospective study) and the IH-NASS-generated schedules (December 2023, prospective study) were compared. Nurses' general characteristics, IH-NASS perceptions (convenience, satisfaction, and fairness), and job satisfaction were surveyed and analyzed. RESULTS: Compared to traditional manual schedules, IH-NASS-generated schedules significantly reduced the number of nurses with < 1 year of experience in day shifts. From an individual perspective, the number of night-off-evening (NOE) shifts was significantly lower. Additionally, IH-NASS-generated schedules had more consecutive off days (≥ 2), off days (≥ 2) following two or more consecutive night shifts, Saturday-Sunday off days, and Sunday off days, whereas weekday shifts with unsocial hours were fewer. Factors influencing job satisfaction among shift nurses included satisfaction with the IH-NASS, perceived convenience of the IH-NASS, and the number of NOE shifts under unhealthy work scheduling, which together accounted for approximately 27% of the variance in job satisfaction. CONCLUSIONS: This study provides empirical

evidence supporting the use of AI systems in nurse scheduling. Specifically, AI-based scheduling can optimize workforce allocation while maintaining work quality, enhancing nurses' positive perceptions, and improving job satisfaction. TRIAL REGISTRATION: Not applicable. This was not a clinical trial.

Lien vers l'article

The Condition of Subjective Daytime Sleepiness and Its Related Decline in Work Productivity Among Daytime Workers.

Takano Y, Hirasawa T, Inoue Y. *J Epidemiol*. 2025 Jun 5;35(6):262-9.

BACKGROUND: Few have examined the condition of subjective daytime sleepiness in workers and its relation to their work productivity. This study aimed to clarify the association between the presence of subjective daytime sleepiness and work productivity measures, including presenteeism and absenteeism, as well as factors related to the presence of the symptom in daytime workers. METHODS: This cross-sectional study included 17,963 daytime workers who attended the annual medical check-up. They were categorized into four groups; the daytime sleepiness group was defined as having only subjective daytime sleepiness, the insomnia group as having only insomnia symptoms, the combination group as having both subjective daytime sleepiness and insomnia symptoms, and the healthy group as having no sleep complaints. This study used demographics, health status, workplace, work productivity, and sleep items included in the self-reported medical check-up questionnaire. RESULTS: The combination group had significantly worse presenteeism than other groups. The daytime sleepiness and insomnia groups had significantly worse presenteeism than the healthy group. The results of absenteeism were the same as presenteeism. Factors related to the positivity for subjective daytime sleepiness were presence of psychiatric disease, the positivity for habitual snoring and/or witnessed apnea, shorter sleep duration on workdays, long working hours, female sex, living alone, the amount of social jetlag, and younger age. CONCLUSION: Subjective daytime sleepiness, not just insomnia symptoms, has a significant negative impact on work productivity, and both workplace and individual approaches should not be ignored for addressing subjective daytime sleepiness among daytime workers.

Lien vers l'article

A Mixed-methods Systematic Review of Sleep Duration and Quality in Healthcare Workers: Impacts on Patient Safety and Quality of Care.

Fox J, McGrail M, Cha YJ, Cho D, Lu RW, Yi R, et al. *Behav Sleep Med*. 2025 Jun 19:1-17.

OBJECTIVES: The aim of this systematic review was to synthesize evidence on the impacts of sleep duration and quality in healthcare workers on patient safety and quality of care. A secondary aim was to understand the impact of shiftwork and workload characteristics alongside sleep duration and quality. METHODS: A systematic search of Scopus, PubMed, Embase, APA PsycINFO, and CINAHL databases was completed in May 2023 and updated in December 2024. Only studies published in English from 2013 onwards were considered for inclusion in the review. Quality appraisal of included studies was conducted via the McMaster tools for quantitative and qualitative studies, respectively, and results were synthesized and presented as a narrative summary. RESULTS: Database searching revealed 7,422 results, with 30 studies eventually included in the review. Studies consistently showed that short sleep duration in healthcare workers was associated with worse patient safety (increased errors and poorer cognitive functioning). There was also a clear link between shiftwork and long shifts with reduced patient safety. CONCLUSIONS: The majority of included studies revealed that patient safety and quality of care are worse where HCWs experience short duration and/or low-quality sleep or are working long and/or irregular shifts.

Lien vers l'article

The Night Shift Nurse Educator Role in the Inpatient Care Setting: A Narrative Review.

Foster-Carter M. *J Nurses Prof Dev*. 2025 Jul-Aug 01;41(4):235-9.

Historically, night nurses tend to have limited resources available to them during their shifts. In some inpatient healthcare settings, a nurse educator has been hired specifically to support night shift nurses. The purpose of this article is to conduct a narrative review of the existing literature that highlights the implementation of the night shift educator role in the inpatient care setting. The implications of hiring for such a role will also be discussed.

Lien vers l'article

Vulnerability, perception, and experiences of stress in shift workers.

Cha S, Yoo SY, Yeo H, Hwang Y, Lee S, Jeon S, et al. *J Psychiatr Res*. 2025 Jun 14;189:252-8.

OBJECTIVE: This study aimed to explore stress vulnerability, perceived stress, and stressful experiences of shift workers (SWs) and non-shift workers (NSWs) and their association with sleep, mood, and workplace environments. METHODS: An online self-reported survey was conducted which included 4561 SWs and 2093 NSWs. Participants completed the Stress Vulnerability Scale (SVS), Perceived Stress Scale (PSS), Global Assessment of Recent Stress (GARS) scale, short form of the Center for Epidemiologic Studies Depression Scale (CES-D), Pittsburgh Sleep Quality Index (PSQI), and Korean Occupational Stress Scale (KOSS). RESULTS: SWs demonstrated higher SVS, PSS, and GARS scores than NSWs after adjusting for age, gender, income, education, working hours, and occupations. SWs and NSWs showed no significant differences in SVS and PSS after additionally adjusting for PSQI or KOSS. SVS demonstrated no between-group differences when CES-D was additionally adjusted, but a significant difference remained in PSS. Between-group differences in GARS remained significant after additionally adjusting for PSQI, KOSS, or CES-D. The association between PSQI and GARS and between KOSS and PSS was stronger in SWs than in NSWs. CONCLUSIONS: SWs demonstrated greater vulnerability to stress, higher perceived stress levels, and more frequent stressful experiences compared to NSWs. Increased stress vulnerability and perceived stress in SWs were associated with sleep and workplace environments. SWs showed a more prominent association between sleep and stressful experiences and between workplace environments and perceived stress than NSWs.

Lien vers l'article

Santé psychique

Evaluation of the impact of COVID-19 on the occupational burnout among shift workers in Hong Kong.

Wong SW, Kwok AWL. *Hong Kong J Occup Ther*. 2025 Jun 19:15691861251348480.

BACKGROUND/OBJECTIVES: During the COVID-19 pandemic, workforce across the globe had experienced an unprecedent change in work mode under the quarantine and social distancing policies. Shift work workers, who were at higher risk of burnout, upheld their roles and kept the essential operation of society maintained amidst the pandemic time. The objectives of this study are to evaluate the association between impact of COVID-19 and burnout among shift workers in Hong Kong, and to investigate if there is any association between the infection history and burnout among shift workers. METHODS: Five hundred and thirty eight shift workers (297 males and 241 females of age 33+9) were recruited in this cross-sectional study. Self-administered questionnaire addressing respondents' demographic information, shift characteristic, anxiety level, perception towards COVID-19 and the burnout situation of the respondent were distributed. RESULTS: The prevalence of burnout among

shift workers during pandemic was 39.4%. Engagement in more shifts (aOR = 2.608), 9 to 15-night shift/month (aOR = 1.654), history of frequent infection of COVID-19 (aOR = 2.076), high anxiety level (aOR = 8.599) was associated with higher probability of burnout. Increase in anxiety level correlated to increase in exhaustion (β (0) = 0.042) and decrease in personal efficacy. (β (0) = -0.081). CONCLUSION: Impacts by COVID-19 were associated with burnout of shift workers in terms of older age, single status, long shift pattern, night shift, anxiety level as well as infection history. Although World Health Organization has declared the end of COVID-19 pandemic, the post-pandemic burnout situation emerged as an alarming occupational hazard.

Lien vers l'article

Shift Work, Sleep, Chronic Fatigue, and Mental Health Among Hotel Workers.

Rosemberg MS, Tu J, Armijo J. *West J Nurs Res*. 2025 Jun 16:1939459251341832.

BACKGROUND: Shift work, a nonstandard work arrangement, is increasingly popular in the hospitality industry to meet consumer demands and boost productivity. However, its effects on the health and well-being of hotel workers in the United States remains underexplored. OBJECTIVE: We aimed to explore the effects of shift work on mental health, sleep, and chronic fatigue among hotel workers. METHODS: We collaborated with a community advisory board to develop a survey and recruit participants. Individuals aged 18 years or older, working in hotels in a Midwest state, completed surveys online or on paper. Data analysis included descriptive statistics, linear and logistic regression, and stepwise moderation to examine the impact of work schedules on chronic sleep problems, fatigue, and mental health outcomes. RESULTS: Data from 518 participants were analyzed. The majority identified as white and female, with an average age of 32.05 years. Most were employed in housekeeping or front desk positions. Regression analyses showed that those working nonstandard hours were significantly more likely to report chronic fatigue and screen positive for posttraumatic stress disorder. Paid overtime was significantly associated with decreased symptoms of depression and anxiety. Significant interactions by job type were also observed, with front desk workers reporting increased depression with more overtime compared to other job types. CONCLUSION: These findings address a crucial gap in understanding shift work's impact on US hotel workers' health and well-being. Future longitudinal studies should explore shift work's effects on sleep, fatigue, and mental health. Tailored interventions and policies may mitigate the adverse effects of shift work.

Lien vers l'article

Insight inTo Stress and POOping on Work TIME (ITS POO TIME): Protocol for a Web-Based, Cross-Sectional Study.

Tully PJ, Cosh S, Wittert G, Martin S, Vincent A, Mikocka-Walus A, et al. *JMIR Res Protoc*. 2025 Jun 5;14:e58655.

BACKGROUND: Long occupational working hours and shift work are common in high-, middle-, and lower-income economies. Bowel movement frequency and stool form in occupational settings may be important markers of stressful working conditions as well as diurnal gut microbiota action, gastrointestinal discomfort, and disorders of gut-brain interaction (DGBI). Characterizing DGBI in shift and nonshift workers could help identify the impact of diurnal work patterns on workers' physical and mental health, including anxiety related to bowel movements. OBJECTIVE: This study aims to outline the Insight inTo Stress and POOping on work TIME (ITS POO TIME) protocol describing a web-based multimethods research project on DGBI, stool form and frequency, psychological factors, sleep, diet, and anxiety related to bowel movements in occupational settings by comparison to residential settings. METHODS: Study 1 comprises a web-based convenience sampling survey to acquire quantitative data from adults who are engaged in paid employment. We seek to assess occupational characteristics, organizational factors, as well as standardized questionnaires for stool form, DGBI

assessed based on Rome-IV criteria, sleep, diet, bowel movement anxiety (ie, parcopresis), and distress. Study 2 is a qualitative study that asks open-ended questions about respondents' attitudes to defecation at work. Analyses for study 1 will explore rates of DGBI in shift versus nonshift workers and explore how occupational characteristics are associated with occupational bowel movement stool form and frequency. With regards to distress and parcopresis, study 1 will analyze how parcopresis, distress, and contamination fears are associated with stool form and frequency in occupational settings compared with residential settings. Study 1 is designed to have 90% power to detect a 5% difference in DGBI prevalence between groups at α=.05 based on the conservative estimate of 15% DGBI prevalence in shift workers and 10% DGBI prevalence in nonshift workers, with a final sample of 1967 required. Study 2 qualitative data will be analyzed using inductive thematic analysis to identify themes concerning feelings and attitudes about bowel movements in occupational settings. RESULTS: The findings of ITS POO TIME will elicit important information on what factors are associated with bowel movements and stool form and frequency in occupational settings and identify associations pertinent to occupational health. Data collection commenced in January 2019 and finished enrollment in December 2023. Study 1 obtained 1872 responses and fell short of the desired sample size. Study 2 received 337 responses, and the primary results are expected to be published in 2025 and the qualitative results published in 2026. CONCLUSIONS: The results of the research described in this research protocol will have direct implications for industry, employers, and policy makers concerning DGBI, stress, and worker health.

Lien vers l'article

Troubles cognitifs et de la vigilance

A qualitative study of shift-work nurses' sleep adaptation process.

Yang H, Kim S, Kim S, Chung HC. *Occup Med (Lond)*. 2025 Jun 13.

BACKGROUND: Nurses scheduled on a rotating cycle of three-shift allocations experience changes in their sleep patterns due to misaligned sleep-wake cycles and circadian rhythms, and they struggle to adapt to irregular sleep schedules. AIMS: This study aimed to understand the nature and process of sleep adaptation in shift-working nurses in real-life situations and to explore how various conditions impact this process. METHODS: A qualitative, in-depth interview study was conducted with 10 nurses working in a three-shift rotation system at two tertiary hospitals in South Korea. Interviews were recorded, transcribed verbatim, and independently analysed by two researchers using a standardized analysis method. RESULTS: Nurses who cycle between three-shift allocations lead a sleep-centred life due to irregular work schedules. They struggle to establish regularity in their sleep patterns and to regain control of their lives. These nurses continuously strive to adapt their sleep within the framework of a Möbius strip, progressing through stages of awareness, trial and error, and transition. CONCLUSIONS: The substantive theory of 'Trying to take initiative in life by discovering regularity amid irregular sleep' was derived from the sleep adaptation process of shift-working nurses. This theory provides a crucial foundation for developing practical strategies at both individual and institutional levels to promote sleep adaptation among shift-working nurses.

Lien vers l'article

Effects of single- and double-shift work on hand and cognitive functions in nurses.

Ulupinar F, Meler S. *Int Nurs Rev*. 2025 Sep;72(3):e13057.

AIM: This study aims to examine the influence of single and double-shift work schedules on hand function and cognitive capacities, specifically working memory, attention, and response time in nurses. BACKGROUND: Shift work, particularly in extended formats, is known to affect various physical and

cognitive functions critical to nursing duties. Understanding these impacts is vital for managing nurse schedules to minimize health risks and maximize performance. INTRODUCTION: With an increase in demands on healthcare systems, nurses often endure prolonged working hours, which may impair their cognitive and manual abilities, thereby affecting patient care quality. METHODS: This study involved 45 nurses aged 20-40 years from shift-oriented units providing direct patient care. Hand function was assessed using the Nine-Hole Peg Test (9-HPT). Cognitive functions such as working memory, attention, and response time were evaluated using the digit span task and the Stroop test, respectively. Two-way analysis of variance (ANOVA) was used for statistical analysis, assessing the interactions of time and shift type, with a significance level set at $p < 0.05$. RESULTS OR FINDINGS: The results revealed significant changes in all tested variables between pre- and post-shift assessments and between single and double-shift conditions. Notably, the double-shift work significantly exacerbated declines in all measured functions. DISCUSSION: These findings suggest that double shifts may intensify the deterioration of essential nursing skills, potentially compromising patient care. CONCLUSION AND IMPLICATIONS FOR NURSING AND/OR HEALTH POLICY: This study underscores the detrimental effects of extended shift work on nurses' cognitive and manual functions. These insights should guide healthcare institutions in revising nurse scheduling practices to safeguard their well-being and maintain high standards of patient care.

Lien vers l'article

The Effects of Digital-Based Cognitive Behavioral Therapy for Insomnia (CBT-I) on Sleep Quality in Shift Workers: A Scoping Review.

Yuska T, DeVries A, Kanelos M, Delphus D, Toperzer K, O'Malley K, et al. *Cureus*. 2025 May;17(5):e85086.

Insomnia, characterized by difficulty falling asleep or staying asleep, is prevalent among shift workers due to irregular work hours. Cognitive behavioral therapy for insomnia (CBT-I) is the first-line treatment for alleviating insomnia symptoms; however, accessibility of CBT-I for shift workers is limited. To increase the user access and usefulness of CBT-I, digital CBT-I (dCBT-I) has attracted growing clinical and research interest in the field. This scoping review examines the effects of dCBT-I on improving sleep quality among shift workers. A comprehensive literature search across multiple databases identified 11 primary studies from 2014 to 2024, encompassing various shift-working populations. The findings were synthesized into themes, including the impacts of dCBT-I on sleep quality, sleep hygiene, objective sleep data, anxiety, depression, quality of life, and user feedback. All studies showed improved sleep quality after the implementation of dCBT-I, except for one. Two studies suggest that dCBT-I is equally effective as in-person delivery of CBT-I in improving sleep quality among shift workers. Per user feedback, incorporating individualized feedback and more customization options in dCBT-I would improve engagement and adherence to the intervention. Collectively, the findings in this review suggest that dCBT-I is an accessible and effective alternative to traditionally delivered CBT-I for improving sleep quality in shift workers.

Lien vers l'article

Association between common mental disorders and sleep parameters measured by self-report and actigraphy in Brazilian female shift workers.

Theodoro H, da Silva JC, Mendes KG, Cibeira GH, Schenkel JC, Garcez A, et al. *Sleep Biol Rhythms*. 2025 Jul;23(3):343-52.

This study investigated the association between common mental disorders (CMD) and sleep parameters measured objectively through actigraphy, as well as using self-reported data, among female shift workers in southern Brazil. This cross-sectional study involved 450 female participants, with 278 undergoing actigraphy. CMD was assessed using a Self-Reporting Questionnaire (SRQ-20),

while self-reported sleep disturbance was measured using the Pittsburgh Sleep Quality Index (PSQI) scale. Actigraphy was utilized to measure sleep quality over a consecutive 48-h period. The odds ratios (OR) and 95% confidence intervals (CI) were estimated using multinomial logistic regression. The prevalence of sleep disturbance was 9.7% (95% CI 7.2-12.9) according to the PSQI, while CMD prevalence was 47.3% (95% CI 42.6-52.1) in the entire sample. Sleep disturbance was significantly associated with positive CMD screening (OR = 20.03; 95% CI 7.22-55.54) as well as with night shift work (OR = 5.38; 95% CI 1.75-16.52). CMD did not exhibit a statistically significant association with objective sleep quality parameters measured using actigraphy. However, adjusted analysis of sleep efficiency revealed that women on the afternoon (OR = 3.09; 95% CI 1.53-6.25) or night shifts (OR = 3.43; 95% CI 1.60-7.35) had a higher prevalence of 10 or more awakenings during sleep compared to those working morning shifts. This study highlights the high prevalence of CMD among female shift workers. Furthermore, CMD demonstrated a statistically significant association with self-reported sleep disorders within this population group. However, this association was not observed when compared with objective data collected by actigraphy.

Lien vers l'article

The Condition of Subjective Daytime Sleepiness and Its Related Decline in Work Productivity Among Daytime Workers.

Takano Y, Hirasawa T, Inoue Y. *J Epidemiol*. 2025 Jun 5;35(6):262-9.

BACKGROUND: Few have examined the condition of subjective daytime sleepiness in workers and its relation to their work productivity. This study aimed to clarify the association between the presence of subjective daytime sleepiness and work productivity measures, including presenteeism and absenteeism, as well as factors related to the presence of the symptom in daytime workers. METHODS: This cross-sectional study included 17,963 daytime workers who attended the annual medical check-up. They were categorized into four groups; the daytime sleepiness group was defined as having only subjective daytime sleepiness, the insomnia group as having only insomnia symptoms, the combination group as having both subjective daytime sleepiness and insomnia symptoms, and the healthy group as having no sleep complaints. This study used demographics, health status, workplace, work productivity, and sleep items included in the self-reported medical check-up questionnaire. RESULTS: The combination group had significantly worse presenteeism than other groups. The daytime sleepiness and insomnia groups had significantly worse presenteeism than the healthy group. The results of absenteeism were the same as presenteeism. Factors related to the positivity for subjective daytime sleepiness were presence of psychiatric disease, the positivity for habitual snoring and/or witnessed apnea, shorter sleep duration on workdays, long working hours, female sex, living alone, the amount of social jetlag, and younger age. CONCLUSION: Subjective daytime sleepiness, not just insomnia symptoms, has a significant negative impact on work productivity, and both workplace and individual approaches should not be ignored for addressing subjective daytime sleepiness among daytime workers.

Lien vers l'article

A Digital, Real-Time, History-Based Sleep-Management Tool to Enhance Alertness.

Song YM, Choi SJ, Lim D, Wijaya RH, Jang HJ, Park HR, et al. *Sleep*. 2025 Jun 9.

In today's 24-hour society, chronic sleep disruption and circadian misalignment have led to a 'global sleep crisis', increasing the risk of cognitive impairment, workplace accidents, and long-term health consequences. Yet, most sleep management strategies rely on one-size-fits-all recommendations that overlook individual variability, resulting in suboptimal and/or impractical solutions. To address this, we previously developed a real-time, personalized sleep scheduling framework based on tracking of dynamic sleep pressure and circadian rhythms using a mathematical model. We recently implemented

this framework in SleepWake, a mobile app designed for real-world application. In a retrospective analysis of a 71-participant clinical study and a prospective trial with 19 shift workers, greater adherence to SleepWake's personalized recommendations led to significant improvements in alertness. These benefits stemmed from two key innovations that go beyond static sleep guidelines: real-time prescribed supplemental sleep to counteract prior deficits, and personalized sleep phase alignment tailored to individual circadian patterns. This study provides the first direct evidence that continuously updated, individualized sleep schedules can optimize alertness and sleep health in real-world settings. By delivering sleep recommendations rooted in sleep physiology and evidence-based modeling, SleepWake has the potential to improve health, enhance safety, and elevate overall quality of life in today's around-the-clock society.

Lien vers l'article

Effective Interventions for Reducing the Negative Effects of Night Shifts on Doctors' and Nurses' Health and Well-Being: A Systematic Review.

Shakhloul M, Amer A, Zekry M, Elgewely M, Saleeb A, Ghobrial S, et al. *Cureus*. 2025 May;17(5):e83385.

Working night shifts is a reality for many doctors and nurses, but it often comes at a cost to their sleep, alertness, and overall well-being. This systematic review looked at a wide range of strategies tested to ease these effects and support those working through the night. Across 74 studies, we explored interventions including bright light exposure, melatonin, dietary changes, scheduled naps, medications like modafinil and caffeine, and complementary approaches such as aromatherapy, exercise, and acupuncture. Bright and blue-enriched light, melatonin, modafinil, and napping stood out as consistently helpful in boosting alertness and sleep quality. Other interventions showed promise in certain settings, but were less consistent overall. These findings suggest that no single solution fits everyone, and that a personalized, flexible approach combining different strategies may work best. There's a clear need for more long-term, real-world studies to help healthcare professionals stay well while caring for others overnight.

Lien vers l'article

Validation of the Norwegian version of the Munich ChronoType Questionnaire for shift workers (MCTQ(Shift)).

Moen LV, Rysstad TL, Lie JS, Haugen F, Matre D. *Chronobiol Int*. 2025 Jun 30:1-12.

Chronotype may play a role in the association between shift work and health risks. An important and widely used questionnaire for measuring chronotype is the Munich Chronotype Questionnaire for Shift workers (MCTQ(Shift)); however, it has neither been validated nor is it available in Norwegian or any other Scandinavian language. Therefore, we translated the MCTQ(Shift) into Norwegian and assessed its validity against subjective and objective sleep measures. We adhered to established methodological guidelines to translate the questionnaire. The final Norwegian version was administered to 60 workers (85% responders) on a three-shift schedule (21.7% women, median age 28 y) at an industrial plant. Sleep duration and mid-sleep from the MCTQ(Shift) were compared with sleep diary and a multisensory sleep tracker (the Oura ring). Construct and criterion validity were evaluated. Sleep duration measured by the MCTQ(Shift) was highly correlated ($r > 0.6$) with sleep duration calculated from both the Oura ring and sleep diaries after morning shifts. On free days, the MCTQ(Shift) correlated moderately with the sleep diary but weakly with the Oura ring. Mid-sleep correlations from MCTQ(Shift) compared to the Oura ring data were high ($r > 0.7$) for sleep periods after morning and night shifts, and moderate ($r = 0.5$) sleep periods between free days following morning shift. Bland-Altman analyses indicated that the MCTQ(Shift) overestimated sleep duration and underestimated mid-sleep, with the largest discrepancies on free days after morning shifts. Night shifts showed the most pronounced outliers. The Norwegian MCTQ(Shift) shows promising validity for assessing sleep

habits in shift workers, particularly on workdays. However, reduced accuracy on free days after morning shifts suggests limitations in capturing sleep patterns across all shift types.

Lien vers l'article

Factors Associated With Insomnia in Shift-Working Airline Mechanics.

Park DI, Kim JH. *Workplace Health Saf*. 2025 Jun 26:21650799251348476.

BACKGROUND: Shift workers commonly experience insomnia that is associated with various factors such as sex, employment period, dietary behavior, and quality of life (QoL). This study aimed to examine the prevalence of insomnia among shift-working airline mechanics and identify the factors that influence insomnia. METHODS: This cross-sectional, descriptive study aimed to investigate sleep problems, dietary habits, and QoL among 180 airline mechanics and explore the factors that influence sleep problems. FINDINGS: Of the 180 participants, 83 and 97 were included in the insomnia and non-insomnia groups, respectively. The dietary behavior score was lower in the insomnia group (28.56 ± 6.27) than that in the non-insomnia group (31.73 ± 6.11). The insomnia group had lower QoL scores than those in the non-insomnia group. In the logistic regression analysis, factors related to insomnia were 6 to 9 years of shift work experience (OR = 4.108, p = .042) and physical domain and general health of QoL (OR = 0.506, p < .001; OR = 0.763, p = .027). CONCLUSION/APPLICATION TO PRACTICE: Shift-working airline mechanics with insomnia exhibited lower dietary behavior scores and lower QoL scores than those without insomnia. Considering that insomnia symptoms in maintenance workers can affect aviation safety, effective management is essential. In particular, the risk of insomnia was higher in those with 6 to 9 years of shift work experience. Therefore, airlines should develop protocols aimed at improving dietary behavior and QoL to manage insomnia symptoms. Additionally, closely monitoring insomnia symptoms is crucial for workers with 6 to 9 years of shift work experience.

Lien vers l'article

Shift Work, Sleep, Chronic Fatigue, and Mental Health Among Hotel Workers.

Rosemberg MS, Tu J, Armijo J. *West J Nurs Res*. 2025 Jun 16:1939459251341832.

BACKGROUND: Shift work, a nonstandard work arrangement, is increasingly popular in the hospitality industry to meet consumer demands and boost productivity. However, its effects on the health and well-being of hotel workers in the United States remains underexplored. OBJECTIVE: We aimed to explore the effects of shift work on mental health, sleep, and chronic fatigue among hotel workers. METHODS: We collaborated with a community advisory board to develop a survey and recruit participants. Individuals aged 18 years or older, working in hotels in a Midwest state, completed surveys online or on paper. Data analysis included descriptive statistics, linear and logistic regression, and stepwise moderation to examine the impact of work schedules on chronic sleep problems, fatigue, and mental health outcomes. RESULTS: Data from 518 participants were analyzed. The majority identified as white and female, with an average age of 32.05 years. Most were employed in housekeeping or front desk positions. Regression analyses showed that those working nonstandard hours were significantly more likely to report chronic fatigue and screen positive for posttraumatic stress disorder. Paid overtime was significantly associated with decreased symptoms of depression and anxiety. Significant interactions by job type were also observed, with front desk workers reporting increased depression with more overtime compared to other job types. CONCLUSION: These findings address a crucial gap in understanding shift work's impact on US hotel workers' health and well-being. Future longitudinal studies should explore shift work's effects on sleep, fatigue, and mental health. Tailored interventions and policies may mitigate the adverse effects of shift work.

Lien vers l'article

Restorative Effect of Nighttime Naps on Brain Functional Organisation and Memory in Night Shift Nurses.

Lin JH, Zeng JY, Huang HW, Lin YJ, Chen HJ. *J Sleep Res*. 2025 Jun 22:e70121.

Shift work-related sleep deprivation (SD) among nurses is associated with cognitive decline, which may be partially mitigated by nighttime nap (NNAP). This study aimed to investigate the restorative effects of NNAP on brain functional organisation and memory in nurses with night shift-related SD. Resting-state functional magnetic resonance imaging data were collected from 24 nurses at three time points: during rested wakefulness (RW), after 24 h of SD and following a period of SD when a NNAP was taken. Memory function assessments were conducted using the Complex Figure Test (CFT) and the California Verbal Learning Test (CVLT) following SD and NNAP sessions. Functional connectivity density (FCD), which quantifies the sum of functional connections for a given voxel within the entire brain network, was calculated. Voxel-wise post hoc paired t tests, following one-way repeated-measures analysis of variance, were employed to evaluate FCD differences. Improved performance in the CFT and CVLT-II tests was observed following NNAP, compared with SD. Compared with RW, a disturbed FCD within the whole-brain network was noted in SD, particularly involving cognition-related regions, somatosensory and motor areas, the visual cortex, the auditory cortex and the thalamus. Following NNAP, FCD restoration was identified in cognition-related regions, somatosensory and motor areas and the thalamus. Improved memory performance correlated with the FCD changes noted between SD and NNAP sessions. Our findings propose that NNAP may facilitate restoration of brain functional organisation and memory disrupted by SD in nurses working night shifts.

Lien vers l'article

The Effectiveness of Low-Level LED Light Therapy for Sleep Problems, Psychological Symptoms, and Heart Rate Variability in Shift-Work Nurses: A Randomized Controlled Trial.

Liao YH, Tai CJ, Ming JL, Lin LH, Chien LY. *J Nurs Manag*. 2025;2025:6478834.

Background: Shift-work schedules can cause sleep and psychological problems among nurses, negatively affecting their health and quality of life. This trial examined the effects of low-energy light therapy on sleep, psychological symptoms, and heart rate variability among shift-work nurses. Methods: This randomized controlled trial was conducted from July 2021 to June 2022. The inclusion criteria were nurses with self-reported insomnia who worked in shifts in the last 6 months in a medical center in northern Taiwan. Block randomization was used to assign the study participants to two groups: experimental (n = 32) and control (n = 32). A portable Meridian Aura Cap equipped with a low-level light-emitting diode was used to provide red and near-infrared light (660 and 850 nm) for 30 min, three times a week for 4 weeks; the control group did not receive any intervention. The Depression Anxiety Stress Scale-21 and Insomnia Severity Index were used to measure psychological symptoms and sleep problems, respectively. Heart rate variability was measured by the ANSWatch. Results: No significant differences were reported in preintervention scores. After the 4-week intervention, the intervention group scored significantly lower in insomnia (4.3 vs. 12.6, respectively; $p < 0.001$), depression (2.5 vs. 7.9, $p < 0.001$), anxiety (3.1 vs. 9.2, $p < 0.001$), and stress (5.6 vs. 12, $p < 0.001$) than those in the controls. No significant differences were observed in heart rate variability between the two groups. Conclusion: Low-level light-emitting diode light therapy improved sleep quality in shift-work nurses with insomnia and alleviated depression, anxiety, and stress symptoms; however, it did not improve heart rate variability, possibly because of the short intervention duration and the ongoing shift-work schedule. Implications for Nursing Management: Employers could consider providing phototherapy for shift nurses to improve their health. Trial Registration: ClinicalTrials.gov identifier: NCT05146596.

Lien vers l'article

Risk warning model for predicting sleep disorders in healthcare workers on long-term shifts.

Li X, Xiao L, Shi B, Liu N, Dong L, Lyu R, et al. *Sleep Biol Rhythms*. 2025 Jul;23(3):331-42.

Long-term shift work significantly impacts the health of healthcare workers, with sleep disorders (SD) being a common and urgent concern. Traditional predictive models often perform poorly in identifying minority class samples-specifically healthcare workers experiencing SD-due to dataset imbalances. This study aimed to construct a risk warning model by introducing the synthetic minority over-sampling technique (SMOTE) to improve the predictive accuracy for SD among healthcare workers engaged in long-term shift work, providing a scientific basis for early intervention. A retrospective analysis was conducted on the sleep conditions of 181 healthcare workers at CR&WISCO General Hospital, Wuhan University of Science and Technology. Participants were divided into two groups based on their sleep status: 70 individuals in group A (AG) with SD, and 111 individuals in group B (BG) without SD. The application of the SMOTE-based risk warning model was analyzed for predicting SD in healthcare workers under long-term shift work, and the model's performance was validated against two other models and three verification datasets. Multivariate logistic regression analysis of SD among healthcare workers under long-term shift work revealed that gender, age, occupation, education level, professional title, authorization strength, shift duration, work hours, anxiety, and depression were identified as independent influencing factors. The SMOTE warning model achieved a sensitivity of 83.22%, specificity of 78.67%, accuracy of 85.35%, positive predictive value (PPV) of 74.60%, and negative predictive value (NPV) of 87.67%, significantly outperforming the original dataset, backpropagation (BP) model, and the random forest (RF) model ($P < 0.05$). ROC curve analysis showed an AUC value of 0.85 for the SMOTE-processed data, indicating superior predictive performance of the SMOTE-based warning model. The SMOTE-based risk warning model effectively enhances the prediction of SD in healthcare workers engaged in long-term shift work, demonstrating significant clinical applicability. This finding not only contributes to improving the health management of healthcare workers but also provides a reference model for similar issues in other fields. SUPPLEMENTARY INFORMATION: The online version contains supplementary material available at 10.1007/s41105-025-00583-y.

Lien vers l'article

A prospective cohort study on the relationship between changing occupational roles, shift work and sleep disorders.

Jin Y, Sang L, Zhou Z, Wang Y, Wang J, Song L, et al. *Work*. 2025 Jul;81(3):2928-36.

BACKGROUND: Occupational roles are considered as a risk factor for sleep disorders. However, little research has examined the effects of shift work interacting with changing occupational roles on sleep disorders. OBJECTIVE: To determine the relationship between changing occupational roles, shift work and sleep disorders. METHODS: The cohort study began in January 2013 and ended in January 2020. The survey used the stratified cluster sampling method, a total of 719 people were included in the analysis. The occupational roles were measured with the Occupational Role Questionnaire. Simultaneously the Pittsburgh Sleep Quality Index was used to investigate the occurrence of sleep disorders. RESULTS: The number of people with sleep disorders was 227, with an incidence of 31.57%. The Role Overload (RR: 1.449, 95% CI: 1.028-2.042), Role Boundary (RR: 1.914, 95% CI: 1.369-2.676), Responsibility (RR: 1.391, 95% CI: 1.002-1.925), and Physical Environment (RR: 2.140, 95% CI: 1.550-5.956) may increase the risk of sleep disorders. The risk of sleep disorders in the elevated (baseline-follow up) occupational roles group was higher than that of the unchanged group (RR: 2.293, 95% CI: 1.620-3.245). Shift work situation (RR: 2.784, 95% CI: 1.987-3.901) may increase the risk of sleep disorders, and the interaction between changing occupational roles and shift work also increased the risk of sleep disorders (RR: 6.455, 95% CI: 3.283-12.691). CONCLUSIONS: The elevating occupational roles and shift work increase the risk of sleep disorders and have a synergistic effect, highlighting the

importance of preventive measures against changing occupational roles and reasonably adjusting shift work patterns to reduce sleep disorders.

Lien vers l'article

Association between sleep-related worry and trait mindfulness among shift nurses: a cross-sectional study.

Hu Y, Sun X, Yuan Y, Wang H. *BMC Nurs*. 2025 Jul 1;24(1):810.

BACKGROUND: Shift work leads to an imbalance in nurses' circadian rhythms, which affects not only nurses' physical and mental health but also the quality of care and patient safety. Although sleep disturbance among shift nurses has been a research concern, insufficient attention has been paid to the psychological dimension of sleep-related worry. Of particular interest are protective psychological factors such as trait mindfulness, a stable endogenous psychological resource that mitigates stress responses by reducing ruminative thinking and emotional hyperreactivity. However, the association between trait mindfulness and sleep-related worry among shift nurses remains unexplored. This study aimed to investigate the level of sleep-related worry, explore the factors influencing it, and identify the relationship between sleep-related worry and trait mindfulness among shift nurses in Shanxi Province, northern China. METHODS: A quantitative cross-sectional study was conducted using the Anxiety and Preoccupation about Sleep Questionnaire and Mindful Attention Awareness Scale. The data were obtained from 320 shift nurses in three tertiary general hospitals in Shanxi Province. Descriptive statistics, Spearman correlation analysis, and multiple linear regression analyses were performed for data analysis. RESULTS: The median total score for shift nurses' sleep-related worry was 40.00 (IQR 37.00-44.00), indicating that their sleep-related worries were above the middle. The median total trait mindfulness score for shift nurses was 35.00 (IQR 28.00-45.00). Our findings revealed a significant negative correlation between sleep-related worry and trait mindfulness, suggesting that individuals with lower levels of trait mindfulness (score range 15-74) tend to experience higher levels of sleep-related worry (score range 10-50). Multiple linear regression analyses indicated that shift nurses' sleep-related worry was significantly associated with age (β= -0.086, 95% CI: -1.887, -0.019), average daily sleep duration (β= -0.199, 95% CI: -3.764, -1.546), monthly frequency of night shifts (β = 0.235, 95% CI: 2.169, 4.607) and trait mindfulness (β= -0.580, 95% CI: -0.361, -0.271). CONCLUSIONS: Sleep-related worry among shift nurses is a serious concern in Shanxi Province. Trait mindfulness was a significant factor associated with sleep-related worry among shift nurses. Therefore, clinical nursing managers should focus on sleep-related worry among shift nurses, adopt reasonable measures to improve their sleep problems, enhance their trait mindfulness levels, and ultimately reduce their sleep-related worry, thus improving their sleep quality and overall well-being.

Lien vers l'article

Multi-Wearable Approach for Monitoring Diurnal Light Exposure and Body Rhythms in Nightshift Workers.

Hartmeyer SL, Phillips NE, Jassil FC, Joris C, Dibner C, Collet TH, et al. *Acta Physiol (Oxf)*. 2025 Jul;241(7):e70069.

AIM: As our understanding of light's impact on human health grows, studies examining light exposure and related health outcomes in everyday settings are increasingly important, particularly in high-risk groups like nightshift workers. METHODS: In this observational study, we monitored personal light exposure and physiological functions in a large cohort of healthcare nightshift workers using a spectrally resolved light dosimeter and wearable body temperature, actigraphy, and electrocardiography sensors. RESULTS: Our findings revealed a common occurrence of unfavorable light conditions during both shift types. During nightshift work, participants frequently experienced exposure to biologically potent cool-white LED lighting. On dayshifts, melanopic light levels often failed

to meet recommended guidelines, with daylight as the primary source of bright light levels. Sleep duration, but not quality, significantly varied between shifts, with longer sleep before the first nightshift but shorter sleep on subsequent nights. Daytime and nighttime napping helped compensate for reduced sleep on nightshifts. Limited associations between light exposure and sleep were found, partially contradicting existing knowledge. Diurnal physiological and activity rhythms followed the change from day-active to night-active schedules; however, the change in physiological rhythms appeared partly dissociated from that of activity, suggesting a circadian modulation. Moreover, physiological functions exhibited bi-directional phase-shifts across consecutive nightshifts, which may have been mediated by differences in daytime light exposure before the first nightshift. CONCLUSION: By employing a multi-wearable approach including recent sensors, we provide new insights into the lighting environments experienced by nightshift workers and the potential impact of nightshift work and light exposure on endogenous circadian rhythms.

Lien vers l'article

The Sleep Regularity Index: A New Way to Evaluate Shiftwork Schedules.

Guzzetti JR, Matsangas P, Banks S, Shattuck NL. *J Sleep Res*. 2025 Jul 1:e70133.

Sailors adhere to a variety of demanding shiftwork schedules (known as 'watchbills') which pose a challenge for sleep and wellbeing at sea. Previous research aimed at identifying viable watchbills based on how they protect sailors' sleep has largely relied on sleep duration. Findings have highlighted inclssufficient sleep during watchstanding but have mixed results when comparing across watchbills. Sleep regularity is another important dimension of sleep that has been rarely assessed during watchstanding. This study aimed to investigate sleep regularity assessment as a tool for evaluating watchbills, using a recently introduced metric-the Sleep Regularity Index (SRI). Two hundred eighteen sailors from different watchbills were assessed for approximately 1 week of an underway period. The median SRI score was significantly lower for the 5-h on/15-h off watchbill compared to all other watchbills, despite no statistically significant differences in daily sleep duration. The median SRI score was similar between fixed watchbills. The large measurable differences in SRI scores between watchbills, particularly when sleep duration was similar, demonstrated the value of sleep regularity assessment as a tool for evaluating watchbills.

Lien vers l'article

The impact of breaking up prolonged sitting with physical activity during simulated dayshifts and nightshifts on sleep architecture: a randomised controlled trial.

Gupta CC, Vitanege I, Ferguson SA, Vandelanotte C, Duncan MJ, Easton DF, et al. *Sci Rep*. 2025 Jul 1;15(1):20883.

Inadequate sleep is common and contributes to poor health outcomes. Physical activity has a positive impact on sleep outcomes, however the prevalence of physical inactivity is increasing, coupled with the rise of sedentary behaviour at work. Interventions that promote physical activity and reduce sedentary behaviour are essential, as they can improve sleep. The current study investigated the effects of breaking up prolonged sitting with physical activity during the day or night, compared to not breaking up sitting, on sleep architecture during a 9 h or 5 h sleep opportunity. Participants (n = 125, 51% male, 23.4 ± 4.8 years of age) completed an in-laboratory sleep study, with five simulated shifts during the day or night. Sleep opportunities were either 9 h or 5 h following each shift. Participants were allocated to one of six conditions: Sit9D or Break9D (sedentary or breaking up sitting day and 9 h sleep opportunity), Sit5D or Break5D (sedentary or breaking up sitting day and 5 h sleep opportunity), or Sit9N or Break9N (sedentary or breaking up sitting night and 9 h sleep opportunity). Sleep was monitored using polysomnography. In the analysis of day shifts, mixed model ANOVAs demonstrated a significant physical activity *sleep opportunity interaction for total sleep time ($p < 0.001$), sleep onset

latency ($p < 0.001$), time spent in N2 ($p < 0.001$) and N3 ($p = 0.03$). Post-hoc analyses revealed that participants in the 9 h sleep opportunity conditions had longer total sleep time, shorter sleep onset latency, and more slow-wave sleep (N3) during sleep opportunities 1-4 but not sleep opportunity 5. There were no significant differences in sleep architecture between physical activity condition for the nightshift conditions. Better sleep quality was seen in the 9 h condition compared to the 5 h condition, and breaking up sitting did not affect sleep. Given the benefits of breaking up sitting on health, our findings suggest a breaking up sitting intervention can be promoted without detrimental impacts on sleep.

Lien vers l'article

The relationship between circadian type and physical activity as predictors of cognitive performance during simulated nightshifts: A randomised controlled trial.

Easton D, Gupta C, Vincent G, Vandelanotte C, Duncan M, Tucker P, et al. *Chronobiol Int*. 2025 Jun;42(6):736-54.

Nightshift is associated with impaired cognitive performance on many tasks, yet performance is also moderated by individual differences. We investigated the effect of circadian type (two factors: flexible-rigid, and languid-vigour), and the efficacy of a novel countermeasure, breaking up sitting with light-intensity physical activity, in the context of nightshift performance. Thirty-three healthy adults (age M ± SD: 24.3 ± 4.6 y; 19 females) participated in a sleep laboratory study over five consecutive simulated nightshifts (2200-0600 h). Sleep opportunities occurred at 0800-1700 h. Participants were randomised to a sedentary (SIT; n = 14), or "breaking-up" sitting (BREAK; n = 19) condition. BREAK participants completed 3 min of light-intensity walking every 30 min at 3.2 km/h, while SIT participants remained seated. Every 2 h during nightshift, participants completed the Psychomotor Vigilance Task (mean RRT), Stroop Task, and Digit Symbol Substitution Task. Participants completed the revised Circadian Type Inventory which categorises individuals on a rigid-flexible scale and a languid-vigorous scale (rigid; n = 12, flexible; n = 11; languid; n = 11, vigorous n = 13). Linear mixed models showed a significant 3-way interaction between Nightshifts (1-5), Condition (SIT, BREAK), and flexibility-rigidity for mean RRT ($p = 0.03$) only. Flexible types in the BREAK condition had better performance than rigid BREAK, rigid SIT, and flexible SIT over five nights, with performance marginally worse on the first night for all participants apart from rigid SIT. Linear mixed models showed a significant 2-way interaction between Nightshifts (1-5), and flexibility-rigidity for percentage accuracy on the Stroop task, and a significant 2-way interaction between Nightshifts (1-5), and languid-vigour for response time on the Stroop task. Accuracy worsened for rigid types, while response time on the Stroop task improved for languid types over five nights. No other significant differences were found. Breaking up sitting with light-intensity physical activity maintained sustained attention for flexible circadian types across all five experimental nightshifts. Both rigidity and languidity moderated trends in performance, though whether these differences have meaningful real-world implications must be explored further. Our results indicate that circadian type classifications should be accounted for in breaking up sitting interventions overnight.

Lien vers l'article

Barriers to Implementing Evidence-Based Guidance for Fatigue Risk Mitigation in the Prehospital Setting.

Daniel Patterson P, Brailsford J, Fishe J, Roach DGL, Sheffield MA, Lukacz RA, et al. *Prehosp Emerg Care*. 2025 Jul 15:1-12.

OBJECTIVES: The primary aim of this research study was to capture knowledge and awareness, beliefs and behaviors related to, and perceived barriers to adopting, implementing, and maintaining evidence-based guidance as outlined in the 2018 emergency medical services (EMS) evidence-based guidelines (EBG) for fatigue risk management (FRM) and the American Academy of Sleep Medicine/Sleep

Research Society's (AASM/SRS) Guiding Principles for determining shift duration. METHODS: We used a mixed methods study design with in-depth interviews based on the Theoretical Domains Framework (TDF) for behavior change. Sampling was nationwide and stratified by rural/urban status with goal enrollment of 40 EMS agency administrators (employers) and 100 frontline EMS clinicians (employees). We used deductive coding to assign participant statements to established domains and constructs of the TDF. RESULTS: Thirty-six employer and 100 employee in-depth interviews were completed. Most employers represented a fire-based or third-service agency (64%), employed all-paid personnel (58%), and provided mostly ground-based services (92%). Most employees were paramedic, firefighter-paramedic, or firefighter emergency medical technician (EMT) certified (85%) with 3.8 median years of experience (IQR 2, 7). Most employers (61%) and employees (85%) reported no awareness of the existence of EBGs focused on fatigue. Once informed of the guidance, most employers (78%) and most employees (65%) responded that they "very much want to" or "somewhat want to" adopt some or all the guidance and recommendations. Most employers (67%) and employees (61%) reported they "very much needed to" or "somewhat needed to" adopt and implement the existing guidance. Participants identified common barriers to adoption as: lack of awareness and knowledge, a perceived misalignment of some recommendations with expectations, fear of negative emotional reactions in response to changing shift schedules, costs associated with adoption, and fear of disrupting the status quo. CONCLUSIONS: While most EMS employers and employees reported the need to adopt EBGs for fatigue mitigation, barriers identified in this study impede adoption and implementation. Overcoming these impediments should include increasing awareness of fatigue EBGs and related guidance, however, increasing awareness alone may not result in a meaningful increase in adoption and implementation. Novel strategies targeting barriers identified in this study are needed.

Lien vers l'article

Shift workers' experiences and views of sleep disturbance, fatigue and healthy behaviors: a systematic review and qualitative evidence synthesis.

Benton JS, Lee CL, Long HA, Sugavanam T, Holmes L, Keane A, et al. *Scand J Work Environ Health*. 2025 Jul 1;51(4):282-97.

OBJECTIVE: Shift work is common across most societies but poses significant risks to the health of shift workers. In part, this risk is due to the disruption of healthy sleep-wake schedules. This systematic review identified qualitative research on shift workers' experiences of sleep disturbance, fatigue and healthy behaviors. METHODS: We conducted a systematic search of four databases (CINAHL, EMBASE, MEDLINE, PsycINFO) and identified 28 eligible studies involving 1519 participants. We appraised the studies using an adapted Critical Appraisal Skills Programme (CASP) checklist, and confidence in the review findings was formally assessed using the Grading of Recommendations Assessment, Development and Evaluation-Confidence in the Evidence from Reviews of Qualitative research (GRADE-CERQual) approach. Data were thematically synthesized. RESULTS: Three analytical themes were generated. 'Inevitability of fatigue and tiredness' outlines how shift workers experience a culture where they feel "peer pressure to soldier through" their shifts regardless of fatigue. 'Balancing sleep needs with competing responsibilities' highlights how shift workers struggle to balance the need for daytime sleep with family, leisure, and work responsibilities, often prioritizing family needs over their own sleep. 'Obstacles to engaging in healthy behaviors' describes how shift workers often know which actions would benefit their health and reduce fatigue but find it challenging to translate this knowledge into behavior due to fatiguing and stressful work environments. For the purposes of the GRADE-CERQual assessment, short summary statements were developed to describe 22 review findings: there was moderate or high confidence in all but one of these findings. CONCLUSION: This review suggests that sleep education alone is unlikely to be effective. Interventions should focus on helping shift workers self-regulate their behaviors, thoughts, and emotions to better manage sleep and fatigue.

Lien vers l'article

On-call work and sleep quality amongst Radiographers registered in Ireland.

Callanan R, England A, Young R, Rainey C, Curran G, Moore N, et al. *J Med Imaging Radiat Sci*. 2025 Jun 20;56(5):101999.

BACKGROUND: Most radiographers in Ireland take part in an 'on-call' system, which includes working at night and out-of-hours to meet service demands. Night working and undertaking overtime are associated with lower sleep quality and reduced wellbeing among healthcare workers. However, a gap exists in the literature regarding the effects on radiographers. This study aimed to establish whether there is an association between the number of on-call shifts worked and participants' overall perception of sleep quality. METHODS: A validated questionnaire was adapted and shared via social media platforms. Section one included demographic information, including the number of years clinically practising and the number of on-call shifts worked per month. Section two contained questions regarding participants' perception of their sleep quality, and section three sought responses on quality-of-life measures. Correlations in the data were analysed using the Chi-Square test for independence. RESULTS: A total of 95 participants completed the study; 27(29 %) radiographers reported experiencing insufficient sleep over the last month, greater than reports of insufficient sleep of the general population (14.2 %). The Chi-Square test revealed a statistically significant correlation between the number of on-call shifts and the perception of sleep quality ($X(2), 12, n = 95, p = 0.04$). CONCLUSION: A negative association exists between the amount of on-call work and perceived sleep quality. Radiographers working one or more on-call shifts per week report insufficient sleep more often. On-call patterns should be a consideration for managers and policymakers when setting out staffing rosters and introducing guidelines indicating the maximum number of on-call shifts a radiographer may undertake per month. This work may provide a springboard for policymakers, managers and professional bodies to consider the optimal working pattern and compensatory rest considerations for radiographers to ensure adequate workforce provision, recruitment to the profession and retention of existing staff and avoid undesirable economic implications.

Lien vers l'article

Effect of shift work on cerebral cortical activation and functional connectivity in nurses-implications for policy maker: a fNIRS observational study.

An R, Li C, Ai S, Wu Y, Wang S, Luo X, et al. *BMC Nurs*. 2025 Jul 1;24(1):696.

BACKGROUND: Working in shifts can disrupt circadian rhythm and reduce sleep duration, which have a detrimental effect on cognitive function. Shift work is often a special requirement for nurses to provide continuous service for patients. The Stroop task is a classic method of executive function (EF) applied in neuroimaging researches. Functional near-infrared spectroscopy (fNIRS) has created new opportunities for investigating the hemodynamics of cerebral activated regions during executive function. However, there has been no study exploring cerebral hemodynamics changes related to shift work by fNIRS in nurses during performing a Stroop paradigm. The purpose of our study was to investigate the effects of shift work on fNIRS-based cerebral functions during the Stroop task among nurses in a real clinical environment. METHODS: Nurses registered in the Department of Neurology were eligible and consecutively included if they were simultaneously responsible for the day, evening and night shifts on the shift work schedule. A multi-channel fNIRS imaging system (NirScan, Danyang Huichuang Medical Equipment Co. Ltd, China) was used to acquire each participant's cerebral hemodynamic activities during performance of the Stroop task, which was performed for each subject separately before and after three working shifts. RESULTS: Eighteen nurses with certification were included in our study. Cerebral cortical activation and functional connectivity were significantly changed during Stroop test after day-shift (all $p < 0.05$, FDR corrected), indicating a leading role of left PFC. Further, we identified the reaction time under incongruent task before day shift, was positively correlated with LPFC ($r = 0.507$, $p = 0.038$), RPFC ($r = 0.547$, $p = 0.023$) and BPFC activation ($r = 0.512$,

p = 0.036). CONCLUSIONS: Our study further supported fNIRS as a useful functional imaging technique for monitoring brain activity in healthcare providers. Also, brain activation and functional connectivity during Stroop task consistently showed that working in day shift was related to decreased brain hemodynamic activities in nurses. Further, our findings would be helpful for leadership in clinical management on decision-making about arrangements for shift work.

Lien vers l'article

Correction: Effect of shift work on cerebral cortical activation and functional connectivity in nurses-implications for policy maker: a fNIRS observational study.

An R, Li C, Ai S, Wu Y, Wang S, Luo X, et al. *BMC Nurs*. 2025 Jul 30;24(1):999.

Lien vers l'article

HA comme facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Posture Analysis of Dental Doctors Using Digital Human Modeling.

Bernard A, Ahammad F, Garapati V. *Hosp Top*. 2025 Jul 5:1-9.

BACKGROUND: Work-Related Musculoskeletal Disorder (WRMSD) is one of the noticeable problems among dental professionals, reporting musculoskeletal pain due to the prolonged working postures. PURPOSE: This study aims to investigate the factors that influence dental doctor's health and quality of life related to their working conditions. METHODS: The study adopted 2 methodologies: Questionnaire based survey and Digital Human Modeling. Based on the questionnaire survey, it has been observed that 81.3% of doctors are suffering from WRMSDs in various parts of the body such as: neck, shoulder, upper back, and lower back. Chi-Square test was conducted to identify the factors that contribute to WRMSD. Digital Human modeling through JACK simulation package in the study was used to analyze the forces exerted on the lumbar area (L4-L5) of the lower back which helps to determine the risk for low back injuries. Written consent was obtained from the participants before participating in the study. RESULTS: The results show that WRMSD has a significant association with factors such as working hours and experience. It has been observed that the lower back compressive force on standing and sitting postures were below the NIOSH Compression limit value. But the prolonged working hours lead to discomfort to the dentist while performing their job. CONCLUSION: Based on the study it has been concluded that WRMSD is more evident in standing position, especially while performing procedures with forward head postures and the postures followed for a prolonged period.

Lien vers l'article

Autres pathologies

Aucun article dans ce bulletin.

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Well-being of the Swiss General Internal Medicine workforce: a nationwide survey.

Villiger R, Beneyto Afonso C, Pulver D, Stalder O, Limacher A, Aujesky D. *Swiss Med Wkly*. 2025 Apr 10;155:4073.

STUDY AIMS: Physician well-being is related to productivity and quality of care. The well-being of general internists (physicians who provide most primary care services) has never been comprehensively examined in Switzerland. In this survey, we assessed the well-being of Swiss general internists and its relationship to personal and work-related factors. METHODS: In November 2022, we conducted a national survey among members of the Swiss Society of General Internal Medicine. We evaluated the association between personal and work-related factors and reduced well-being (Physician Well-Being Index ≥4 points) using multivariable logistic regression. RESULTS: The response rate was 21% (1672/8111 members). Among the respondents whose data was analysed, 44% (710/1624) were women and 76% (1234/1613) primarily worked in an out-patient setting. Overall, 33% (543/1621) reported reduced well-being and 54% (876/1623) felt burnt out. Older age was associated with a lower likelihood of reduced well-being (adjusted odds ratio [aOR] 0.97, 95% confidence interval [CI] 0.96-0.98, per year) while being female was associated with a higher likelihood of reduced well-being (aOR 1.33, 95% CI 1.03-1.72). Factors associated with reduced well-being included working in an outpatient setting (aOR 1.76, 95% CI 1.24-2.51), having ≤2.5 personally rewarding working hours/day (aOR 2.18, 95% CI 1.63-2.90), long weekly working hours (aOR 1.02, 95% CI 1.01-1.03, per hour) and dissatisfaction with income (aOR 2.42, 95% CI 1.78-3.30). CONCLUSIONS: A third of Swiss general internists reported having a reduced well-being and approximately half felt burnt out. Female sex and several work-related factors such as working in an out-patient setting, long working hours, few personally rewarding work hours, and income dissatisfaction were related to having a reduced well-being.

Lien vers l'article

From Self-Efficacy to Disparities in Institutional Support: A Cross-Sectional and Multi-Dimensional Evaluation of Women in Empowerment and Leadership in Radiology Under Vision 2030.

Alruwaili AR, Abdullah Alzahrani A, Abdullah Almater H, Abdualaziz Aldibas L, Farah Al Anazi N, Mohammed Albanyan A, et al. *Inquiry*. 2025 Jan-Dec;62:469580251340172.

The Saudi Vision aims to empower women in leadership positions, particularly in male-dominated fields. Despite these national reforms, disparities remain. This study aimed to explore women's status in leadership and administrative positions in the medical imaging field and assess the empowering factors related to women's leadership and administrative roles. An online cross-sectional questionnaire was distributed to female workers in the medical imaging field at health and academic institutions between December 2021 and October 2022. The questionnaire comprised 3 sections: a) demographics (14 items), b) self-empowerment (38 items), and c) challenges faced by women in the medical imaging field (7 items). All responses were mandatory. Only 18.3% of the 44 female executives had leadership responsibilities, with most of them working in the medical imaging industry (72.7%). Furthermore, 49.6% of Saudi women feel that they cannot advance into administrative jobs. The common challenges faced by women were difficulties in balancing work and life (54.6%), followed by long working hours (52.5%) and societal restrictions (42.1%). The findings revealed no significant association between the mean score for challenges faced by Saudi women and various demographic characteristics ($P > .05$). This study reveals that many Saudi women in medical imaging and radiology feel constrained in their ability to advance to administrative roles, reflecting deep-rooted cultural barriers that Vision 2030 seeks to address. Significant participation from women younger than 25 revealed an unanticipated yet meaningful influence of Saudi Vision 2030, demonstrating how recent reforms have encouraged younger women to pursue careers and feel empowered to enter the medical

imaging profession earlier than previous generations. Addressing challenges requires targeted policy initiatives and reforms. By promoting gender equity and fostering an inclusive work environment, institutions in the healthcare sector can empower women and enhance their career growth.

Lien vers l'article

Women in Cardiothoracic Surgery: Impact on Partners, Coparents, and Children.

Cangut B, Molena D, Worrell SG, Blackmon S, Antonoff MB. *Ann Thorac Surg Short Rep*. 2025 Jun;3(2):528-33.

BACKGROUND: Careers in cardiothoracic surgery may affect home life in numerous ways, including relationships and interactions with family members of all ages. We aimed to gather the perspectives of partners, spouses, coparents, and adult children of women cardiothoracic surgeons to characterize the impact on family dynamics and household relationships. METHODS: A survey was disseminated electronically to partners or spouses, coparents, and adult children of women cardiothoracic surgeons. Participants answered questions regarding the impacts on daily life, distribution of responsibilities, and shared long-term goals. RESULTS: A total of 71 participants completed the survey, including 43 (60.6%) spouses, 12 (16.9%) partners, 4 (5.6%) other coparents, and 12 (16.9%) adult children. Although more than one-half believed that having a surgeon parent positively contributed to life skills development, 71% (15 of 21) expressed concerns about the negative impact of demanding work hours on children's emotional well-being. Partners shouldered a significant portion of responsibilities, with 55% (11 of 20) handling the majority of tasks, including child care, school activities, and medical appointments. Financial stability was a noted benefit, acknowledged by 85% (23 of 27) of partners. Analyses revealed a significant association between irregular working hours and job-related stressors on relationship tension and inadequate quality time together ($P < .001$). Importantly, more than one-half (58.3%; 7 of 12) of adult children recognized their cardiothoracic surgeon mothers as role models and credited these woman with teaching them important life skills. CONCLUSIONS: These findings highlight the need for support mechanisms for women surgeons and their families and emphasize the importance of recognizing both challenges and positive effects arising from a woman CT surgeon's career.

Lien vers l'article

Relationship between nursing work environment and clinical decision-making among Saudi nurses: psychological empowerment as mediator.

Alharbi A, Alkubati SA, Albaqawi H, Ali AZ, Hamed LA, Mohammed S, et al. *BMC Nurs*. 2025 Jul 1;24(1):682.

BACKGROUND: Clinical decision-making in the context of nursing practice is considered an essential skill for nursing practitioners. Nonetheless, various factors, such as the work environment and nurses' psychological empowerment (PE), may negatively influence their decision-making ability. Therefore, this study assessed the relationship between clinical decision-making (CDM) and the nursing work environment (NWE), focusing on the mediating role of PE among clinical nurses in Hail Province, Saudi Arabia. METHODS: This cross-sectional study used a self-administered questionnaire to collect data from 298 nurses at five hospitals in Hail Province, Saudi Arabia, from January to March 2025. Besides demographic characteristics, the questionnaire included the following tools: the CDM, the NWE-questionnaire, and the PE Scale. Multiple linear regression was used to identify significant predictors of both CDM and PE. The mediating role of PE on the relationship between NWE and CDM was examined using Hayes' Process Macro program v4.2 (Model 4). RESULTS: Multiple linear regression revealed that being a head nurse and perceiving a more positive NWE were significant predictors of higher scores of nurses' PE ($P < 0.05$). On the other hand, being a registered or head nurse, working more than five days per week, and perceiving a more supportive NWE were significant predictors of higher levels of nurses' CDM ($P < 0.05$). Conversely, working regular night shifts was a significant

predictor of lower scores of nurses' CDM. A significant positive direct effect and total effect were found between NWE and nurses' CDM (B = 0.136, P = 0.017 and B = 0.273, P < 0.001, respectively). The indirect effect (B = 0.137), based on 5,000 bootstrap resamples, had a bootstrap confidence interval above zero (0.021 to 0.263), indicating a partial positive mediating role of PE in the relationship between NWE and CDM. CONCLUSION: PE plays a vital role in fostering CDM and promoting a supportive NWE for nurses in clinical settings across Hail Province. These insights emphasize the need for establishing psychologically empowering conditions in the workplace to level up nurses' self-perceived competence and confidence in CDM. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

A Cross-sectional Survey on Health Status and Work Stress in Different Medical Professionals at Five University Hospitals, Focusing on Each Occupation.

Chishaki A, Sawatari H, Nishikitani M, Izukura R, Kido MA, Moriya F, et al. *J uoeh*. 2025;47(2):27-43.

This is the first multicenter survey to clarify occupational environments and health and stress status in various medical professionals (MPs). The survey questionnaire included the General Health Questionnaire (GHQ), Effort-Reward Imbalance (ERI), Quality of Working Life (QWL), medical incidents, and demographic data. We collected 3,335 questionnaires from 7,698 MPs and analyzed 3,036 of them. The MPs were categorized into 6 groups: nurses (n = 1,821); physicians (706); dentists (83); pharmacists (77); MPs involved in disease diagnoses (MP-diagnosis), including clinical laboratory technicians and radiographers (261); and MPs involved in patient treatment (MP-treatment), including physical therapists, occupational therapists, speech therapists, and other therapists (88). Working hours were the longest for physicians, and the night shift work was the greatest for nurses. Mental health (GHQ) was the worst in nurses and was the best in physicians. ERI was worse in nurses and MP-treatment than in other occupations. QWL in maintaining personal values was the worst in physicians. Different health/stress statuses must be considered when assisting MPs and forming policy guidelines.

Lien vers l'article

Santé psychique

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Lien vers l'article

Troubles cognitifs et de la vigilance

Aucun article dans ce bulletin.

Travail posté et de nuit facteur de risque

Généralités et prévention

An observational study on non-communicable disease risk factors among healthcare workers in high-stress environments.

Pirrello A, Mancuso DG, Pace C, Immordino A, Meli V, Tramuto F, et al. *Front Public Health*. 2025;13:1609034.

INTRODUCTION: Non-communicable diseases (NCDs) account for 74% of global mortality and place significant socioeconomic burdens on healthcare systems. Despite their knowledge and awareness, healthcare workers (HCWs) often struggle to adopt preventive measures due to demanding work conditions and high-stress environments. METHODS: This observational study aimed to evaluate the prevalence of NCD risk factors among HCWs at the University Hospital "Paolo Giaccone" in Palermo, Italy. An online questionnaire, based on the WHO's STEPS approach, was administered to 390 HCWs. Data from 273 responses were analyzed using SPSS software. RESULTS: The sample comprised 57.9% women, predominantly nurses (35.9%). DISCUSSION: Key findings revealed that 56.8% consumed alcohol, 42.1% used tobacco, and 86.1% frequently skipped meals due to work. Lifestyle factors, such as fruit and vegetable consumption, salt intake, and physical activity, were assessed alongside metabolic risk factors like blood pressure, glycemia, and triglycerides. Despite their expertise in NCD prevention, HCWs often failed to implement healthy behaviors. While evening shift work showed limited correlation with lifestyle changes, results underscored the need for targeted health promotion programs for HCWs. Healthcare institutions should actively support their workforce in adopting healthier lifestyles to mitigate NCD risks and improve public health outcomes.

Lien vers l'article

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Associations between shift work and biological age acceleration: A population-based study.

Wang JN, Hu W, Liu BP, Jia CX. *Geroscience*. 2025 Jun;47(3):4205-17.

BACKGROUND: This study aimed to examine the associations between shift work and biological age acceleration (BAA) and to explore potential moderating factors that may influence the associations. METHODS: A population-based study was conducted using data from 195 419 participants in the UK Biobank (mean age: 52.71 years; 49.1% male), all of whom were either in paid employment or self-employed. Biological age was assessed using 2 distinct algorithms, namely, the Klemera-Doubal method Biological Age (KDM-BA) and Phenotypic Age (PhenoAge). BAA was derived by the residuals with regressing biological age on chronological age. RESULTS: Among 195 419 participants, 31 495 (16.1%) were shift workers, and 15 925 (8.1%) worked night shifts. Shift workers were more likely to have chronic diseases, unhealthy lifestyles, and poor sleep. Shift and night shift work were significantly associated with increased BAA, with higher risks observed in irregular and permanent night shifts. Subgroup analyses showed greater BAA risks in younger workers, males, and those with high BMI or poor sleep. Significant interactions were found between shift work and sex, socioeconomic status, educational level, ethnicity, cancer, lifestyle, and sleep status. Males had higher risks of KDM-BA Acceleration from irregular and permanent night shifts, while females showed increased PhenoAge Acceleration risks with evening/weekend shifts. CONCLUSIONS: The present study underscored the

need for better work-hour scheduling and targeted interventions for high-risk populations, which may help mitigate biological age acceleration associated with shift work.

Lien vers l'article

Relationships between work, lifestyles, and obesity: comparative analysis between the Spanish National Health Survey 2017 and the European Health Survey 2020 in Spain.

Moreno G, Hernández-Martín MM, Meneses-Monroy A, Moreno-Pimentel A, Mayor-Silva LI, de-Pedro-Jiménez D. *J Occup Environ Med*. 2025 May 20.

OBJECTIVE: This study examines the relationship between overweight/obesity and sociodemographic, lifestyle variables and work-related factors. METHODS: A cross-sectional study with 7,302 full-time employees was conducted. RESULTS: Men had a higher prevalence of overweight/obesity than women. Explanatory risk models, adjusted for age, sex, and physical activity, identified age, male sex, low physical activity, ex-smoking status, moderate to high meat consumption, high cured meat consumption and high sugary drink consumption as associated factors for overweight/obesity. Over time, surveys revealed a decrease in physical activity, increased alcohol consumption, and more rotating and night shifts. Despite these changes, the overall prevalence of overweight/obesity remained unchanged. CONCLUSIONS: Older men are at a higher risk of overweight and obesity, with key factors including low physical activity, ex-smoking status, and high consumption of meat, cured meat, and sugary drinks.

Lien vers l'article

Association between Post-Acute Sequelae of COVID-19 Infection and Work Environment in a Semiconductor Packaging Plant in Taiwan.

Travail de nuit facteur de risque / autres pathos

Cheng FJ, Chuang YP, Pan HY, Hsieh TM, Hsu BM, Hsu PC. *J Occup Environ Med*. 2025 May 20.

OBJECTIVE: This study investigated the associations of lifestyle, work environment, and health status with subacute COVID-19 symptoms or post-acute sequelae of COVID-19 (PASC). METHODS: The questionnaire was used to collect data on lifestyles, work environment, health status, and coronavirus infection history and sequelae symptoms in a semiconductor packaging plant workers in Taiwan. Univariate and multiple logistic regression analyses were performed to identify the factors associated with the risks of subacute COVID-19 and PASC. RESULTS: This study included 333 subjects, with an average age of 37.6 years. Multivariate logistic regression analysis indicated that night shift work, exercise habit, and prolonged treatment were significant independent predictors of PASC. CONCLUSION: Night shift work and prolonged medical treatment were positively associated with and exercise was negatively associated with PASC. Optimizing work environments and shift schedules can reduce PASC risk.

Lien vers l'article

Association between gastrointestinal symptoms and insomnia among healthcare workers: a cross-sectional study.

Liu X, Huang Y, Wang Y, Lin C, Xu B, Zeng Y, et al. *Sci Rep*. 2025 Jun 4;15(1):19572.

Healthcare workers frequently encounter demanding schedules, shift work, and significant psychological stressors, all of which can contribute to gastrointestinal disturbances and sleep irregularities. Although research has established that stress and shift work are independent risk factors for gastrointestinal discomfort and insomnia, the direct link between these two conditions in

healthcare workers remains insufficiently explored. In this cross-sectional study, we recruited 372 healthcare workers from 6 public hospitals in Quanzhou via an online survey. Gastrointestinal and insomnia symptoms were measured using the Gastrointestinal Symptom Rating Scale (GSRS) and the Insomnia Severity Index (ISI), respectively, and analyzed via univariate and multivariate logistic regression models. Overall, 40.6% of participants reported insomnia symptoms. The GSRS total score was positively associated with insomnia both before (OR 1.18, 95% CI 1.12-1.25) and after adjustment for confounders including age, gender, anxiety, depression, somatization, and weekly night shift count (adjusted OR 1.07, 95% CI 1.00-1.15). These findings underscore a significant relationship between gastrointestinal symptoms and insomnia among healthcare workers, highlighting the need for targeted interventions to improve both GI health and sleep quality, thereby enhancing work efficiency and the overall quality of patient care.

Lien vers l'article

Cancers

Breast cancer determinants in low- to upper-middle-income countries: an umbrella review of meta-analyses of observational studies and an urgent call for implementation science.

Debela MB, Gonfa KB, Hussen MM, Zenbaba D, Kahsay AB, Mulugeta B, et al. *BMC Cancer*. 2025 Jul 1;25(1):1096.

INTRODUCTION: Meta-analyses on breast cancer determinants in low- and middle-income countries (LMICs), including upper-middle-income countries (UMICs), often produce fragmented, context-specific findings. This umbrella review provides a consolidated synthesis to identify consistent risk factors and strengthen the evidence base for guiding targeted public health strategies. METHODS AND MATERIALS: In accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, we conducted a systematic search for meta-analyses across multiple databases. Study quality was assessed using the AMSTAR 2 (A Measurement Tool to Assess Systematic Reviews) tool. Data were analyzed using STATA version 14, applying a random-effects model to estimate pooled effect sizes with 95% confidence intervals. Forest plots were used to visualize determinants. Publication bias was assessed through funnel plots and Egger's test, while heterogeneity was evaluated using the I-squared (I^2) statistic and Galbraith plots. Sensitivity analysis was performed to assess small-study effects. RESULTS: Out of 1,515 publications reviewed, 35 met the inclusion criteria. Eight determinants of breast cancer showed convincing evidence under the random-effects model: being overweight (POR = 1.16, 95% CI: 1.09-1.23), oral contraceptive use (POR = 1.19, 95% CI: 1.11-1.27), family history of breast cancer (POR = 2.26, 95% CI: 1.84-2.67), age ≥ 40 years (POR = 1.82, 95% CI: 1.60-2.05), smoking history (POR = 1.22, 95% CI: 1.11-1.34), exposure to air pollution (POR = 1.03, 95% CI: 1.01-1.05), higher fruit and vegetable consumption (POR = 0.82, 95% CI: 0.71-0.92), and history of night work (POR = 1.14, 95% CI: 1.02-1.25). CONCLUSIONS: This umbrella review identified eight key breast cancer risk factors. Non-modifiable factors like age ≥ 40 and family history, along with modifiable factors such as overweight, smoking, oral contraceptive use, air pollution, and night shift work, increased the odds of breast cancer. Adequate fruit and vegetable intake was linked to reduced odds, suggesting a protective effect. We recommend that public health strategies promote healthy lifestyles and target high-risk groups through early screening and awareness campaigns, using evidence-based interventions to reduce the breast cancer burden.

Lien vers l'article

Risque routier, accidentologie

Needle stick injuries among emergency medical services personnel: a systematic review and meta-analysis.

Sahebi A, Tahernejad S, Rezaei E, Shahmahmoudi F, Pirhadi S, Tahernejad A. *BMC Nurs*. 2025 Jul 1;24(1):697.

INTRODUCTION: EMS personnel, including nurses working in prehospital care, are frontline responders in various emergencies and disaster scenarios. Due to their direct involvement in high-risk procedures such as injections and IV access under dynamic conditions, they are especially vulnerable to NSIs-a major occupational hazard with serious health implications. This study aimed to conduct a systematic review and meta-analysis to examine the prevalence of NSIs among EMS personnel and highlight its significance for nursing practice, education, and safety policy. METHOD: This study was conducted based on the PRISMA guidelines, and its protocol was registered in PROSPERO under the code CRD42024615515. The searches were performed without time restrictions until the end of October 2024 across databases including PubMed, Scopus, and Web of Science. Manual searches were also performed via Google Scholar to ensure comprehensiveness. A random-effects model was used for the meta-analysis, and the I^2 index was employed to assess heterogeneity among studies. Data were analyzed using STATA software (version 15). RESULT: During the initial search of the information sources, 239 articles were identified from the reviewed databases. After screening, study selection, and quality assessment, 15 studies were ultimately included in the meta-analysis, with 17,547 EMS personnel being analyzed. According to the meta-analysis results, the overall prevalence of NSIs among emergency medical services personnel was reported to be 24.21% (95% CI: 17.31-31.10, I(2) = 99.3%, P < 0.000). CONCLUSION: Given the relatively high prevalence of NSIs among EMS personnel and the presence of specific risk factors associated with NSIs in EMS tasks compared to other professions, it is recommended to prioritize targeted training, regular evaluations, and ergonomic interventions to reduce the incidence of NSIs in EMS staff. Key occupational risk factors identified include shift work, high stress levels, fatigue, and exposure to unfamiliar environments. Educational programs, safety-engineered devices, and adherence to infection control protocols were among the most effective interventions noted. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

RPS et QVT

Relationship Between Professional Quality of Life and Career Success in Nurses: A Latent Profile Analysis.

Zhou XH, Duan DF, Chen L, Zhang YJ, Gong S, Chen Q. *Int Nurs Rev*. 2025 Jun;72(2):e70044.

AIMS: To classify the latent profiles of professional quality of life among nurses, determine the demographic factors influencing profile memberships, and examine the relationship between these profiles and career success. BACKGROUND: The professional quality of life is increasingly being employed to assess the active and passive work of nurses. However, whether different population characteristics of professional quality of life for nurses pattern latent profiles and how these subgroups correlate with nurses' career success remains to be determined. METHODS: This cross-sectional study was conducted between January and March 2024 at a general tertiary hospital in Sichuan Province, China. A total of 2233 nurses completed an online investigation encompassing the professional quality of life and career success. Latent profile analysis and hierarchical regression analysis were employed to validate our research hypotheses. The STROBE checklist was followed for this study. RESULTS: The professional quality of life among nurses was classified into three subgroups: "vibrant caregivers (24.5%)," "adaptive contributors (44.7%)," and "overburdened supporters (30.8%)." The comparison

of three profiles among nurses with different genders, ages, marital statuses, personnel attribution, professional titles, managerial positions, working years, and rotational night shift status revealed statistically significant differences (all $p < 0.05$). The different profiles exhibited significant effects on career success among nurses ($\Delta R(2) = 0.165$, $p < 0.001$). CONCLUSIONS: The professional quality of life was significantly associated with career success for nurses. Nursing managers should recognize the individual differences in nurses' professional quality of life and implement targeted organizational management strategies based on the specific needs of their staff. By doing so, they can enhance nurses' professional well-being, foster higher levels of career success, and ensure the long-term stability of the nursing team. IMPLICATIONS FOR NURSING PRACTICE AND POLICY: This study emphasizes the need for tailored interventions in nursing practice and policy, addressing the distinct needs of nurses based on their profiles of professional quality of life to enhance their career success. By integrating flexible working conditions, psychological support systems, and data-driven resource allocation, these strategies can improve nurses' career success, patient care quality, and the sustainability of the healthcare system.

Lien vers l'article

Reflections on training and management of junior radiologists through analysis of correction rates in emergency radiology reports.

Wu H, Li M, Chen J, Fan X, He M, Ji Z, et al. *BMC Med Educ*. 2025 Jul 1;25(1):879.

PURPOSE: Numerous studies have examined factors affecting junior radiologists' interpretation accuracy, mostly focusing on Western countries. This study investigates the accuracy of radiology reports during emergency shifts in a Chinese hospital, considering shift times, examination types, radiologist experience, and patient factors. MATERIALS AND METHODS: From January 2023 to March 2024, we randomly selected emergency shifts and analyzed radiology reports initially interpreted by junior radiologists and reviewed by senior radiologists. This study compared the corrected rates between day (8 AM to 3:59 PM) and night shifts (8 PM to 7:59 AM), as well as between the first and second halves of each shift. Additionally, we examined the relationships between examination type and quantity, radiologist experience, patient age, and correction rates. RESULTS: In 19 day shifts and 18 night shifts, 14 junior radiologists initially interpreted 8,338 reports. The corrected rate for daytime emergency reports (25.09%) was higher than for nighttime reports (21.91%, $p = 0.236$). Corrected rate in the second half of shifts was lower than in the first half, regardless of day (28.89% vs. 22.15%, $p < 0.001$) or night (22.89% vs. 19.05%, $p = 0.008$). Radiologist experience is significantly associated with corrected rates ($p < 0.001$), with elderly patients (29.85%) showing a higher rate of corrections compared to children (22.03%) and middle-aged patients (18.85%, $p < 0.001$). CONCLUSION: Correction rates of radiology reports vary under different training, different working hours, and different working models. Customizing management practices and training programs based on research findings is essential to improve accuracy and develop specific guidelines.

Lien vers l'article

A scoping review of work patterns of junior medical officer tasks in hospital out of hours.

Tucker B, Prowse C, Thomas J. *Intern Med J*. 2025 Jun;55(6):968-74.

BACKGROUND: The role of Junior Medical Officers (JMOs) is pivotal in ensuring the delivery of patient care in hospitals. The challenges of providing medical care for patients out of hours (OOH) fall disproportionately to the JMO group, with implications for supervision and well-being. AIM: The aim was to identify and map the available evidence on the work patterns of hospital JMOs OOH, including tools for measuring tasks and workload; barriers to JMO well-being; factors which impact on the safety of care and strategies to reduce JMO workload OOH. METHODS: A scoping review following Arksey and O'Malley and the Joanna Briggs Institute framework was performed. A total of 2446 articles were

identified, and 49 individual articles were included. RESULTS: Work performed during non-standard working hours (evenings, nights and weekends) has impacts on both patient safety (morbidity, mortality, intensive care unit readmission, procedural complications). The OOH period is associated with reduced training quality and diminished JMO well-being. CONCLUSIONS: Strategies to reduce workload and maximise supervision are key to improving OOH care and JMO experience. A more detailed account of JMO work OOH is needed. Tools for studying workload should include direct observation.

Lien vers l'article

Impact of shift durations on sleep, fatigue, and wellness among neonatologists: a cross-sectional survey analysis.

McAdams RM, Savich R, McNamara PJ, Lou L, Eickhoff JC, Lakshminrusimha S. *J Perinatol*. 2025 May;45(5):589-94.

OBJECTIVE: To assess the effects of shift durations on sleep, fatigue, and wellness among U.S. neonatologists in diverse settings. METHODS: A cross-sectional survey of U.S. neonatologists yielded 810 responses from 4400 recipients. Statistical analyses included ANOVA, logistic regression, and cluster analysis. RESULTS: Younger neonatologists (<35 years) reported the highest fatigue levels, with females more affected than males (p = 0.0185). Male neonatologists were less likely than females (OR 0.55, p = 0.0013), and those in university settings more likely than non-university settings (OR 1.43, p = 0.0389), to report adverse effects of shifts >16 h. Cluster analysis identified three fatigue patterns, with the most severe among younger neonatologists working shifts >16 h. CONCLUSION: Long shifts (>16 h) negatively affect neonatologists' wellness, particularly younger and female clinicians. With most neonatal-perinatal medicine fellows being female, policies addressing shift duration are needed.

Lien vers l'article

Men Are From Mars, Women Are From Venus? Differing Effects of Shift Work on Nurses' Marital Satisfaction.

Licht N, Bekman N, Wruble A. *Am J Crit Care*. 2025 Jul 1;34(4):293-301.

BACKGROUND: Shift work can affect quality of life, especially marital satisfaction. OBJECTIVE: To compare marital satisfaction between nurses doing shift work in intensive care units (ICUs) and inpatient departments, focusing on gender differences. METHODS: A descriptive-comparative cross-sectional study was conducted among 126 nurses. Data were collected using self-reported questionnaires, including the ENRICH Marital Satisfaction scale. RESULTS: The study included 76 ICU nurses (54 women [71%]) and 50 inpatient department nurses (31 women [62%]). The mean ENRICH Marital Satisfaction score was higher (indicating greater marital satisfaction) for ICU nurses (mean [SD], 51.58 [11.03]) than for inpatient department nurses (mean [SD], 49.00 [9.90]), although the difference was not significant (P = .94). Gender-specific differences (mean [SD]) were significant among inpatient department nurses in roles and responsibilities (men, 4.47 [0.53], women, 3.97 [0.62]; P = .004), partner communication (men, 4.32 [0.67], women, 3.80 [0.48]; P = .01), time spent with partner (men, 4.05 [0.91], women, 3.20 [0.96]; P = .003), and religious beliefs (men, 4.21 [0.78], women, 3.70 [0.98]; P = .02) components. Linear regression indicated that the partner's profession in health care (β = -0.21; P = .02) and the partner's satisfaction with the nurse's shift work (β = 0.18; P = .04) were significant predictors of marital satisfaction. CONCLUSIONS: Addressing gender, unit, and other personal factors while promoting the connection between employee well-being and the work environment may enhance marital satisfaction among nurses, foster a more balanced work-family system, and improve professional performance.

Lien vers l'article

Prevalence and risk factors of sexual harassment in the workplace by female readymade garment workers in Bangladesh.

Kabir H, Maple M, Usher K. *Front Public Health*. 2025;13:1580709.

OBJECTIVES: Bangladeshi female readymade garment (RMG) workers' experience of sexual harassment in the workplace raises concerns about the overall working conditions of the garment sector. Female workers' feelings of being unsafe and threatened in the workplace have been considered an alarming issue for international buyers/brands who aim to ensure sexual harassment-free workplaces as a condition of sourcing clothing items. We hypothesise that the frequent experience of sexual harassment among Bangladeshi female RMG workers tends to be associated with (i) age, (ii) marital status, (iii) night shift (working during night time), (iv) non-existence of anti-sexual harassment cells (a formal body/committee works against sexual harassment incidence in the workplace), (v) trade union activity, and (vi) factory location and types. To our knowledge, there has been no previous research on the experience of sexual harassment by female garment workers and its connections to such a variety of occupational and geographical factors. By addressing this gap, the present study aimed to investigate the prevalence and risk factors associated with female garment workers' experience of sexual harassment. METHODS: Cross-sectional data were collected from 332 (mean age = 26.10 years; SD = 6.54 years) currently employed female garment workers in Bangladesh, between February and July 2018. Data were analysed using bivariate and multivariate logistic regression modelling. RESULTS: In the past 6 months, nearly one-quarter (22.0%) of workers reported experiencing frequent sexual harassment inside the factory, mainly by male co-workers (37.0%), supervisors (32.9%), security guards (27.4%), and factory owners (2.7%). Workers from the factories located in Chattogram (a peripheral region compared to Dhaka) reported a higher frequency of sexual harassment than those working in factories located in Dhaka (the capital city of Bangladesh). Overall, the percentages of unmarried and young female workers who experienced sexual harassment were almost double compared to married and aged female workers. Workers' frequent experience of sexual harassment at the workplace was associated with factory location (β 0.67, 95%CI 1.02, 3.76), night shift (β 2.58, 95%CI 6.92, 25.18), and non-existence of an anti-sexual harassment cell inside the factory (β 0.62, 95%CI 0.97, 3.55). CONCLUSION: Urgent improvements in overall workplace conditions and anti-sexual harassment programmes are needed to safeguard female workers in the Bangladeshi RMG sector.

Lien vers l'article

Knowledge, attitudes, and practices of cardiovascular health care personnel regarding coronary CTA and AI-assisted diagnosis: a cross-sectional study.

Jiang S, Ma L, Pan K, Zhang H. *J Glob Health*. 2025 Jul 4;15:04103.

BACKGROUND: Artificial intelligence (AI) holds significant promise for medical applications, particularly in coronary computed tomography angiography (CTA). We assessed the knowledge, attitudes, and practices (KAP) of cardiovascular health care personnel regarding coronary CTA and AI-assisted diagnosis. METHODS: We conducted a cross-sectional survey from 1 July to 1 August 2024 at Tsinghua University Hospital, Beijing, China. Healthcare professionals, including both physicians and nurses, aged ≥18 years were eligible to participate. We used a structured questionnaire to collect demographic information and KAP scores. We analysed the data using correlation and regression methods, along with structural equation modelling. RESULTS: Among 496 participants, 58.5% were female, 52.6% held a bachelor's degree, and 40.7% worked in radiology. Mean KAP scores were 13.87 (standard deviation (SD) = 4.96, possible range = 0-20) for knowledge, 28.25 (SD = 4.35, possible range = 8-40) for attitude, and 31.67 (SD = 8.23, possible range = 10-50) for practice. Knowledge ($r = 0.358$; $P < 0.001$) and attitude positively correlated with practice ($r = 0.489$; $P < 0.001$). Multivariate logistic regression indicated that educational level, department affiliation, and job satisfaction were significant predictors of knowledge.

Attitude was influenced by marital status, department, and years of experience, while practice was shaped by knowledge, attitude, departmental factors, and job satisfaction. Structural equation modelling showed that knowledge was directly affected by gender (β = -0.121; P = 0.009), workplace (β = -0.133; P = 0.004), department (β = -0.197; P < 0.001), employment status (β = -0.166; P < 0.001), and night shift frequency (β = 0.163; P < 0.001). Attitude was directly influenced by marriage (β = 0.124; P = 0.006) and job satisfaction (β = -0.528; P < 0.001). Practice was directly affected by knowledge (β = 0.389; P < 0.001), attitude (β = 0.533; P < 0.001), and gender (β = -0.092; P = 0.010). Additionally, gender (β = -0.051; P = 0.010) and marriage (β = 0.066; P = 0.007) had indirect effects on practice. CONCLUSIONS: Cardiovascular health care personnel exhibited suboptimal knowledge, positive attitudes, and relatively inactive practices regarding coronary CTA and AI-assisted diagnosis. Targeted educational efforts are needed to enhance knowledge and support the integration of AI into clinical workflows.

Lien vers l'article

Factors associated with satisfaction of Italian physicians: a cross-sectional study in Rome.

Furia G, Vinci A, Heidar Alizadeh A, Sapienza M, Savoia C, Tarsitano MG, et al. *Front Public Health*. 2025;13:1584483.

INTRODUCTION: Healthcare workers' (HCW) quality of life and job satisfaction are critical for their well-being and performance, influencing patient outcomes and reducing burnout. Burnout, linked to excessive workloads, night shifts, and low income, is a recognized issue among HCW, exacerbated during the COVID-19 pandemic. This study aimed to explore work-life balance and professional satisfaction among members of the Physicians and Dental Surgeons Board of Rome (OMCeO Rome). METHODS: A cross-sectional survey was conducted from March to June 2023 among OMCeO Rome members. An anonymous, digitally designed questionnaire assessed sociodemographic and professional data, perceived stress, and overall satisfaction using a Likert scale. Data were analyzed descriptively, and logistic regression identified predictors of satisfaction. RESULTS: The survey included 1,104 respondents, predominantly aged over 50. Satisfaction levels were polarized: 47.4% reported high satisfaction, while 49.4% expressed low satisfaction. Night shifts and income below €100,000/year were significantly associated with lower satisfaction (OR 1.9 and OR 3.9, respectively). General practitioners/primary care paediatricians reported the highest stress levels, while self-employed professionals showed the lowest stress and intention to quit. DISCUSSION: Work-life balance challenges, including night shifts and inadequate income, strongly influence HCW job satisfaction. Addressing these factors through administrative support, reduced workloads, and targeted interventions could mitigate burnout and improve care quality. Further studies should explore systemic and individual strategies to enhance HCW well-being and professional sustainability.

Lien vers l'article

Validating a Multidimensional Perspective of the Relationship Between Workplace Bullying, Professional Quality of Life, and Turnover Intention of Chinese Novice Nurses.

Dong S, Shen X, Zhao T, Zeng R, Chen M. *J Nurs Manag*. 2025;2025:6653143.

Background: The global shortage of nurses is a pressing social issue, and the high mobility of the nursing profession further exacerbates this challenge. Novice nurses' experiences of workplace bullying significantly increase their risk of leaving the profession. Therefore, exploring the mechanisms by which workplace bullying affects novice nurses' turnover intention is important for alleviating the nursing shortage and maintaining the stability of the nursing workforce. Method: This cross-sectional study of 832 novice nurses in northeastern China self-reports assessed workplace bullying, professional quality of life, and turnover intention-related status. The structural equation model was developed to analyze how workplace bullying (including person-related negative, work-related negative, and

organizational injustice) affects turnover intention through the mediating role of the professional quality of life (compassion satisfaction, burnout, and secondary traumatic stress). Result: The results indicated that workplace bullying was significantly associated with novice nurses' turnover intention. Person-related negativity, work-related negative, and organizational injustice can influence turnover intentions by decreasing company satisfaction and increasing burnout; furthermore, work-related negativity can increase turnover intention by exacerbating secondary traumatic stress. Conclusion: This study provides new perspectives for understanding novice nurses' psychological reactions and career decisions in a workplace bullying environment and provides empirical support for nursing management practices. The findings highlight the importance of effective intervention strategies to improve the stability of the nursing team, optimize the quality of patient care, and reduce nurse turnover.

Lien vers l'article

The Outcomes of Implementing Logistician Positions on NURSES' Job Satisfaction in Hospitals: A Mixed-Method Study.

Delpy M, Jovet-Rossignol L, Oliveira-Kumakura AR, Vong, II, Rothan-Tondeur M, Nohra RG. *J Adv Nurs*. 2025 Jul;81(7):4330-42.

AIM: To investigate the outcomes of implementing logistician positions on nurses' job satisfaction in hospitals. DESIGN: A sequential explanatory mixed-methods approach was employed. METHOD: In the quantitative phase, the "Job Satisfaction Single Item" scale was utilised, and nurses' perceptions and intentions to leave were assessed. Subsequently, semi-structured interviews were conducted with nurses who had or had not experienced the deployment of logisticians to deepen the quantitative findings. Content analysis was conducted and data triangulation was used with a co-researcher. RESULTS: Questionnaires were completed by 602 nurses, followed by semi-structured interviews with 10 nurses between July 2023 and September 2023. Job satisfaction was significantly higher among nurses who worked with a logistician in their department. This organisational change freed up nurses' time and added more meaning to their work. Logisticians alleviated the physical and mental workload of nurses. Furthermore, turnover intention is higher among nurses who do not work with a logistician. Additionally, nurses provided recommendations and suggestions for the deployment of these posts. CONCLUSION: Logistician positions enable nurses to refocus on their core duties, thereby improving their job satisfaction. Logisticians also improve nurses' health. Enhancing nurses' job satisfaction can reduce turnover rates and help address the nursing shortage. Further studies could complement these results in order to provide arguments in favour of the deployment of logisticians in hospitals. IMPACT: Given the global nursing shortage, implementing logistician posts could be important to prevent the closure of hospital beds and ensure the continuous provision of healthcare services to the population. PATIENT OR PUBLIC CONTRIBUTION: No patient or public contribution.

Lien vers l'article

Biosensors, Biometrics and Capabilities in Practice (CiP): A WHOOP 4.0 Perspective.

Barlow E, Robinson D, James O, Luton O, Eley C, Bowman C, et al. *J Surg Educ*. 2025 Aug;82(8):103549.

OBJECTIVE: This study aimed to measure physiological stress response related to Capabilities in Practice (CiPs) using wearable technology. DESIGN: Surgical residents wore WHOOP4.0 sensors for 6-weeks with CiP event diaries and Abbreviated Maslach Burnout Inventory (AMBI) scores recorded. SETTING: A surgical training program serving a single UK (Wales) deanery. PARTICIPANTS: 23 Surgical residents participated (13 male, median age 30 [26-35] year). RESULTS: Median Heart Rate Variability (HRV) varied by resident grade (Core Surgical Training (CST) resident 58 vs. Higher Surgical Training (HST) resident 48 ms, $p < 0.001$) and duty shift (HRV: Off Duty 51 milliseconds (ms), Normal Working Day (NWD) 48, On Call Day (OCD) 45, $p = 0.009$) and CiP (Inpatient work 48, Elective Operating 47,

Emergency Operating 44, Emergency Day Shift 46, Emergency Night Shift 63 ms, p = 0.017). Emergency shifts were associated with adverse sleep profiles with median sleep performance varying from 74.0% (Night Shift) to 98.0% (Off Duty, p < 0.001). On average, residents had 13.4% and 27.2% less sleep related to OCDs or Night Shifts respectively (p < 0.001), and 20.2% less sleep related to Emergency Night Shifts when compared with Elective Day time CiPs (p < 0.001). HRV was related to sleep efficiency (rho 0.38, p < 0.001) and REM sleep (rho 0.211, p < 0.001). AMBI score >3 (consistent with burnout) was found in 71.4% CST vs. 30.1% HST (p < 0.001) and 49.1% males vs. 60.9% females (p < 0.001) and was inversely related to HRV and sleep efficiency (p < 0.001). CONCLUSIONS: Stress response varied by 20% (shift profile) and 30% (CiP) highlighting daily clinician physical demand. Adverse sleep profiles were seen related to emergency work, in particular night shifts, impacting sleep quantity and quality.

Lien vers l'article

Psychosocial problems experienced by intensive care nurses regarding sleep pattern within the scope of working conditions: A phenomenological study.

Atasayar B, Emirza EG, Uzun S. *Nurs Crit Care*. 2025 Jul;30(4):e13218.

BACKGROUND: Nurses working in intensive care units experience insomnia and accompanying psychosocial problems due to working conditions. AIM: This study explores with a phenomenological approach the psychosocial problems experienced by intensive care nurses regarding sleep patterns within the scope of working conditions. STUDY DESIGN: In this phenomenological study, semi-structured in-depth interviews were conducted with 16 nurses working in the surgical intensive care unit of a state hospital in Türkiye. Criterion sampling method, one of the purposive sampling methods, was used to reach the sample group. Researchers' interviews continued until they reached data saturation. All interviews were recorded on a voice recorder after obtaining the necessary permissions from the nurses and then transcribed. The study data were evaluated using thematic analysis. The current manuscript was reported following the COREQ checklist. RESULTS: Data analysis revealed three main themes (how working as an intensive care nurse changes sleep patterns, the relationship between shift work, work performance, patient care and how working as an intensive care nurse changes individual life and coping strategies) and nine subthemes (mental, physical, social, work performance, patient care, nutrition, family life, social life and coping). CONCLUSION: The study's findings revealed that nurses working in intensive care experienced psychosocial difficulties related to sleep patterns and had trouble coping. In particular, it was determined that sleep problems of intensive care nurses cause difficulties in family life, nutrition and social life. It is recommended that the number of personnel in workplaces be increased, overtime hours should be limited, and professional development and training on the importance of sleep for all nurses should be provided. RELEVANCE TO CLINICAL PRACTICE: Nurses working in intensive care units may experience psychosocial problems due to working conditions, which may negatively change their coping skills. Therefore, organizing the working conditions of nurses positively changes their coping skills.

Lien vers l'article

Relationship between nursing work environment and clinical decision-making among Saudi nurses: psychological empowerment as mediator.

Alharbi A, Alkubati SA, Albaqawi H, Ali AZ, Hamed LA, Mohammed S, et al. *BMC Nurs*. 2025 Jul 1;24(1):682.

BACKGROUND: Clinical decision-making in the context of nursing practice is considered an essential skill for nursing practitioners. Nonetheless, various factors, such as the work environment and nurses' psychological empowerment (PE), may negatively influence their decision-making ability. Therefore, this study assessed the relationship between clinical decision-making (CDM) and the nursing work environment (NWE), focusing on the mediating role of PE among clinical nurses in Hail Province, Saudi

Arabia. METHODS: This cross-sectional study used a self-administered questionnaire to collect data from 298 nurses at five hospitals in Hail Province, Saudi Arabia, from January to March 2025. Besides demographic characteristics, the questionnaire included the following tools: the CDM, the NWE-questionnaire, and the PE Scale. Multiple linear regression was used to identify significant predictors of both CDM and PE. The mediating role of PE on the relationship between NWE and CDM was examined using Hayes' Process Macro program v4.2 (Model 4). RESULTS: Multiple linear regression revealed that being a head nurse and perceiving a more positive NWE were significant predictors of higher scores of nurses' PE ($P < 0.05$). On the other hand, being a registered or head nurse, working more than five days per week, and perceiving a more supportive NWE were significant predictors of higher levels of nurses' CDM ($P < 0.05$). Conversely, working regular night shifts was a significant predictor of lower scores of nurses' CDM. A significant positive direct effect and total effect were found between NWE and nurses' CDM ($B = 0.136$, $P = 0.017$ and $B = 0.273$, $P < 0.001$, respectively). The indirect effect ($B = 0.137$), based on 5,000 bootstrap resamples, had a bootstrap confidence interval above zero (0.021 to 0.263), indicating a partial positive mediating role of PE in the relationship between NWE and CDM. CONCLUSION: PE plays a vital role in fostering CDM and promoting a supportive NWE for nurses in clinical settings across Hail Province. These insights emphasize the need for establishing psychologically empowering conditions in the workplace to level up nurses' self-perceived competence and confidence in CDM. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

A Cross-sectional Survey on Health Status and Work Stress in Different Medical Professionals at Five University Hospitals, Focusing on Each Occupation.

Chishaki A, Sawatari H, Nishikitani M, Izukura R, Kido MA, Moriya F, et al. *J uoeh*. 2025;47(2):27-43.

This is the first multicenter survey to clarify occupational environments and health and stress status in various medical professionals (MPs). The survey questionnaire included the General Health Questionnaire (GHQ), Effort-Reward Imbalance (ERI), Quality of Working Life (QWL), medical incidents, and demographic data. We collected 3,335 questionnaires from 7,698 MPs and analyzed 3,036 of them. The MPs were categorized into 6 groups: nurses (n = 1,821); physicians (706); dentists (83); pharmacists (77); MPs involved in disease diagnoses (MP-diagnosis), including clinical laboratory technicians and radiographers (261); and MPs involved in patient treatment (MP-treatment), including physical therapists, occupational therapists, speech therapists, and other therapists (88). Working hours were the longest for physicians, and the night shift work was the greatest for nurses. Mental health (GHQ) was the worst in nurses and was the best in physicians. ERI was worse in nurses and MP-treatment than in other occupations. QWL in maintaining personal values was the worst in physicians. Different health/stress statuses must be considered when assisting MPs and forming policy guidelines.

Lien vers l'article

Santé psychique

Moral courage of palliative care nurses and affecting factors.

Yildirim D, Kocatepe V, Türkmenoğlu A. *BMC Palliat Care*. 2025 Jul 1;24(1):179.

BACKGROUND: Moral courage among palliative care nurses plays a critical role in ensuring high-quality care for patients in the final stages of life. This study aimed to assess the level of moral courage among palliative care nurses and identify the factors that influence it. METHODS: This descriptive, cross-sectional study was conducted between September 2023 and September 2024, involving 181 palliative care nurses. Data were collected through an online survey distributed to nurses who voluntarily agreed to participate. The survey included a "Personal Information Form" and the "Nurses' Moral Courage

Scale (NMCS)." RESULTS: The mean age of participants was 31.82 ± 7.92 years, and their average professional experience was 9.33 ± 9.32 years. Of the nurses, 62.4% were female. The average NMCS score was 82.25 ± 12.21. Nurses with a master's degree scored significantly higher on the NMCS compared to those with lower educational levels ($p < 0.001$). Additionally, nurses who had chosen their current unit voluntarily ($p = 0.046$), and those who rated their knowledge of healthcare ethics as "excellent" ($p < 0.001$), demonstrated significantly higher moral courage scores. A positive correlation was found between moral courage and age ($r = 0.153$, $p = 0.040$), whereas a negative correlation was observed between moral courage and the average number of night shifts per month ($r = -0.253$, $p = 0.001$). CONCLUSION: The findings suggest that palliative care nurses generally exhibit high levels of moral courage. Educational attainment, voluntary selection of the work unit, and perceived competence in healthcare ethics were positively associated with moral courage. Conversely, challenging working conditions-such as high workloads, frequent night shifts, and insufficient institutional support-may hinder nurses' ethical decision-making by fostering caution and hesitation.

Lien vers l'article

Mental health and well-being in Chinese nurses: Relationship with psychological flexibility and night shifts.

Wu Y, Dong L, Jiang X, Li X, Han J, Lin H. *Chronobiol Int*. 2025 Jun 17:1-8.

The purpose of this study was to investigate whether the relationship between mental health and well-being among Chinese nurses could be mediated by factors such as night shift frequency and psychological flexibility. A total of 421 nurses were selected from 10 Grade secondary public hospitals in Shanghai, China. The 12-item General Health Questionnaire (GHQ-12) was used to assess mental health status. Additionally, psychological flexibility and well-being were assessed using the Chinese version of Personalized Psychological Flexibility Index and Chinese version of the 5-item WHO Well-Being Index, respectively. Correlation analysis showed that psychological flexibility was positively associated with well-being ($r = 0.220$, $p < 0.05$) and negatively correlated with mental health issues ($r = –0.225$, $p < 0.05$). Night shift frequency was linked to mental health issues ($r = 0.276$, $p < 0.05$) and lower psychological flexibility ($r = –0.165$, $p < 0.05$). Structural equation modeling demonstrated that age had direct positive effects on psychological flexibility ($\beta = 0.130$) and mental health ($\beta = 0.541$), while night shift frequency directly worsened mental health ($\beta = 0.618$) and reduced psychological flexibility ($\beta = –0.198$). Psychological flexibility significantly influenced both mental health ($\beta = –0.674$) and well-being ($\beta = 0.418$), with indirect effects on well-being ($\beta = 0.268$). Mental health was the strongest predictor of well-being ($\beta = 0.718$). These findings highlight the importance of psychological flexibility, night shifts and age in nurses' mental health well-being, though the study's cross-sectional design limits causal inferences.

Lien vers l'article

Burnout and anxiety among Chinese nurses: the mediating roles of positive coping strategies and interpersonal relationship problems: a cross-sectional study.

Wang Y, Li N, Huang X, Wang J, Huang J, Huang Y, et al. *Front Psychiatry*. 2025;16:1595392.

BACKGROUND: Burnout among nurses is a global problem that results in increased turnover as well as decreased career satisfaction and poor nursing service. Previous researchers have suggested that anxiety is associated with burnout. However, the relationship between anxiety and burnout requires further investigation to clarify. How interpersonal relationships and coping styles influence this relationship remains to be further explored. Furthermore, the question of how the demographic characteristics of nurses predict burnout remains unanswered. AIMS: This study aimed to explore the mechanisms by which anxiety affects burnout, to verify the mediating roles of interpersonal relationship problems and positive coping in the relationship between anxiety and burnout, and to

explore the factors that can predict burnout among nurses. METHODS: A total of 4,856 nurses were enrolled in this study. The ability of anxiety, positive coping, interpersonal relationship problems, and demographic factors to predict burnout were explored via linear regression models. The relationships among anxiety, positive coping, interpersonal relationship problems, and burnout were also explored by developing a parallel mediation model with the assistance of SPSS PROCESS 3.3 software. RESULTS: The following factors can predict burnout among nurses: internal medicine ward (β=0.075 p<0.01), surgery ward (β=0.054 p<0.01), operating room (β=0.022 p=0.037), a number of night shifts worked per month higher than 10 (β=0.046 p<0.01), and possession of a master's degree or higher level of education (β=0.03 p<0.01). Positive coping (β=0.029, 95% CI: 0.022 to 0.036) and interpersonal relationship problems (β=0.134, 95% CI: 0.118 to 0.151) mediate the relationship between anxiety and burnout. CONCLUSION: The results of this study reveal that nurses' department, level of education, and number of night shifts worked per month are effective predictors of burnout. Positive coping and interpersonal relationships problems mediate the relationship between anxiety and burnout.

Lien vers l'article

Evaluating burnout syndrome among healthcare workers: Prevalence and risk factors.

Wang XJ. *World J Psychiatry*. 2025 May 19;15(5):104880.

In this editorial we comment on the article by Mohamed et al published in the recent issue of World Journal of Psychiatry. Globally, health care workers are facing a major problem called burnout syndrome, which is characterized by emotional alienation, burnout, and decreased personal fulfillment. This physical and mental stress has a significant impact on the quality of care and health of medical personnel. This study delves into the challenges facing Somalia's healthcare system, such as lack of resources, heavy workloads, long working hours, and high-pressure environments that make healthcare personnel particularly vulnerable to burnout. This situation further affects their mental health and the quality of care services. Research shows that about 25% of healthcare professionals are affected by burnout syndrome. By improving the quality of sleep, strengthening monitoring, and providing mental health support, the health status of medical personnel and patient care can be effectively improved. The findings highlight the need for interventions including improved sleep quality, enhanced mental health monitoring and support, appropriate workload management, a supportive work climate, and effective time management strategies in the workplace to enhance health staff well-being and the quality of patient care. These measures are critical to addressing the current challenges of the healthcare system, improving patient care and prioritizing the well-being of frontline healthcare staff.

Lien vers l'article

The association between sleep and burnout in psychiatric nurses: a survey from China.

Ren W, Li W, Ji C, Kong F, Chao L, Yang Q, et al. *BMC Nurs*. 2025 Jun 4;24(1):639.

BACKGROUND: Psychiatric nurses are at high risk of burnout due to their demanding job responsibilities. Sleep quality has been widely studied as a potential factor contributing to burnout, but the relationship between sleep and burnout among psychiatric nurses in China remains unclear. This study investigated the association between sleep quality and burnout in Chinese psychiatric nurses, identifying potential risk factors for burnout. METHODS: A cross-sectional study design was utilized, collecting data from 1044 psychiatric nurses across multiple hospitals in China. Sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI), and burnout was measured through the Maslach Burnout Inventory- General Survey (MBI-GS). Logistic regression analyses assessed the association between sleep quality and burnout, controlling for demographic variables. RESULTS: This study showed that 20.39% of psychiatric nurses had job burnout. In the emotional exhaustion model, age ≥ 36 years, high nursing title, sleep disorders (e.g., poor quality, frequent disturbances, daytime

dysfunction), and hypnotic drug use were positively correlated with emotional exhaustion, while night shifts in the past month were negatively correlated. These factors explained 26.5% of the variation ($P < 0.05$). In the cynicism model, male gender, age ≥ 36 years, family history of mental illness, sleep disorders, and hypnotic drug use were positively correlated, whereas night shifts were negatively correlated, accounting for 19.9% of the variation ($P < 0.05$). In the reduced personal achievement model, female gender, overweight/obesity, high nursing education/title, and night shifts showed positive correlations, while family history of mental illness, sleep efficiency, and hypnotic drug use exhibited negative correlations, explaining 3.1% of the variance ($P < 0.05$). Notably, both night shift frequency and hypnotic drug use were significantly associated with all three burnout dimensions ($P < 0.01$). CONCLUSION: This study highlights the strong link between sleep disturbances and burnout in psychiatric nursing. Implementing personalized strategies to improve sleep hygiene could serve as an effective means to mitigate burnout and support the mental health of psychiatric nurses. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Identifying, managing and preventing nurse burnout in the emergency department.

Brennan E. *Emerg Nurse*. 2025 Jun 18.

Burnout is a prevalent and escalating issue in emergency nursing, driven by factors such as increased patient demand, overcrowding, staffing shortages, workplace violence and critical incident exposure. This article explores the systemic, environmental and psychological causes of burnout, and examines its detrimental effects on nurses' well-being and patient safety. Strategies for identifying, managing and preventing burnout are discussed, including recognising early symptoms, managing the emotional effect of trauma, supporting personal resilience and the importance of organisational measures such as improved staffing, leadership support and workplace safety initiatives. Practical interventions to develop resilience, enhance emotional regulation and mitigate the effect of shiftwork are explored. The article emphasises that while individual strategies are valuable, systemic changes are essential to address the root causes of burnout. By implementing multilevel approaches, emergency nurses and healthcare organisations can protect staff well-being and sustain the delivery of safe, high-quality care.

Lien vers l'article

A Cross-sectional Survey on Health Status and Work Stress in Different Medical Professionals at Five University Hospitals, Focusing on Each Occupation.

Chishaki A, Sawatari H, Nishikitani M, Izukura R, Kido MA, Moriya F, et al. *J uoeh*. 2025;47(2):27-43.

This is the first multicenter survey to clarify occupational environments and health and stress status in various medical professionals (MPs). The survey questionnaire included the General Health Questionnaire (GHQ), Effort-Reward Imbalance (ERI), Quality of Working Life (QWL), medical incidents, and demographic data. We collected 3,335 questionnaires from 7,698 MPs and analyzed 3,036 of them. The MPs were categorized into 6 groups: nurses (n = 1,821); physicians (706); dentists (83); pharmacists (77); MPs involved in disease diagnoses (MP-diagnosis), including clinical laboratory technicians and radiographers (261); and MPs involved in patient treatment (MP-treatment), including physical therapists, occupational therapists, speech therapists, and other therapists (88). Working hours were the longest for physicians, and the night shift work was the greatest for nurses. Mental health (GHQ) was the worst in nurses and was the best in physicians. ERI was worse in nurses and MP-treatment than in other occupations. QWL in maintaining personal values was the worst in physicians. Different health/stress statuses must be considered when assisting MPs and forming policy guidelines.

Lien vers l'article

Troubles cognitifs et de la vigilance

The association between sleep and burnout in psychiatric nurses: a survey from China.

Ren W, Li W, Ji C, Kong F, Chao L, Yang Q, et al. *BMC Nurs*. 2025 Jun 4;24(1):639.

BACKGROUND: Psychiatric nurses are at high risk of burnout due to their demanding job responsibilities. Sleep quality has been widely studied as a potential factor contributing to burnout, but the relationship between sleep and burnout among psychiatric nurses in China remains unclear. This study investigated the association between sleep quality and burnout in Chinese psychiatric nurses, identifying potential risk factors for burnout. METHODS: A cross-sectional study design was utilized, collecting data from 1044 psychiatric nurses across multiple hospitals in China. Sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI), and burnout was measured through the Maslach Burnout Inventory- General Survey (MBI-GS). Logistic regression analyses assessed the association between sleep quality and burnout, controlling for demographic variables. RESULTS: This study showed that 20.39% of psychiatric nurses had job burnout. In the emotional exhaustion model, age ≥ 36 years, high nursing title, sleep disorders (e.g., poor quality, frequent disturbances, daytime dysfunction), and hypnotic drug use were positively correlated with emotional exhaustion, while night shifts in the past month were negatively correlated. These factors explained 26.5% of the variation ($P < 0.05$). In the cynicism model, male gender, age ≥ 36 years, family history of mental illness, sleep disorders, and hypnotic drug use were positively correlated, whereas night shifts were negatively correlated, accounting for 19.9% of the variation ($P < 0.05$). In the reduced personal achievement model, female gender, overweight/obesity, high nursing education/title, and night shifts showed positive correlations, while family history of mental illness, sleep efficiency, and hypnotic drug use exhibited negative correlations, explaining 3.1% of the variance ($P < 0.05$). Notably, both night shift frequency and hypnotic drug use were significantly associated with all three burnout dimensions ($P < 0.01$). CONCLUSION: This study highlights the strong link between sleep disturbances and burnout in psychiatric nursing. Implementing personalized strategies to improve sleep hygiene could serve as an effective means to mitigate burnout and support the mental health of psychiatric nurses. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Factors impacting military emergency medicine residents' sleep and barriers to seeking help: A sequential exploratory mixed-methods study.

Oliver JJ, Ediger DS, Phelps JF, Hoffman AL, Martin AW, Martin SA, et al. *Am J Emerg Med*. 2025 Jun 19;96:122-7.

Emergency medicine (EM) resident physicians face unique challenges in adhering to the principles of sleep hygiene due to the nature of EM shift work. They are at higher risk for sleep disorders, sleep-related errors and accidents, and impaired performance due to constantly changing schedules. Military residents also perceive a stigma against seeking mental health care and taking sleeping medications. This mixed-methods study investigated sleep quality and barriers to seeking care among EM residents at a single center, three-year, Active-Duty military EM residency program. A survey was made available to all 36 EM residents assessing daytime sleepiness using the Epworth Sleepiness Scale (ESS) with a target response rate of 66.7 %. The purpose of using the ESS was to identify at least 9 EM residents with excessive daytime sleepiness to participate in semi-structured interviews about their sleeping experiences. Excessive daytime sleepiness is defined as ≥11 on the ESS. These interviews were coded using a phenomenological approach to data analysis. Of the 36 EM residents in the program, 24 (66.7 %) completed the survey. Of these, 11 scored ≥11 on the ESS. Of these, nine EM residents participated in semi-structured interviews. Thematic saturation was achieved, and four themes

emerged from interviews: 1) challenges with sleep hygiene; 2) less satisfied with sleep since starting residency; 3) normalization of poor sleep; and 4) taking medication for sleep is stigmatized. Results revealed significant difficulties adhering to the principles of sleep hygiene due to inconsistent sleep-wake times. Participants identified difficulty avoiding caffeine, alcohol, and large meals before bed, and felt their sleep had worsened since starting residency. Though residents often discussed sleep difficulties with colleagues, these conversations normalized sleeping problems and reduced help-seeking behavior. Participants perceived a stigma against using prescription medication for sleep. This study highlights significant sleep disturbances experienced by EM residents in this study and an inability to adhere to the principles of sleep hygiene. Normalization of sleep disturbances in residency seems to impede residents from seeking professional help. Further research should focus on targeted interventions to improve resident sleep hygiene, promote help-seeking behavior, and reduce the stigma associated with prescription drug use, when necessary. Additional studies are needed to examine the generalizability of these results to other training programs.

Lien vers l'article

Impact of shift durations on sleep, fatigue, and wellness among neonatologists: a cross-sectional survey analysis.

McAdams RM, Savich R, McNamara PJ, Lou L, Eickhoff JC, Lakshminrusimha S. *J Perinatol*. 2025 May;45(5):589-94.

OBJECTIVE: To assess the effects of shift durations on sleep, fatigue, and wellness among U.S. neonatologists in diverse settings. METHODS: A cross-sectional survey of U.S. neonatologists yielded 810 responses from 4400 recipients. Statistical analyses included ANOVA, logistic regression, and cluster analysis. RESULTS: Younger neonatologists (<35 years) reported the highest fatigue levels, with females more affected than males (p = 0.0185). Male neonatologists were less likely than females (OR 0.55, p = 0.0013), and those in university settings more likely than non-university settings (OR 1.43, p = 0.0389), to report adverse effects of shifts >16 h. Cluster analysis identified three fatigue patterns, with the most severe among younger neonatologists working shifts >16 h. CONCLUSION: Long shifts (>16 h) negatively affect neonatologists' wellness, particularly younger and female clinicians. With most neonatal-perinatal medicine fellows being female, policies addressing shift duration are needed.

Lien vers l'article

Association between gastrointestinal symptoms and insomnia among healthcare workers: a cross-sectional study.

Liu X, Huang Y, Wang Y, Lin C, Xu B, Zeng Y, et al. *Sci Rep*. 2025 Jun 4;15(1):19572.

Healthcare workers frequently encounter demanding schedules, shift work, and significant psychological stressors, all of which can contribute to gastrointestinal disturbances and sleep irregularities. Although research has established that stress and shift work are independent risk factors for gastrointestinal discomfort and insomnia, the direct link between these two conditions in healthcare workers remains insufficiently explored. In this cross-sectional study, we recruited 372 healthcare workers from 6 public hospitals in Quanzhou via an online survey. Gastrointestinal and insomnia symptoms were measured using the Gastrointestinal Symptom Rating Scale (GSRS) and the Insomnia Severity Index (ISI), respectively, and analyzed via univariate and multivariate logistic regression models. Overall, 40.6% of participants reported insomnia symptoms. The GSRS total score was positively associated with insomnia both before (OR 1.18, 95% CI 1.12-1.25) and after adjustment for confounders including age, gender, anxiety, depression, somatization, and weekly night shift count (adjusted OR 1.07, 95% CI 1.00-1.15). These findings underscore a significant relationship between gastrointestinal symptoms and insomnia among healthcare workers, highlighting the need for targeted

interventions to improve both GI health and sleep quality, thereby enhancing work efficiency and the overall quality of patient care.

Lien vers l'article

Biosensors, Biometrics and Capabilities in Practice (CiP): A WHOOP 4.0 Perspective.

Barlow E, Robinson D, James O, Luton O, Eley C, Bowman C, et al. *J Surg Educ*. 2025 Aug;82(8):103549.

OBJECTIVE: This study aimed to measure physiological stress response related to Capabilities in Practice (CiPs) using wearable technology. DESIGN: Surgical residents wore WHOOP4.0 sensors for 6-weeks with CiP event diaries and Abbreviated Maslach Burnout Inventory (AMBI) scores recorded. SETTING: A surgical training program serving a single UK (Wales) deanery. PARTICIPANTS: 23 Surgical residents participated (13 male, median age 30 [26-35] year). RESULTS: Median Heart Rate Variability (HRV) varied by resident grade (Core Surgical Training (CST) resident 58 vs. Higher Surgical Training (HST) resident 48 ms, $p < 0.001$) and duty shift (HRV: Off Duty 51 milliseconds (ms), Normal Working Day (NWD) 48, On Call Day (OCD) 45, $p = 0.009$) and CiP (Inpatient work 48, Elective Operating 47, Emergency Operating 44, Emergency Day Shift 46, Emergency Night Shift 63 ms, $p = 0.017$). Emergency shifts were associated with adverse sleep profiles with median sleep performance varying from 74.0% (Night Shift) to 98.0% (Off Duty, $p < 0.001$). On average, residents had 13.4% and 27.2% less sleep related to OCDs or Night Shifts respectively ($p < 0.001$), and 20.2% less sleep related to Emergency Night Shifts when compared with Elective Day time CiPs ($p < 0.001$). HRV was related to sleep efficiency (rho 0.38, $p < 0.001$) and REM sleep (rho 0.211, $p < 0.001$). AMBI score >3 (consistent with burnout) was found in 71.4% CST vs. 30.1% HST ($p < 0.001$) and 49.1% males vs. 60.9% females ($p < 0.001$) and was inversely related to HRV and sleep efficiency ($p < 0.001$). CONCLUSIONS: Stress response varied by 20% (shift profile) and 30% (CiP) highlighting daily clinician physical demand. Adverse sleep profiles were seen related to emergency work, in particular night shifts, impacting sleep quantity and quality.

Lien vers l'article

Chronobiologie

Animal

Loss of the acyltransferase TMEM68 leads to growth delay and dysregulation of triacylglycerol and glycerophospholipid homeostasis in the mouse brain.

Zhang C, Li T, Heier C, Pang H, Huang F, Fu X, et al. *Biochim Biophys Acta Mol Cell Biol Lipids*. 2025 Jun;1870(5):159622.

Lipid droplets (LDs) are ubiquitous cellular storage organelles for triacylglycerol (TAG) that have recently been implicated in brain development and aging, and the progression of neurodegenerative diseases. However, the enzymes responsible for brain TAG synthesis are incompletely understood. Transmembrane protein 68 (TMEM68) catalyzes TAG synthesis independent of canonical diacylglycerol acyltransferase (DGAT) enzymes and is highly expressed in the brain. In the current study, we addressed the role of TMEM68 in murine brain TAG metabolism using a global Tmem68 knockout mouse model. We found that loss of TMEM68 led to decreased TAG levels in the cerebral cortex and a concomitant increase in polyunsaturated glycerophospholipid species. These changes in lipid pattern were associated with perturbed expression of genes involved in fatty acid and glycerophospholipid metabolism. While brain size and morphology were largely unaffected, TMEM68 deficiency caused reductions in white adipose tissue mass, decreased insulin-like growth factor 1 levels, and retarded weight gain. In conclusion, our study identifies TMEM68 as regulator of TAG and glycerophospholipid homeostasis in the central nervous system and discloses a requirement of the enzyme for postnatal development and energy metabolism.

Lien vers l'article

Chicoric Acid Differentially Ameliorates Circadian Rhythm Disorder-Induced Liver Glucose Homeostasis Dysregulation in Mice Depending on Intervention Time.

Song Y, Zhang Y, Di Y, Li N, Zhao Z, Liu Z, et al. *J Agric Food Chem*. 2025 Jun 25;73(25):15596-609.

Dietary phenolic compounds have demonstrated significant potential in preventing shift-work-induced metabolic dysregulation. Meanwhile, chrononutrition has revealed that the intake time of these compounds is closely related to human health. This study explored the effects and potential mechanism of the intervention time of chicoric acid on the improvement of glucose metabolism in a mouse model of the circadian rhythm disorder. Results showed that CA was effective in improving glucose tolerance and restoring the expression levels and phase shifts of clock genes (Bmal1, Per2, Cry2, etc.) and glucose metabolism-related genes (Gck, Pepck, G6pc). Further silencing of Bmal1 in HepG2 cells revealed that CA can act as a biological clock regulator that regulates glucose metabolism-related genes in a Bmal1-dependent manner. Furthermore, we found that CA intervention at ZT12 optimally promoted glucose metabolic homeostasis, and the possible mechanism was that the intervention time coincided with the high expression of Bmal1.

Lien vers l'article

Ameliorative Effects of Sweeteners on a Mouse Jet Lag Model.

Li J, Gao TX, Tomita J, Kume K. *Biol Pharm Bull*. 2025;48(6):919-27.

Circadian rhythms regulate essential physiological functions, including body temperature and hormone secretion, in a 24-h cycle. These rhythms are synchronized with environmental cues, primarily light, through the suprachiasmatic nucleus. Disruptions, such as jet lag, misalign internal rhythms with external time, leading to fatigue and insomnia. This study explores the potential of dietary sweetening agents as non-pharmacological interventions to facilitate circadian re-entrainment in a mouse jet lag model. Male C57BL/6 mice, maintained on a 12-h light/dark cycle, underwent a 6-h

phase advance to simulate jet lag. Mice received drinking water with or without sweeteners (sucrose, sucralose, xylitol, maltitol), and locomotor activity was assessed using wheel-running behavior and intraperitoneally implanted nanotags measuring 3dimensional acceleration and body temperature. Sucrose and sucralose significantly accelerated re-entrainment, with phase-shifting rates of 0.93 and 1.28 h/d, respectively, compared to 0.76 h/d in controls. Both sweeteners also enhanced post-shift activity, whereas xylitol had a minor effect and maltitol showed no significant impact. Sweeteners did not affect rest duration during the jet lag period. These findings indicate that sweet taste can facilitate circadian adaptation, offering a potential dietary approach to mitigate jet lag symptoms. This study provides insights into how taste perception influences circadian regulation, with implications for managing circadian misalignment in frequent travelers and shift workers.

Lien vers l'article

Daytime-restricted feeding induces lean MAFLD in high-fat diet-fed mice by upregulating CD36-mediated lipid accumulation.

Wang Z, Zhang M, Chen M, Fu S, Zhang Y, Chen M, et al. *J Lipid Res*. 2025 Jun 23;66(8):100853.

Time-restricted feeding (TRF) may aid in weight loss and improve metabolic health; however, its long-term effects and applicability to all individuals remain unclear. This study investigated the impact of different dietary patterns on hepatic metabolism by subjecting mice to either a normal chow diet or a high-fat diet, allowing for ad libitum feeding, daytime restrictive feeding (DRF), or nighttime restrictive feeding (NRF). Using metabolic cages to assess energy intake, we found that the fuel utilization rhythms of DRF mice were disrupted compared to ad libitum-fed mice. Mice on normal chow DRF exhibited only dyslipidemia, while those on high-fat DRF developed lean metabolic dysfunction-associated fatty liver disease (MAFLD), characterized by more pronounced dyslipidemia, weight loss, and hepatic lipid accumulation. RNA seq revealed that CD36 plays a crucial role in the development of lean MAFLD induced by high-fat DRF by inhibiting AMPK phosphorylation, disrupting the balance between lipogenesis and oxidation. Mechanistic validation was performed in CD36 liver-specific knockout mice and Liposomal nanoparticle injection models. These findings provide new insights into the potential mechanisms linking feeding patterns to lean MAFLD. Additionally, CD36 emerges as a potential therapeutic target for high-fat-induced lean MAFLD. Clarifying the relationship between DRF and lean MAFLD may inform guidelines for specific populations, such as individuals practicing intermittent fasting or those working night shifts, while also suggesting potential therapeutic strategies for clinical management.

Lien vers l'article

Melatonin Prevents Tumor Growth: The Role of Genes Controlling the Circadian Clock, the Cell Cycle, and Angiogenesis.

Cardenas-Romero S, Saderi N, Ramirez-Plascencia OD, Baez-Ruiz A, Flores-Sandoval O, Briones CE, et al. *J Pineal Res*. 2025 Jul;77(4):e70064.

Recent evidence highlights the protective role of melatonin in a variety of pathological conditions, including multiple types of cancer. Epidemiological studies increasingly suggest that exposure to light at night suppresses melatonin synthesis in night-shift and rotating-shift workers, potentially elevating their risk of cancer development. Experimental data further indicate that melatonin can inhibit the proliferation of tumor cells, including glioblastoma-like stem cells. In the present study, we investigated the effect of melatonin on the expression of genes involved in regulating the circadian rhythm, cell cycle progression, and angiogenesis in rats exposed to constant light, a model of circadian disruption. Our findings demonstrate that melatonin administration significantly inhibited tumor growth and reduced the vascularization associated with circadian rhythm disturbance. Molecular analysis revealed that melatonin altered the circadian expression of several genes affecting tumor

biology, including p53, TNF-α, Per2, VEGF-A, PDGF-C, and Ang, which are involved in circadian rhythms, cell cycle, and angiogenesis regulation. These results strengthen the existing hypothesis that circadian disruption contributes to tumor progression and suggest that melatonin exerts anticancer effects by modulating circadian gene expression and angiogenesis. Our findings provide further insight into the mechanism by which melatonin may exert oncostatic effects and highlight its potential as a therapeutic agent in cancers associated with circadian rhythm disruption.

Lien vers l'article

Homme

Association Between Shift Working and Brain Morphometric Changes in Workers: A Voxel-wise Comparison.

Choi JY, Kim S, Lee Y, Kim D, Lee W. *Saf Health Work*. 2025 Jun;16(2):236-42.

OBJECTIVE: There is abundant evidence from observational studies linking various health problems to shift work, but there is a lack of brain-based neurological evidence. Therefore, we examined morphometric changes on brain magnetic resonance imaging (MRI) between shift and non-shift workers. METHODS: A total 111 healthy workers participated in this study and underwent brain MRI, with the analysis incorporating merged workers' health surveillance data from regional hospital workers. Voxel-based morphometry analysis was used to investigate regional changes in the gray matter volume. To investigate the association of structural changes between shift workers and non-shift workers, a general linear model and threshold-free cluster enhancement were used with covariates, including total intracranial volume, age, and sex. RESULTS: After family-wise error correction, non-shift workers exhibited a significantly larger cerebellar region ($p < 0.05$) than shift workers. Conversely, the inferior parietal gyrus was found to be significantly larger in shift workers than in non-shift workers with family-wise error correction. CONCLUSIONS: We observed increased clusters in the brains of both shift and non-shift workers, suggesting that the acquired occupational environment, including the shift work schedule, could influence brain neuroplasticity, which is an important consideration for occupational health.

Lien vers l'article

The Association Between Shift Work and Lipid Health in Chinese Railway Workers: A Longitudinal Analysis of 6 Years.

Wu H, Jin Y, Liu Y, Zeng S, Wen L, Qian C, et al. *J Occup Environ Med*. 2025 Jun 1;67(6):e406-e12.

OBJECTIVE: This study aimed to evaluate the longitudinal association between shift work and lipid health among railway workers. METHODS: Data from 1126 railway workers with at least two physical examinations from 2016 to 2021 were retrieved. Records of triglycerides, total cholesterol, low-density, and high-density lipoprotein cholesterol were extracted, with dyslipidemia defined by Chinese guidelines. Group-based trajectory model were adopted to identify the trajectory of lipid health. Multinomial logistics regression evaluated the association between shifts and trajectories of lipid health. RESULTS: Three trajectories of dyslipidemia prevalence were identified: persistently low (40.8%), persistently moderate (34.3%), and persistently high (24.9%). Those on dedicated/pooled charter shifts were more likely be persistently low dyslipidemia prevalence trajectory group (odds ratio = 0.617, 95% confidence interval = 0.408-0.934). CONCLUSIONS: Nonregular day shift work is associated with lower levels of lipid profile and lower risk of lipid abnormalities.

Lien vers l'article

Associations between shift work and biological age acceleration: A population-based study.

Wang JN, Hu W, Liu BP, Jia CX. *Geroscience*. 2025 Jun;47(3):4205-17.

BACKGROUND: This study aimed to examine the associations between shift work and biological age acceleration (BAA) and to explore potential moderating factors that may influence the associations. METHODS: A population-based study was conducted using data from 195 419 participants in the UK Biobank (mean age: 52.71 years; 49.1% male), all of whom were either in paid employment or self-employed. Biological age was assessed using 2 distinct algorithms, namely, the Klemera-Doubal method Biological Age (KDM-BA) and Phenotypic Age (PhenoAge). BAA was derived by the residuals with regressing biological age on chronological age. RESULTS: Among 195 419 participants, 31 495 (16.1%) were shift workers, and 15 925 (8.1%) worked night shifts. Shift workers were more likely to have chronic diseases, unhealthy lifestyles, and poor sleep. Shift and night shift work were significantly associated with increased BAA, with higher risks observed in irregular and permanent night shifts. Subgroup analyses showed greater BAA risks in younger workers, males, and those with high BMI or poor sleep. Significant interactions were found between shift work and sex, socioeconomic status, educational level, ethnicity, cancer, lifestyle, and sleep status. Males had higher risks of KDM-BA Acceleration from irregular and permanent night shifts, while females showed increased PhenoAge Acceleration risks with evening/weekend shifts. CONCLUSIONS: The present study underscored the need for better work-hour scheduling and targeted interventions for high-risk populations, which may help mitigate biological age acceleration associated with shift work.

Lien vers l'article

A Digital, Real-Time, History-Based Sleep-Management Tool to Enhance Alertness.

Song YM, Choi SJ, Lim D, Wijaya RH, Jang HJ, Park HR, et al. *Sleep*. 2025 Jun 9.

In today's 24-hour society, chronic sleep disruption and circadian misalignment have led to a 'global sleep crisis', increasing the risk of cognitive impairment, workplace accidents, and long-term health consequences. Yet, most sleep management strategies rely on one-size-fits-all recommendations that overlook individual variability, resulting in suboptimal and/or impractical solutions. To address this, we previously developed a real-time, personalized sleep scheduling framework based on tracking of dynamic sleep pressure and circadian rhythms using a mathematical model. We recently implemented this framework in SleepWake, a mobile app designed for real-world application. In a retrospective analysis of a 71-participant clinical study and a prospective trial with 19 shift workers, greater adherence to SleepWake's personalized recommendations led to significant improvements in alertness. These benefits stemmed from two key innovations that go beyond static sleep guidelines: real-time prescribed supplemental sleep to counteract prior deficits, and personalized sleep phase alignment tailored to individual circadian patterns. This study provides the first direct evidence that continuously updated, individualized sleep schedules can optimize alertness and sleep health in real-world settings. By delivering sleep recommendations rooted in sleep physiology and evidence-based modeling, SleepWake has the potential to improve health, enhance safety, and elevate overall quality of life in today's around-the-clock society.

Lien vers l'article

Review Article: Night Shift Work, Circadian Disruption, and the Gut Microbiome: Implications for Human Health.

Vivarelli S, Marconi A, Matera S, Falzone L, Fenga C. *Crit Rev Oncog*. 2025;30(2):67-81.

The gut microbiome (GM) plays a critical role in regulating a number of physiological processes within the human host, including metabolism, immune function, and protection from pathogens. Emerging

evidence suggests that occupational exposures, particularly working night shifts or during irregular hours, significantly influence the GM composition and functionality. These disruptions are closely tied to the misalignment between the host's circadian rhythms and the GM's internal clocks, leading to dysbiosis and increased systemic inflammation. This misalignment has been linked to the development of several health conditions, including dysmetabolism, type 2 diabetes, obesity, cardiovascular diseases, and gastrointestinal disorders. This review provides a thorough analysis of the current research on workers who are exposed to night shifts, highlighting the profound impact of circadian misalignment on both the GM wellbeing and the overall human health. Innovative interventions, such as dietary supplementation with probiotics, prebiotics, circadian-aligned nutrition, and time-restricted eating, offer promising strategies for restoring the GM balance and synchronizing the microbiome with the host's circadian rhythms affected by occupational stressors. Precision-based interventions tailored to specific occupational exposures and circadian patterns may provide effective solutions for improving worker's health and preventing long-term chronic diseases associated with detrimental exposures. In light of these findings, integrating microbiome-targeted approaches into occupational health policies could lead to better health outcomes, reduce the risk of chronic diseases, and enhance the overall well-being of at-risk workers. Occupational research should continue to explore these personalized approaches, together with novel assessment strategies, to optimize health interventions and mitigate the long-term effects of night shift work.

Lien vers l'article

Chronotype Prior to Shift Work Influences Outcomes: Resilience as a Mediator of Sleep and Mental Health.

Park G, Park WJ, Kang KW, Kim H. *Sleep*. 2025 Jun 28.

STUDY OBJECTIVES: Despite persistent nursing shortages, newly hired nurses inevitably engage in shift work (SW), which harms their sleep and mental health, accelerating their early-career turnover. This study examined whether pre-SW chronotype is associated with post-SW sleep/mental health outcomes and whether resilience mediates these relationships. METHODS: A prospective cohort of 595 newly hired nurses, of whom 331 were included in the final analysis, was recruited from two national tertiary hospitals. Participants provided baseline and 6-12 months follow-up data after SW exposure. Chronotype, resilience, sleep outcomes (sleep quality and daytime sleepiness) and mental health outcomes (depression, anxiety, and stress scales) were assessed at both baseline and follow-up using validated self-report questionnaires. Structural equation modeling examined direct and indirect pathways linking baseline chronotype to follow-up resilience and sleep/mental health outcomes. RESULTS: Among 331 nurses (age: 23.4±1.2 years, 293 females, 26 morningness, 186 intermediate, 119 eveningness), the morningness group exhibited the highest resilience at both baseline ($p = 0.0206$) and follow-up ($p = 0.0002$). Baseline chronotype was significantly associated with resilience following SW ($\beta = 0.259$, $p < 0.01$). Baseline chronotype further indirectly affected both excessive daytime sleepiness ($\beta = -0.013$, 95% CI: [-0.025, -0.001]) and mental health ($\beta = -0.045$, 95% CI [-0.066, -0.009]) via resilience. CONCLUSION: Pre-SW chronotype significantly influenced post-SW sleep and mental health outcomes, with resilience serving as a key mediator. These findings highlight the potential for targeted interventions-such as resilience training or chronotype-based scheduling-to mitigate early SW-related mental health challenges and reduce nurse turnover.

Lien vers l'article

The ticking clock sets the pace for female fertility.

Nied E, Simonneaux M, Simonneaux V. *Ann Endocrinol (Paris)*. 2025 Jun;86(3):101785.

At a time when an increasing number of men and women face fertility issues, it is necessary to understand the basic mechanisms involved in mammalian reproductive activity in order to propose

adapted therapeutic tools. This review describes how endogenous circadian clocks take part in the timing of reproductive cycles in female mammals and, consequently, how exposure to circadian disruption may impair female fertility. In female mammals, the master circadian clock, located in the hypothalamic suprachiasmatic nuclei (SCN), uses a vasopressinergic output to knock on preoptic kisspeptin (Kp) neurons each day at the onset of the active period. Kp is a potent activator of neurons producing the gonadotropin-releasing hormone (GnRH) controlling the release of the pituitary gonadotropins luteinizing (LH) and follicle-stimulating (FSH) hormones, which in turn promote ovarian gameto- and steroido-genesis. Estradiol, produced as oocytes mature, exerts positive feedback on Kp neurons. This dual control of Kp neuronal activity by the clock-driven vasopressin output and the elevated circulating estradiol allows a large increase in GnRH-induced LH release at the onset of the waking period, at the end of the follicular phase, triggering the release of mature oocytes. Additionally, different parts of the reproductive axis also host secondary circadian clocks that participate in the daily and ovarian regulation of female reproductive cycles. Different experiments revealed the functional significance of the circadian regulation of female reproduction. Indeed, exposure of female rodents to different protocols of circadian disruption impairs estrous cycle robustness, LH surge timing, and gestational success. Additionally, epidemiological studies indicate that women working non-standard schedules face increased risks of reproductive issues. Therefore, when women seek medical assistance for infertility, lifestyle factors, including work schedule organization, should be assessed. Chronotherapeutic interventions could then be considered to enhance the robustness of female reproductive cycles and, as a result, improve their reproductive health.

Lien vers l'article

Chronobiological and neuroendocrine insights into dry eye.

Li L, Li H, Chen B. *Trends Mol Med*. 2025 Jun;31(6):522-34.

Dry eye, a prevalent ocular surface disease, is significantly influenced by modern lifestyle factors such as night-shift work and extended screen time. Emerging evidence suggests a strong correlation between disturbances in circadian rhythm, sleep disorders, and dry eye. However, the precise underlying mechanisms remain unclear. Recent studies have underscored the crucial role of circadian rhythms and neuroendocrine regulation in maintaining ocular surface health. Advances in treatment strategies targeting neuroendocrine pathways have shown promising developments. This review explores the interplay between circadian rhythms, neuroendocrine regulation, and the ocular surface, examines the impact of circadian disruption on the pathophysiology of dry eye, and proposes intervention strategies to alleviate dry eye associated with disturbances in circadian rhythms.

Lien vers l'article

Association between common mental disorders and sleep parameters measured by self-report and actigraphy in Brazilian female shift workers.

Theodoro H, da Silva JC, Mendes KG, Cibeira GH, Schenkel JC, Garcez A, et al. *Sleep Biol Rhythms*. 2025 Jul;23(3):343-52.

This study investigated the association between common mental disorders (CMD) and sleep parameters measured objectively through actigraphy, as well as using self-reported data, among female shift workers in southern Brazil. This cross-sectional study involved 450 female participants, with 278 undergoing actigraphy. CMD was assessed using a Self-Reporting Questionnaire (SRQ-20), while self-reported sleep disturbance was measured using the Pittsburgh Sleep Quality Index (PSQI) scale. Actigraphy was utilized to measure sleep quality over a consecutive 48-h period. The odds ratios (OR) and 95% confidence intervals (CI) were estimated using multinomial logistic regression. The prevalence of sleep disturbance was 9.7% (95% CI 7.2-12.9) according to the PSQI, while CMD prevalence was 47.3% (95% CI 42.6-52.1) in the entire sample. Sleep disturbance was significantly

associated with positive CMD screening (OR = 20.03; 95% CI 7.22-55.54) as well as with night shift work (OR = 5.38; 95% CI 1.75-16.52). CMD did not exhibit a statistically significant association with objective sleep quality parameters measured using actigraphy. However, adjusted analysis of sleep efficiency revealed that women on the afternoon (OR = 3.09; 95% CI 1.53-6.25) or night shifts (OR = 3.43; 95% CI 1.60-7.35) had a higher prevalence of 10 or more awakenings during sleep compared to those working morning shifts. This study highlights the high prevalence of CMD among female shift workers. Furthermore, CMD demonstrated a statistically significant association with self-reported sleep disorders within this population group. However, this association was not observed when compared with objective data collected by actigraphy.

Lien vers l'article

Validation of the Norwegian version of the Munich ChronoType Questionnaire for shift workers (MCTQ(Shift)).

Moen LV, Rysstad TL, Lie JS, Haugen F, Matre D. *Chronobiol Int*. 2025 Jun 30:1-12.

Chronotype may play a role in the association between shift work and health risks. An important and widely used questionnaire for measuring chronotype is the Munich Chronotype Questionnaire for Shift workers (MCTQ(Shift)); however, it has neither been validated nor is it available in Norwegian or any other Scandinavian language. Therefore, we translated the MCTQ(Shift) into Norwegian and assessed its validity against subjective and objective sleep measures. We adhered to established methodological guidelines to translate the questionnaire. The final Norwegian version was administered to 60 workers (85% responders) on a three-shift schedule (21.7% women, median age 28 y) at an industrial plant. Sleep duration and mid-sleep from the MCTQ(Shift) were compared with sleep diary and a multisensory sleep tracker (the Oura ring). Construct and criterion validity were evaluated. Sleep duration measured by the MCTQ(Shift) was highly correlated ($r > 0.6$) with sleep duration calculated from both the Oura ring and sleep diaries after morning shifts. On free days, the MCTQ(Shift) correlated moderately with the sleep diary but weakly with the Oura ring. Mid-sleep correlations from MCTQ(Shift) compared to the Oura ring data were high ($r > 0.7$) for sleep periods after morning and night shifts, and moderate ($r = 0.5$) sleep periods between free days following morning shift. Bland-Altman analyses indicated that the MCTQ(Shift) overestimated sleep duration and underestimated mid-sleep, with the largest discrepancies on free days after morning shifts. Night shifts showed the most pronounced outliers. The Norwegian MCTQ(Shift) shows promising validity for assessing sleep habits in shift workers, particularly on workdays. However, reduced accuracy on free days after morning shifts suggests limitations in capturing sleep patterns across all shift types.

Lien vers l'article

Work ability and health-related productivity loss by chronotype: Results from population-based panel study.

Ko H, Cho SS, Kang MY. *Sleep Health*. 2025 Jun 2.

OBJECTIVES: This study aimed to explore the relationship between chronotype and two key occupational health outcomes-work ability and health-related productivity loss-in the general working population of Korea. The research further sought to identify subgroup variations by demographic and occupational factors. METHODS: Data were derived from the Korean Work, Sleep, and Health Study (KWSHS), a nationwide panel study conducted between 2022 and 2024. Chronotype was assessed using the reduced Morningness-Eveningness Questionnaire (rMEQ), categorizing participants as morning, intermediate, or evening types. Work ability and health-related productivity loss were measured using the Work Ability Index (WAI) and the Work Productivity and Activity Impairment Questionnaire (WPAI), respectively. Generalized estimating equation models were employed to estimate odds ratios for poor work ability and mean differences in health-related productivity loss,

adjusting for demographic and occupational factors. RESULTS: Evening chronotypes exhibited significantly higher odds of poor work ability (adjusted odds ratio: 2.291, 95% CI: 1.717-3.058) and greater health-related productivity loss (mean difference: 5.362%, 95% CI: 3.902-6.822) compared to morning types. Intermediate types demonstrated moderately elevated risks. Subgroup analyses revealed that evening-type men, younger workers, and white-collar employees experienced the greatest disparities. Conversely, the impact of chronotype on shift workers was less pronounced. CONCLUSIONS: Chronotype significantly influences work ability and health-related productivity loss, with evening types experiencing the poorest outcomes due to circadian misalignment. These findings suggest the importance of considering chronotype in workplace health interventions. Strategies such as flexible schedules and sleep health programs may mitigate productivity losses and enhance employees' well-being.

Lien vers l'article

Epigenetic markers of adverse lifestyle identified among evening and night shift workers in two UK population-based studies: Generation Scotland and Understanding Society.

Hulls PM, McCartney DL, Bao Y, Walker RM, de Vocht F, Martin RM, et al. *Chronobiol Int*. 2025 May;42(5):561-71.

Epigenetic changes in the form of DNA methylation (DNAm) may act as biological markers of risk factors or adverse health states. In two cohort studies, Generation Scotland (GS) (n = 7,028) and Understanding Society (UKHLS) (n = 1,175), we evaluated associations between evening or night shift work and four lifestyle factors (body mass index, smoking, alcohol, education) through linear regression using both conventionally measured phenotypes and DNA methylation-based scores proxying the phenotypes. DNA methylation-based measures of biological ageing were also generated using six established "epigenetic clocks." Meta-analysis of GS and UKHLS results was conducted using inverse-variance weighted fixed effects. Evening/night shift work was associated with higher BMI (0.79; 95%CI 0.02, 1.56; p = 0.04) and lower education (- 0.18; - 0.30, - 0.07; p = 0.002). There was weak evidence of association between evening/night shift work and DNAm scores for smoking (0.06, - 0.03, 0.15; p = 0.18) and education (- 0.24; - 0.49, 0.01; p = 0.06) in fully adjusted models (adjusted for age, sex, methylation principal components and phenotypic measures). Two of the epigenetic age measures demonstrated higher age acceleration among evening/night shift workers (0.80; 0.42, 1.18; p < 0.001 for GrimAge and 0.46; 0.00, 0.92; p = 0.05 for PhenoAge). In over 8,000 participants from two cohort studies, evening/night shift work was associated with both phenotypic and DNA methylation-based measures of higher BMI and lower education. DNAm predictors of smoking and ageing were also related to evening/night shift work. Epigenetic measures may provide insights into the health and lifestyle profiles of night shift workers.

Lien vers l'article

The roles of lifestyle factors and genetic risk in the association between night shift work and cholelithiasis: a prospective cohort study.

He W, Mi N, Jin K, Jin B, Zhong R, Liu Z, et al. *Front Endocrinol (Lausanne)*. 2025;16:1573203.

BACKGROUND: Night shift work has been associated with adverse health outcomes. Whether night shift work is associated with cholelithiasis remains uncertain, and the roles of genetic risk and lifestyle factors in cholelithiasis risk are unclear. METHODS: We conducted a prospective analysis of 219,810 UK Biobank participants. Cox proportional hazards models were used to estimate the association between night shift work and incident cholelithiasis. Polygenic risk score analyses and causal mediation analyses were performed to investigate the roles of the genetic risk and lifestyle factors in cholelithiasis risk. RESULTS: Compared with day workers, the HR and 95% CI of cholelithiasis was 1.09 (1.01-1.17) for individuals with rarely/some night shifts and 1.18 (1.04-1.35) for those with usual/permanent night

shifts. Additionally, those with a higher frequency of night shifts and a longer length of each night shift were associated with an increased risk of cholelithiasis. Notably, individuals with usual/permanent night shifts and high genetic risk exhibited the highest risk of cholelithiasis (HR: 1.48, 95% CI: 1.21-1.81). Mediation analysis indicated that a substantial portion (24.64%) of the association was mediated by BMI, followed by unhealthy alcohol intake (4.50%) and sedentary time (1.82%). CONCLUSIONS: Night shift work is associated with an increased risk of cholelithiasis, with this relationship being largely mediated by lifestyle factors. Reducing the frequency and length of night shifts may help mitigate the incidence of cholelithiasis among night shift workers, particularly for those with heightened genetic susceptibility.

Lien vers l'article

Chronotype, Life's Essential 8, and risk of cardiovascular disease: a prospective cohort study in UK Biobank.

Kianersi S, Potts K, Wang H, Sofer T, Noordam R, Rutter M, et al. *Res Sq*. 2025 Jun 3.

INTRODUCTION: Individuals with an evening chronotype often experience circadian misalignment, which may disrupt health behaviors and circadian regulation of cardiometabolic functions such as blood pressure. However, the associations of chronotype with modifiable cardiovascular disease (CVD) risk factors and incident CVD are not fully understood. METHODS: We conducted a prospective study in 322,777 UK Biobank participants aged 39-74 years who were free of known CVD (2006-2010). Chronotype was self-reported using a single representative question from the Morningness-Eveningness Questionnaire. The Life's Essential 8 (LE8) score was calculated based on 8 modifiable CVD risk factors, and ranged from 0 to 100 with higher scores indicating better cardiovascular health. Incident CVD was defined as first myocardial infarction (MI) or stroke leading to hospitalization or death, identified via validated algorithms. Cox proportional hazards models estimated the association between chronotype and CVD risk, adjusted for socio-demographics, shift work, and family history of CVD. Under the causal mediation framework, we evaluated the role of LE8 in the association between chronotype and CVD risk by decomposing the total effect into natural direct effect (i.e., independent of LE8) and natural indirect effect (i.e., mediated by LE8; NIE). RESULTS: Participants (mean age: 57) with a "definite evening" chronotype (8% of the total sample) were 79% more likely to have an overall poor LE8 score (<50 points) compared to "intermediate" type (prevalence ratio 95% CI: 1.72 - 1.85). Over a median of 13.2 years of follow-up, there were 17,584 incident CVD events (11,091 MI; 7,214 stroke). The hazard ratio (HR) for total CVD was 1.03 (0.99 - 1.07) for the "definite morning" and 1.16 (1.10 - 1.22) for "definite evening" compared with "intermediate" chronotype (P-trend: 0.10). LE8 explained 74% of the association between evening chronotype and CVD (NIE comparing "definite evening" to "intermediate: 1.11; 95% CI: 1.09, 1.13). Findings were similar when MI and stroke were examined individually. CONCLUSIONS: Compared to intermediate chronotype, evening chronotype was associated with modestly higher CVD risk, which was mainly explained by overall poorer cardiovascular health. These results suggest that individuals with evening chronotype may particularly benefit from interventions targeting CVD risk factors.

Lien vers l'article

Multi-Wearable Approach for Monitoring Diurnal Light Exposure and Body Rhythms in Nightshift Workers.

Hartmeyer SL, Phillips NE, Jassil FC, Joris C, Dibner C, Collet TH, et al. *Acta Physiol (Oxf)*. 2025 Jul;241(7):e70069.

AIM: As our understanding of light's impact on human health grows, studies examining light exposure and related health outcomes in everyday settings are increasingly important, particularly in high-risk groups like nightshift workers. METHODS: In this observational study, we monitored personal light

exposure and physiological functions in a large cohort of healthcare nightshift workers using a spectrally resolved light dosimeter and wearable body temperature, actigraphy, and electrocardiography sensors. RESULTS: Our findings revealed a common occurrence of unfavorable light conditions during both shift types. During nightshift work, participants frequently experienced exposure to biologically potent cool-white LED lighting. On dayshifts, melanopic light levels often failed to meet recommended guidelines, with daylight as the primary source of bright light levels. Sleep duration, but not quality, significantly varied between shifts, with longer sleep before the first nightshift but shorter sleep on subsequent nights. Daytime and nighttime napping helped compensate for reduced sleep on nightshifts. Limited associations between light exposure and sleep were found, partially contradicting existing knowledge. Diurnal physiological and activity rhythms followed the change from day-active to night-active schedules; however, the change in physiological rhythms appeared partly dissociated from that of activity, suggesting a circadian modulation. Moreover, physiological functions exhibited bi-directional phase-shifts across consecutive nightshifts, which may have been mediated by differences in daytime light exposure before the first nightshift. CONCLUSION: By employing a multi-wearable approach including recent sensors, we provide new insights into the lighting environments experienced by nightshift workers and the potential impact of nightshift work and light exposure on endogenous circadian rhythms.

Lien vers l'article

Role of the period family in mediating the interplay between circadian disruption and cancer (Review).

Gu P, Xu W, Fan X, Gao Q, Wei Y, Zhang H, et al. *Oncol Lett*. 2025 Aug;30(2):391.

The circadian clock, which is based on 24-h cyclical changes in the external environment, can be detected in almost all cells and regulates several vital physiological processes. The circadian rhythm is disrupted in numerous individuals for several reasons, such as shift work, chronic jet lag, high fat intake and abnormal sleep patterns. Disruption of the circadian rhythm can increase the risk of cancer, affecting its development and treatment. The Period gene family is a core component of the circadian rhythm cycle, and the mechanisms by which its changes affect cancer progression are unclear. The present study reviewed the current research on the intricate relationship between disruption of the circadian clock, particularly focusing on the Period gene family, and its effect on the occurrence, progression and therapeutic approaches for cancer.

Lien vers l'article

Chrononutrition: Potential, Challenges, and Application in Managing Obesity.

Fuad SA, Ginting RP, Lee MW. *Int J Mol Sci*. 2025 May 26;26(11).

The circadian clock orchestrates nearly every aspect of physiology, aligning metabolic processes with environmental cues, such as light and food intake. While the central pacemaker in the suprachiasmatic nucleus synchronizes peripheral clocks across key metabolic tissue, feeding behavior emerges as the dominant cue for peripheral clock alignment. This interaction reveals a crucial link between circadian biology and metabolism. Disruption of these processes, whether from shift work, irregular eating patterns or lifestyle misalignment, has been strongly associated with metabolic disorders, including obesity, insulin resistance and cardiometabolic diseases. Within the field of chrononutrition, strategies, such as time-restricted feeding (TRF), have gained attention for their potential to restore circadian alignment and improve metabolic health. However, translational gaps persist, as most mechanistic insights are derived from nocturnal murine models, limiting their applicability to diurnal human physiology. Moreover, human studies are confounded by interindividual variability in chronotype, behavioral patterns, and dietary compliance. This review explores the molecular underpinnings of zeitgeber signals and critically assesses the translational barriers to implementing

chrononutrition across species. By integrating insights from both preclinical and clinical research, we aim to refine the potential of circadian-based dietary interventions for metabolic disease prevention and personalized nutrition.

Lien vers l'article

The relationship between circadian type and physical activity as predictors of cognitive performance during simulated nightshifts: A randomised controlled trial.

Easton D, Gupta C, Vincent G, Vandelanotte C, Duncan M, Tucker P, et al. *Chronobiol Int*. 2025 Jun;42(6):736-54.

Nightshift is associated with impaired cognitive performance on many tasks, yet performance is also moderated by individual differences. We investigated the effect of circadian type (two factors: flexible-rigid, and languid-vigour), and the efficacy of a novel countermeasure, breaking up sitting with light-intensity physical activity, in the context of nightshift performance. Thirty-three healthy adults (age M ± SD: 24.3 ± 4.6 y; 19 females) participated in a sleep laboratory study over five consecutive simulated nightshifts (2200-0600 h). Sleep opportunities occurred at 0800-1700 h. Participants were randomised to a sedentary (SIT; n = 14), or "breaking-up" sitting (BREAK; n = 19) condition. BREAK participants completed 3 min of light-intensity walking every 30 min at 3.2 km/h, while SIT participants remained seated. Every 2 h during nightshift, participants completed the Psychomotor Vigilance Task (mean RRT), Stroop Task, and Digit Symbol Substitution Task. Participants completed the revised Circadian Type Inventory which categorises individuals on a rigid-flexible scale and a languid-vigorous scale (rigid; n = 12, flexible; n = 11; languid; n = 11, vigorous n = 13). Linear mixed models showed a significant 3-way interaction between Nightshifts (1-5), Condition (SIT, BREAK), and flexibility-rigidity for mean RRT ($p = 0.03$) only. Flexible types in the BREAK condition had better performance than rigid BREAK, rigid SIT, and flexible SIT over five nights, with performance marginally worse on the first night for all participants apart from rigid SIT. Linear mixed models showed a significant 2-way interaction between Nightshifts (1-5), and flexibility-rigidity for percentage accuracy on the Stroop task, and a significant 2-way interaction between Nightshifts (1-5), and languid-vigour for response time on the Stroop task. Accuracy worsened for rigid types, while response time on the Stroop task improved for languid types over five nights. No other significant differences were found. Breaking up sitting with light-intensity physical activity maintained sustained attention for flexible circadian types across all five experimental nightshifts. Both rigidity and languidity moderated trends in performance, though whether these differences have meaningful real-world implications must be explored further. Our results indicate that circadian type classifications should be accounted for in breaking up sitting interventions overnight.

Lien vers l'article

Lower slow wave sleep and rapid eye movement sleep are associated with brain atrophy of Alzheimer's disease-vulnerable regions.

Cho G, Mecca AP, Buxton OM, Liu X, Miner B. *J Clin Sleep Med*. 2025 Jul 1;21(7):1165-73.

STUDY OBJECTIVES: Sleep deficiency is associated with Alzheimer's disease (AD) pathogenesis. We examined the association of sleep architecture with anatomical features observed in AD: (1) atrophy of hippocampus, entorhinal, inferior parietal, parahippocampal, precuneus, and cuneus regions ("AD-vulnerable regions") and (2) cerebral microbleeds (CMBs). METHODS: In 270 participants of the Atherosclerosis Risk in the Communities Study, we examined the association of baseline sleep architecture with anatomical features identified on brain magnetic resonance imaging 13-17 years later. Sleep architecture was quantified as the proportion of slow wave sleep (SWS), proportion of rapid eye movement (REM) sleep, and arousals index using polysomnography. Outcomes included (1) volumetric measurements of each AD-vulnerable region and (2) the presence of any CMBs and that of lobar CMBs, which are more specifically associated with AD. We analyzed the association of each sleep

predictor with each magnetic resonance imaging outcome, adjusting for covariates. RESULTS: Median age was 61, 53% were female, 100% were White, and 47% had 16+ years of education. Median times in SWS and REM were 17.4% and 21.5%, respectively. Having less SWS was associated with smaller volumes of the inferior parietal region (β = -44.18 mm(3) [95% confidence interval = -76.62, -11.74] per -1 percentage point of SWS) and cuneus (β = -11.98 [= -20.92, -3.04] mm(3) per -1 percentage point). Having less REM was associated with smaller volumes of the inferior parietal region (β = -75.54 [-129.36, -21.72] mm(3) per 1 percentage point of REM) and precuneus (β = -31.92 [-63.78, -0.06] mm(3) per 1 percentage point). After Bonferroni adjustments, lower SWS and REM were associated with significantly smaller inferior parietal region volumes. Arousal index was not associated with the volumes of AD-vulnerable regions. None of the sleep architecture variables were associated with CMBs or lobar CMBs. CONCLUSIONS: Sleep deficiency is associated with the atrophy of the inferior parietal region, which is observed in early AD. Sleep architecture may be a modifiable risk factor for AD. CITATION: Cho G, Mecca AP, Buxton OM, Liu X, Miner B. Lower slow wave sleep and rapid eye movement sleep are associated with brain atrophy of Alzheimer's disease-vulnerable regions. J Clin Sleep Med. 2025;21(7):1165-1173.

Lien vers l'article

Impact of cold exposure on shift working seafood handlers in Northern Norway: a comparative analysis across work shifts.

Chau PKT, Schjølberg T, Eriksen MB, Moe AG, Graff P, Haugen F. *J Occup Med Toxicol*. 2025 Jun 23;20(1):22.

OBJECTIVE: This study aimed to investigate the impact of occupational thermal exposure on shift workers, specifically whether cold exposure elicits distinct physiological responses and thermoregulatory recovery across different tasks and shift types. METHODS: Observational study at two factories processing prawns in Northern Norway in which 32 shift-working seafood handlers with different task responsibilities were followed for a single shift (morning, evening, night). The participants answered questionnaires regarding thermal exposures at work and related symptoms; these were compared to answers from 12 administration workers. Personal thermal loggers measured the range of temperature exposures associated with four different seafood handler work tasks. Pre- and post-shift plasma levels of FGF21, GDF15 and cytokines were analysed using immunoassays. As a proxy for thermoregulatory response across different shift types, hand temperature was measured repeatedly before and after breaks using a thermal imaging camera. RESULTS: Most seafood handlers reported subjective impact from cold exposure. Cold working conditions of ≤ 10 ℃ were measured across all shifts and three different seafood handling tasks. The morning shift-seafood handlers displayed lower plasma FGF21 post-shift vs. pre-shift; the evening and night shifts showed no difference. GDF15 levels remained unchanged regardless of shift types but were positively correlated with age. Night shift was associated with increased plasma IL6 post-shift vs. pre-shift. Thermoregulatory responses showed a positive linear relationship with break duration but did not differ between shifts. CONCLUSIONS: The findings suggest that exposure levels are closely linked to specific tasks and shifts, with thermoregulatory responses varying by task type and time of day.

Lien vers l'article

Association between night shift work and markers of metabolism, cardiovascular and immune system in a population-based German cohort.

Bittner N, Korf HW, Moebus S, Schmidt B, Caspers S. *Geroscience*. 2025 Jun;47(3):5141-55.

In humans, night shift work is a major reason for chronodisruption, may affect health and increase the risk of a metabolic syndrome, but results obtained so far are ambiguous. In this population-based, cross-sectional study, PRESENT and FORMER shift workers were compared to age- and sex-matched

controls, who never worked in shift with regard to body mass index, waist-hip-ratio total, high-density lipoprotein and low-density lipoprotein, cholesterol and C-reactive protein. Moreover, association with sex, length of shift work and medication were investigated. The present results do not support the hypothesis that night shift work per se is associated to an increased risk of metabolic syndrome, and cardiovascular and immune malfunctions: no differences were found in mean anthropomteric and blood values between present or former shift workers and respective matched controls. When analyzing the proportion of participants showing values beyond the clinically relevant cut-offs, no general effect of shift work was observed, but the data may suggest an interaction between shift work and sex. These divergent results may be due to differences in the socio-economic status, the health care system and the shift schedule. All these parameters need to be considered in future studies addressing the impact of night shiftwork on human health.

Lien vers l'article

Deciphering the circadian rhythm in colorectal cancer: a bibliometric analysis of research landscape and trends.

Chen L, Wang Z, Xiao N, Liu J, Tao Y, Zhang S. *Front Oncol*. 2025;15:1591257.

INTRODUCTION: Colorectal cancer (CRC) is a leading cause of global cancer mortality, increasingly linked to circadian rhythm disruption-a critical yet underexplored driver of tumorigenesis. METHODS: This bibliometric analysis evaluates 374 publications from the Web of Science Core Collection (1999-2024) using VOSviewer, CiteSpace, and Bibliometrix to map global research trends. RESULTS: Annual publications surged post-2016, peaking in 2021, reflecting intensified focus on circadian-CRC interactions. The United States led in output (122 publications, H-index 46), followed by France (76 publications) and China (49 publications), with the Netherlands achieving the highest citation impact (88.06 citations per publication). French institutions, notably Assistance Publique-Hôpitaux de Paris (APHP), dominated translational research, while foundational studies by Levi et al. on chronomodulated chemotherapy remained pivotal. Keyword analysis identified "circadian rhythm" and "colorectal cancer" as core themes, with "inflammation" and "inflammatory bowel disease" showing significant citation bursts post-2014. Co-citation networks bridged molecular chronobiology (Science, PNAS) and clinical oncology (Cancer Research), though mechanistic studies prioritized clock genes (e.g., BMAL1, PER2) over environmental disruptors. Clinically, aligning chemotherapy with circadian rhythms reduced severe toxicity by 40% in metastatic CRC, yet gaps persist in biomarker validation and monitoring tools. Epidemiologically, shift workers faced a 20-30% elevated CRC risk, correlating with PER2 silencing in 45% of tumors and NF-κB/STAT3 pathway activation. DISCUSSION: Future research should integrate AI-driven circadian profiling, global collaboration, and trials targeting circadian-immune-metabolic axes to advance precision chronotherapy. This study underscores circadian biology as a cornerstone of CRC management, advocating strategies that harmonize molecular insights with ecological relevance to improve outcomes.

Lien vers l'article

Circadian Rhythms in Gastroenterology: The Biological Clock's Impact on Gut Health.

Bishehsari F, Post Z, Swanson GR, Keshavarzian A. *Gastroenterology*. 2025 Jun 28.

Chronic gastrointestinal (GI) diseases, including functional, inflammatory, and neoplastic conditions, are rising globally, partly due to modern lifestyles. The circadian rhythm, regulated by the central clock in the hypothalamus and synchronized with peripheral clocks in the gastrointestinal organs, orchestrates GI functions in response to environmental cycles. This clock is influenced by cues such as light, sleep, and eating times. The circadian machinery prepares the host to cope with environmental conditions to adjust cellular and organ function accordingly. Modern behaviors-like nighttime light exposure, travel across time zones, shift work, mistimed eating, and social jet lag-disrupt the circadian

clock, affecting GI processes such as digestion, absorption, motility, intestinal barrier function, immune function, and the microbiome, promoting not only GI pathology, but also systemic inflammatory and metabolic disorders. This review summarizes the circadian rhythm's role in normal GI function, examines the consequences of circadian disruption in the GI tract, and discusses circadian-based therapeutic interventions. These interventions aim to realign the circadian clock with external cues or optimize medication timing according to biological rhythms. Understanding the role of the circadian clock in GI conditions can provide preventive and therapeutic opportunities to reduce the burden of GI diseases.

Lien vers l'article

Peripheral clocks and systemic zeitgeber interactions: from molecular mechanisms to circadian precision medicine.

Bautista J, Ojeda-Mosquera S, Ordóñez-Lozada D, López-Cortés A. *Front Endocrinol (Lausanne)*. 2025;16:1606242.

Circadian rhythms orchestrate nearly every aspect of human physiology through a hierarchical network of clocks. While the suprachiasmatic nucleus (SCN) serves as the central pacemaker, peripheral clocks within the brain, heart, liver, gut, pancreas, adipose tissue, adrenal glands, lungs, and skeletal muscle independently regulate organ-specific functions. These autonomous oscillators, governed by transcriptional-translational feedback loops of core clock genes, align with environmental and physiological zeitgebers such as light, feeding, temperature, and hormones. Disruption of this temporal organization-through shift work, genetic alterations, or lifestyle factors-drives systemic misalignment, contributing to metabolic disease, cardiovascular dysfunction, neurodegeneration, cancer, and immune imbalance. This review explores the molecular mechanisms and physiological roles of peripheral clocks across organ systems, emphasizing their interplay with the SCN and zeitgebers. We also highlight emerging chronotherapeutic strategies that exploit circadian biology to optimize treatment outcomes. Understanding inter-organ circadian communication is key to unlocking personalized interventions and restoring systemic rhythmicity for health.

Lien vers l'article

Chrononutrition and Gut Health: Exploring the Relationship Between Meal Timing and the Gut Microbiome.

Bajaj P, Sharma M. *Curr Nutr Rep*. 2025 Jun 9;14(1):79.

PURPOSE OF REVIEW: This review explores the relationship between circadian rhythms and meal timing, or chrononutrition, and how it affects gut health. Since the gut microbiota plays a critical role in immunological response, metabolic control, and digestion, it is critical to comprehend how circadian misalignment impacts gut microbial equilibrium. This review examines research from the last ten years to assess the effects of circadian rhythm disturbances and meal time variations on the composition of the gut microbiota, the integrity of the gut barrier, and metabolic consequences. RECENT FINDINGS: Using search terms like "Chrononutrition AND Gut health," "Circadian Rhythm AND Meal timing," and similar combinations, 31 peer-reviewed publications from PubMed, Google Scholar, and Scopus were included. There is evidence that circadian misalignment, which can be brought on by shift work, irregular eating habits, or social jet lag, affects lipid metabolism, short-chain fatty acid (SCFA) synthesis, and gut microbial rhythms. According to research, microbial diversity and function are enhanced by early-time-restricted feeding (eTRF), which synchronizes with circadian cycles. Changes in tight junction proteins have been linked to irregular meal timing, which increases intestinal permeability and inflammation. Additionally, new research indicates a bidirectional relationship in which the gut bacteria might affect the central and peripheral circadian clocks. Chrononutrition is a promising non-pharmacological approach to preventing metabolic dysregulation and promoting gut health.

Consistently timing meals, especially early-time-restricted feeding, can help maintain microbial balance, improve gut barrier function, and lower the risk of chronic diseases by bringing food intake into alignment with circadian cycles. The need for integrated approaches to food and lifestyle changes in future research and clinical practice is highlighted by the bidirectional relationship between the gut microbiota and circadian systems.

Lien vers l'article

Sleep deprivation as a risk factor for cortical gray matter reduction in new medical residents.

Alvarez-Ornelas NA, Macías-Cervantes HE, Rodríguez-Villaseñor P, Sánchez-Figueroa O, Flores-Rodríguez R, García-Cisneros ZG, et al. *J Neuroradiol*. 2025 Jun;52(4):101357.

BACKGROUND AND PURPOSE: Sleep is an essential physiological condition for the proper functioning of humans, both physiologically, cognitively, and psychologically. Sleep deprivation leads to a loss of psychomotor skills in humans. It is important to evaluate the structural changes experienced by medical residents who are sleep-deprived due to extensive work shifts, including night shifts, assigned during their training program. Therefore, the main outcome was to evaluate the structural changes in the cortical gray matter and the hippocampus assessed by brain magnetic resonance imaging (MRI) in newly admitted medical residents four months after the start of the medical specialty. MATERIAL AND METHODS: Forty-one newly admitted medical residents were enrolled, and an initial questionnaire was administered to assess sleep quality. All participants underwent a brain MRI study, utilizing an advanced MRI sequence: a 3D inversion recovery (IR)-prepped fast spoiled gradient-recalled (SPGR) high-resolution T1-weighted sequence. The images were then anonymized and reformatted, and volumetric analyses of gray matter and hippocampus were performed using an open-access platform for MRI brain analysis (volBrain). This process was repeated four months later with the acquisition of a new brain MRI study for each participant. RESULTS: For gray matter volume, a baseline value of 728.04 ± 63.95 cm^3 and a final value of 715.11 ± 59.38 cm^3 were found ($p < 0.01$), and the frontal lobe showed the greatest reduction, with an initial value of 181.92 ± 15.58 cm(3) and a final volume of 176.45 ± 17.35 cm(3) ($p = <0.001$). We found an OR of 1.52 (95 % CI 0.93-4.14, $p = 0.01$) between working night shifts and gray matter reduction. CONCLUSIONS: The results of this study show a statistically significant reduction in gray matter volume in first-year residents after four months of shift work, with the greatest reduction in the frontal lobe.

Lien vers l'article

Effect of shift work on cerebral cortical activation and functional connectivity in nurses-implications for policy maker: a fNIRS observational study.

An R, Li C, Ai S, Wu Y, Wang S, Luo X, et al. *BMC Nurs*. 2025 Jul 1;24(1):696.

BACKGROUND: Working in shifts can disrupt circadian rhythm and reduce sleep duration, which have a detrimental effect on cognitive function. Shift work is often a special requirement for nurses to provide continuous service for patients. The Stroop task is a classic method of executive function (EF) applied in neuroimaging researches. Functional near-infrared spectroscopy (fNIRS) has created new opportunities for investigating the hemodynamics of cerebral activated regions during executive function. However, there has been no study exploring cerebral hemodynamics changes related to shift work by fNIRS in nurses during performing a Stroop paradigm. The purpose of our study was to investigate the effects of shift work on fNIRS-based cerebral functions during the Stroop task among nurses in a real clinical environment. METHODS: Nurses registered in the Department of Neurology were eligible and consecutively included if they were simultaneously responsible for the day, evening and night shifts on the shift work schedule. A multi-channel fNIRS imaging system (NirScan, Danyang Huichuang Medical Equipment Co. Ltd, China) was used to acquire each participant's cerebral hemodynamic activities during performance of the Stroop task, which was performed for each subject

separately before and after three working shifts. RESULTS: Eighteen nurses with certification were included in our study. Cerebral cortical activation and functional connectivity were significantly changed during Stroop test after day-shift (all $p < 0.05$, FDR corrected), indicating a leading role of left PFC. Further, we identified the reaction time under incongruent task before day shift, was positively correlated with LPFC ($r = 0.507$, $p = 0.038$), RPFC ($r = 0.547$, $p = 0.023$) and BPFC activation ($r = 0.512$, $p = 0.036$). CONCLUSIONS: Our study further supported fNIRS as a useful functional imaging technique for monitoring brain activity in healthcare providers. Also, brain activation and functional connectivity during Stroop task consistently showed that working in day shift was related to decreased brain hemodynamic activities in nurses. Further, our findings would be helpful for leadership in clinical management on decision-making about arrangements for shift work.

Lien vers l'article

Correction: Effect of shift work on cerebral cortical activation and functional connectivity in nurses-implications for policy maker: a fNIRS observational study.

An R, Li C, Ai S, Wu Y, Wang S, Luo X, et al. *BMC Nurs*. 2025 Jul 30;24(1):999.

Lien vers l'article

Crosstalk between Circadian Rhythm Dysregulation and Tumorigenesis, Tumor Metabolism and Tumor Immune Response.

Zhu Y, Zheng Y, Dai R, Gu X. *Aging Dis*. 2024 Jun 7;16(4):2073-99.

Circadian rhythm is a self-regulating 24-hour system that synchronizes with the day and night cycle in organisms. The regulation of this system is controlled by clock genes, which function to harmoniously express molecular levels that facilitate the orderly coordination of various cellular processes, such as sleep, metabolism, endocrine function, cell proliferation and immunity. The root cause of tumorigenesis is that the body loses its normal regulation of cell growth at the genetic level. Long-term disruptions in circadian rhythms caused by factors such as shift work, jet lag, and unstable sleep patterns can impact cellular health, leading to various health problems, including cancer. Circadian rhythm controls most cellular functions related to cancer progression, which has a significant impact on the ability of immune cells to detect cancer cells and promote their clearance and has crucial implication for future tumor immunotherapy. This article aims to review the crosstalk between dysregulation of circadian rhythm and tumorigenesis, tumor metabolism, and immune response. Additionally, we discuss the role of circadian rhythm disruption in tumor therapy, highlighting its potential to optimize treatment timing and improve therapeutic outcomes.

Lien vers l'article

Conduites addictives

Benzodiazepine Misuse Among Health Care Workers: The Effect of Sleep Disorders on Work Performance.

Roncero C, Bravo-Grande JL, Andrés-Olivera P, Peña M, Treceño C, González-Pelaez P, et al. *J Clin Med*. 2025 Jun 16;14(12).

Background: Benzodiazepines (BZDs), commonly used to treat insomnia and anxiety, are increasingly used in Spain, raising concerns due to their potential for abuse and dependence. This study investigates the use of BZDs and other psychotropic medications among healthcare workers, exploring their prevalence, associated factors, and their relationship with mental health issues following the COVID-19 pandemic. Methods: An anonymous online survey was conducted among healthcare workers at the Salamanca University Healthcare Complex (CAUSA) from March 2023 to January 2024. Of 1121 participants, 685 provided complete responses, which were analysed. Insomnia, anxiety, and depression were assessed using the Insomnia Severity Index (ISI) and Patient Health Questionnaire-4 (PHQ-4). Results: Of the respondents, 23.8% reported using sleep medication, with 27.8% doing so without a prescription. Additionally, 14.7% used medication for depression or anxiety, with only 0.6% without a prescription. Hypnotic medicine use was associated with older age, insomnia, anxiety, depression, psychological or psychiatric treatment, COVID-19 after-effects, and diagnosed sleep disorders. Night-shift work was associated with increased hypnotic medication use in men but not in women. The use of these medications was linked to a reduced quality of life and impaired work performance. Conclusions: The use of BZD and self-medication are prevalent among healthcare professionals, exceeding the rates observed in the general population. These findings highlight the urgent need for targeted interventions to address psychotropic medication use, promote other pharmacological and non-pharmacological alternatives for insomnia, and enhance mental health support for this vulnerable population.

Lien vers l'article

Workaholism among nurses in China: a nationwide cross-sectional survey.

Gao Y, Ye H, Hong S, Bai X, Gan X. *BMC Nurs*. 2025 Jul 1;24(1):676.

BACKGROUND: Anxiety and depression among nursing staff, stemming from difficulties in balancing high-pressure, high-load work with daily life, are on the rise. This phenomenon may be linked to workaholism among clinical nurses, yet the prevalence of workaholism among Chinese nurses remains underreported. OBJECTIVES: To investigate the current state of workaholism among Chinese nurses and identify factors influencing it. METHODS: We distributed study information and a survey link via WeChat to professional nursing networks. The survey included demographic characteristics and the Dutch Work Addiction Scale (DUWAS). Descriptive and comparative analyses were performed, and multiple regression analysis was performed using the workaholism score as the dependent variable. RESULTS: A total of 3,596 Chinese registered nurses participated in the survey. The mean workaholism total score was 29.87 (SD = 4.93), with an average item score of 2.99 (SD = 0.49). Regression analysis revealed that education level (β=0.05), position (β=0.11), professional title (β=0.10), weekly night shifts (β=0.07), and weekly work hours (β=0.15) were positively associated with workaholism. Additionally, compared to nurses without children, those with children (β=0.06) exhibited higher levels of workaholism (all $P < 0.05$). CONCLUSIONS: Chinese nurses exhibit moderate levels of workaholism. Nursing managers can enhance occupational well-being and reduce workaholism by implementing targeted interventions focused on key factors such as educational background, professional title, position, weekly night shift frequency, average weekly working hours, and parental status. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Epigenetic markers of adverse lifestyle identified among evening and night shift workers in two UK population-based studies: Generation Scotland and Understanding Society.

Hulls PM, McCartney DL, Bao Y, Walker RM, de Vocht F, Martin RM, et al. *Chronobiol Int*. 2025 May;42(5):561-71.

Epigenetic changes in the form of DNA methylation (DNAm) may act as biological markers of risk factors or adverse health states. In two cohort studies, Generation Scotland (GS) (n = 7,028) and Understanding Society (UKHLS) (n = 1,175), we evaluated associations between evening or night shift work and four lifestyle factors (body mass index, smoking, alcohol, education) through linear regression using both conventionally measured phenotypes and DNA methylation-based scores proxying the phenotypes. DNA methylation-based measures of biological ageing were also generated using six established "epigenetic clocks." Meta-analysis of GS and UKHLS results was conducted using inverse-variance weighted fixed effects. Evening/night shift work was associated with higher BMI (0.79; 95%CI 0.02, 1.56; p = 0.04) and lower education (- 0.18; - 0.30, - 0.07; p = 0.002). There was weak evidence of association between evening/night shift work and DNAm scores for smoking (0.06, - 0.03, 0.15; p = 0.18) and education (- 0.24; - 0.49, 0.01; p = 0.06) in fully adjusted models (adjusted for age, sex, methylation principal components and phenotypic measures). Two of the epigenetic age measures demonstrated higher age acceleration among evening/night shift workers (0.80; 0.42, 1.18; p < 0.001 for GrimAge and 0.46; 0.00, 0.92; p = 0.05 for PhenoAge). In over 8,000 participants from two cohort studies, evening/night shift work was associated with both phenotypic and DNA methylation-based measures of higher BMI and lower education. DNAm predictors of smoking and ageing were also related to evening/night shift work. Epigenetic measures may provide insights into the health and lifestyle profiles of night shift workers.

Lien vers l'article

The Association Between Work- and Trauma-Related Factors and Risky Alcohol Use Among Health Care Providers: A Systematic Review.

Al-Kayed J, Okoli CC, Williams LB, Ickes MJ, Rayens MK. *J Addict Nurs*. 2025 Apr-Jun 01;36(2):121-43.

BACKGROUND: About 65 million health care providers worldwide are exposed to trauma. Work-related trauma exposure is associated with risky alcohol use, which is correlated with health burdens and productivity impairments among health care providers. Hence, it is important to highlight the association between work-related trauma exposure factors and risky alcohol use among health care providers. OBJECTIVE: In this systematic review, we examined the relationship between work-related factors, trauma exposure, and risky alcohol use among health care providers. METHODS: We conducted a systematic search of PubMed, PsychINFO, and Google Scholar databases including studies published in English up to February 2024. RESULTS: Of 15 retrieved studies, researchers examined the association between work-related factors and risky alcohol use among health care providers in 10 studies. Increased burnout (work stress) was significantly associated with increased risky alcohol use among health care providers. However, there were differences between nurses/midwives and physicians in the relationship of risky alcohol use with work schedules (e.g., night shifts and hours worked). In the remaining five studies, trauma exposure increased risky alcohol use among health care providers. CONCLUSIONS: Evidence suggests that work-related factors and trauma exposure are significantly associated with risky alcohol use among health care providers. However, the extent of the association varies among health care provider specialties. Thus, it is necessary in the future to evaluate the association between work- and trauma-related factors and risky alcohol use among each specialty of health care providers, especially nursing, which represents the largest number of employees in the health sector.

Lien vers l'article

Reproduction

Role of circadian clock in female embryo implantation.

Zhou Y, He X, Chen Z, Gou Y, Zhou K, Huang J, et al. *Front Cell Dev Biol*. 2025;13:1607491.

Accumulating evidence indicates that circadian rhythm disruption can exert an impact on female reproductive function. In the context of female reproduction, the success of embryo implantation is of utmost significance as it is an essential process for female reproduction. Studies have demonstrated that females with disrupted circadian rhythms are more likely to experience embryo implantation failure, which is exemplified by shift workers, nurses, and flight attendants. Therefore, comprehending the circadian rhythm of female embryo implantation is crucial for human reproduction. Herein, we emphasize the mechanism of circadian operation and its regulatory effect on reproductive hormones related to embryo implantation. More importantly, the regulatory role of peripheral clock genes in the process of embryo implantation (endometrial receptivity and decidualization) is highlighted. Finally, melatonin is hypothesized to be a promising treatment for implantation failure caused by circadian rhythm disturbances.

Lien vers l'article

Gestational Weight Gain as a Modifiable Factor for the Impact of Preconceptional Maternal Shift Work on Postpartum Weight Retention.

Wei CF, Chen MH, Lin CC, Tsai MS, Chen YW, Guo YL, et al. *J Occup Environ Med*. 2025 Jun 1;67(6):e424-e30.

OBJECTIVES: This study examined whether gestational weight gain (GWG) mediates the relationship between maternal shift work and postpartum weight retention (PPWR). METHODS: Mothers with singleton births in the Taiwan Birth Cohort Study were assessed for shift work, GWG, and PPWR. Propensity score matching balanced baseline characteristics. We applied multivariable generalized linear regression and causal mediation analysis for the associations, with GWG amount and excessive GWG as mediators. RESULTS: Shift work before pregnancy was associated with higher GWG (0.55 kg, 95% confidence interval: 0.36-0.75) and increased odds of excessive GWG (adjusted OR: 1.18, 95% confidence interval: 1.08-1.29). Excessive GWG mediated the relationship between shift work and PPWR, with shift workers retaining 0.37 kg more at 6 months postpartum. CONCLUSIONS: Maternal shift work before pregnancy increases GWG, contributing to PPWR. Managing GWG is crucial to reduce shift work-related PPWR.

Lien vers l'article

Association between shift/night work and irregular periods and period pain among two cohorts of Australian women 16 years apart: findings from the Australian longitudinal study on women's health.

Alemu BW, Waller M, Tooth LR. *Int Arch Occup Environ Health*. 2025 Jun 17.

PURPOSE: To examine the associations between shift or night work and irregular periods and period pain among two cohorts of Australian women, using data collected 16 years apart. METHODS: We used data from the 1989-95 (n = 6,767) and 1973-78 (n = 7,527) cohorts from the Australian Longitudinal Study on Women's Health, when participants were aged 24-30 years. Logistic regression models were used to assess the association between night or shift work and severe period pain and irregular periods, and to compare them to non-shift or night workers. RESULTS: Women from the 1989-95 cohort who did night work reported higher odds of having experienced irregular periods (AOR = 1.28, 95% CI: 1.03, 1.59) compared to those who undertook shift work. However, there was no association between night work and severe period pain (AOR = 1.10, 95% CI: 0.86, 1.41). Among women in the

1973-78 cohort, neither severe period pain (AOR = 1.20, 95% CI: 0.82, 1.76) nor irregular periods (AOR = 1.38, 95% CI: 0.92, 2.06) were associated with night work. Across both cohorts, no associations were found between shift or night work and irregular or severe period pain when comparing shift or night workers combined to non-shift or night workers. CONCLUSIONS: Night workers reported higher odds of irregular periods compared to shift workers in the 1989-95 cohort; however, no consistent association was found with severe period pain. Future research should investigate whether this association is causal. Supportive workplace practices may benefit night workers experiencing irregular periods.

Lien vers l'article

Correction: Association between shift/night work and irregular periods and period pain among two cohorts of Australian women 16 years apart: findings from the Australian longitudinal study on women's health.

Wassihun B, Waller AM, Tooth LR. *Int Arch Occup Environ Health*. 2025 Jul 3.

Lien vers l'article

Long working hours related to elevated psychological distress among United States pregnant workers: findings from the National Health Interview Survey.

Guardiano M, Xia T, Chen L, Li J. *J Psychosom Obstet Gynaecol*. 2025 Dec;46(1):2521780.

Long working hours and psychological distress have each been related to adverse maternal health and birth outcomes. Understanding the potential psychological health impacts of long working hours among pregnant workers may support the implementation of maternity work protections in the United States (U.S.). This cross-sectional study among a weighted sample of 3637 pregnant workers from the U.S. population-based National Health Interview Survey (NHIS) 1997-2018 aimed to examine the association of working hours with psychological distress. Multivariable linear regression models analyzed associations between categories of weekly working hours and continuous scores of psychological distress measured by the Kessler 6 (K6) scale, while accounting for demographic, socioeconomic, behavior and health characteristics. In the fully adjusted model, compared to the standard workweek of 35-40 h/week, working ≥49 h/week was associated with higher psychological distress [β (SE): 0.59 (0.21); p = .0058]. This initial evidence connecting excessive working hours with increased psychological distress among a U.S. sample of pregnant women supports clinical practices in prenatal assessments of occupational risk factors, and the provision of work-related resources and work accommodations. Future research is warranted to investigate potential occupational effects on maternal mental health throughout the course of pregnancy and postpartum using cohort studies.

Lien vers l'article

The association between sleep and fecundability: a Danish preconception cohort study.

Christensen MH, Mikkelsen EM, Wise LA, Hatch EE, Laursen ASD. *Eur J Public Health*. 2025 Jun 1;35(3):512-20.

We estimated the effects of sleep duration, trouble sleeping, and job time (day, evening, shift, and night work) on fecundability, the per-cycle probability of conception. We analysed data from a preconception cohort study of 10 475 Danish females aged 18-45 years attempting to conceive. On baseline questionnaires, females reported on sleep duration (hours/day), trouble sleeping (never, sometimes, approx. 50% of the time, most of the time), and job time. Pregnancy status was ascertained from follow-up questionnaires completed every 8 weeks for up to 12 months. We used proportional probabilities regression models to estimate fecundability ratios (FRs), adjusted for potential

confounders. Compared with 8 h/day of sleep, FRs were 0.94 for ≤6 h/day (95% CI, 0.83-1.08), 0.97 for 7 h/day (95% CI, 0.89-1.06), and 0.96 for ≥9 h/day (95% CI, 0.81-1.13). Compared with no trouble sleeping, FRs were 1.00 (95% CI, 0.94-1.06) for trouble sleeping sometimes, 0.94 (95% CI, 0.86-1.03) for trouble sleeping approx. 50% of the time, and 0.95 (95% CI, 0.82-1.10) for trouble sleeping most of the time. Relative to day work, FRs were 1.12 for shift work (95% CI, 1.04-1.20), 0.77 for night work (95% CI, 0.49-1.22) and 1.10 for evening work (95% CI, 0.91-1.33). Self-reported sleep duration and trouble sleeping were not appreciably associated with fecundability. Shift work was associated with a slightly higher fecundability, while night work was associated with slightly lower fecundability, although associations were imprecise. Potential limitations include misclassification of sleep and residual or unmeasured confounding.

Lien vers l'article

The ticking clock sets the pace for female fertility.

Nied E, Simonneaux M, Simonneaux V. *Ann Endocrinol (Paris)*. 2025 Jun;86(3):101785.

At a time when an increasing number of men and women face fertility issues, it is necessary to understand the basic mechanisms involved in mammalian reproductive activity in order to propose adapted therapeutic tools. This review describes how endogenous circadian clocks take part in the timing of reproductive cycles in female mammals and, consequently, how exposure to circadian disruption may impair female fertility. In female mammals, the master circadian clock, located in the hypothalamic suprachiasmatic nuclei (SCN), uses a vasopressinergic output to knock on preoptic kisspeptin (Kp) neurons each day at the onset of the active period. Kp is a potent activator of neurons producing the gonadotropin-releasing hormone (GnRH) controlling the release of the pituitary gonadotropins luteinizing (LH) and follicle-stimulating (FSH) hormones, which in turn promote ovarian gameto- and steroido-genesis. Estradiol, produced as oocytes mature, exerts positive feedback on Kp neurons. This dual control of Kp neuronal activity by the clock-driven vasopressin output and the elevated circulating estradiol allows a large increase in GnRH-induced LH release at the onset of the waking period, at the end of the follicular phase, triggering the release of mature oocytes. Additionally, different parts of the reproductive axis also host secondary circadian clocks that participate in the daily and ovarian regulation of female reproductive cycles. Different experiments revealed the functional significance of the circadian regulation of female reproduction. Indeed, exposure of female rodents to different protocols of circadian disruption impairs estrous cycle robustness, LH surge timing, and gestational success. Additionally, epidemiological studies indicate that women working non-standard schedules face increased risks of reproductive issues. Therefore, when women seek medical assistance for infertility, lifestyle factors, including work schedule organization, should be assessed. Chronotherapeutic interventions could then be considered to enhance the robustness of female reproductive cycles and, as a result, improve their reproductive health.

Lien vers l'article

Polyexposition

Characterizing full-shift worker exposures to VOCs in small-sized auto repair shops in the Tucson, Arizona, USA metropolitan area.

Lothrop N, Gutenkunst S, Fimbres J, Quijada C, Chaires M, Cortez I, et al. *Sci Rep*. 2025 Jul 1;15(1):20382.

Auto repair shops employ 1% of the US labor force. These workers are constantly exposed to volatile organic compounds (VOCs), which have known and often irreversible health effects, yet exposure studies are sparse. Our goal was to assess what exposure factors were related to total personal and shop-level specific VOC exposures for entire shifts in marginalized, predominantly Spanish-speaking workers in auto repair shops. Full-shift, real-time worker exposure factors like activities and ventilation conditions were recorded, along with personal total VOCs and shop-level specific VOC samples. The relationship of total VOCs with activity and ventilation, along with shift and shop, was analyzed using linear mixed effects modeling. Specific VOC concentrations were combined into hazard scores for potential health risks based on EPA inhalation reference or reference dose. Personal exposures were characterized by episodic peaks, with the highest peaks during spraying brake cleaner and painting activities in 22/35 shifts. Shift within shop and shop accounted for about half the variation in total VOC exposures to workers (35% and 15%, respectively), while activity and ventilation explained almost none. Acetone and toluene were detected in all samples. While worker exposure patterns were characterized by infrequent but very high peak exposures to total VOCs related to aerosolization activities, activities were only slightly predictive of VOC exposure overall. Instead, shift within shop and shop explained just half the variability. While additional study on exposure factors is needed, this should be done with a focus on interventions tailored to worker and shop.

Lien vers l'article

Pathologies cardiovasculaires

The metabolic penalty of time: Nutritional vulnerability and cardiovascular risk in the shift work economy.

Yang A. *Clin Nutr ESPEN*. 2025 Aug;68:814-5.

Lien vers l'article

Reply - Letter to the Editor: "The metabolic Penalty of time: Nutritional vulnerability and cardiovascular risk in the shift work economy".

Menezes-Júnior LAA. *Clin Nutr ESPEN*. 2025 Aug;68:816.

Lien vers l'article

Work as a social determinant of health on cardiovascular and musculoskeletal diseases: A literature review.

Wells A, Previtera M, Markey M, Brunst KJ, Rao M, Adkins EA, et al. *Work*. 2025 Jun 19:10519815251346449.

BackgroundWork, a social determinant of health (SDOH) can both affect and be affected by health.ObjectiveTo examine literature related to work as a SDOH on cardiovascular and musculoskeletal disease among U.S. workers.MethodsA literature review was conducted. All studies investigating work-related SDOH on the following cardiovascular (stroke, hypertension) and musculoskeletal disease (arm and leg limbs, pain). Epigenetic influences were also evaluated, as it relates to these diseases.ResultsThe core concept of "work" as a SDOH on cardiovascular and musculoskeletal disease has yielded the "bio-ecological work" model, comprised of four main levels of influence: Work Environment, Interpersonal, Psychological, and Intrapersonal. The Work Environmental dimension includes: The health effects of unemployment and job insecurity, the impact of shift work schedules on health, balance between work effort and reward, the psychosocial work environment, the influence of control at work, demands, and decision latitude on worker's health, the link between health and the physical risks and hazards of work. The Interpersonal level consists of: The health implications of balancing work and family responsibilities and social support at work. The Psychological dimension includes perceived discrimination in the workplace and acute work-related stress and chronic disease. And the Intrapersonal level consists of workplace exposures on epigenetics, telomere length, and microRNA molecules.ConclusionThis work is important to inspire capacity building and research in occupational health, to prevent cardiovascular and musculoskeletal disorders in order to preserve a productive life for the ageing population.

Lien vers l'article

Inadequate sleep increases stroke risk: evidence from a comprehensive meta-analysis of incidence and mortality.

Ungvari Z, Fekete M, Lehoczki A, Munkácsy G, Fekete JT, Zábó V, et al. *Geroscience*. 2025 Jun;47(3):4679-95.

The link between abnormal sleep duration and stroke outcomes remains contentious. This meta-analysis quantifies how both short and long sleep durations impact stroke incidence and mortality. A comprehensive search was conducted in PubMed, Web of Science, Cochrane Library, Embase, and Google Scholar up to November 1, 2024, to identify cohort studies evaluating sleep duration and stroke outcomes. Meta-analysis was performed using MetaAnalysisOnline.com and a random-effects model

to estimate pooled hazard ratios (HRs). Results were visualized through Forest and Funnel plots. Analysis of 43 studies (35 on stroke incidence, 8 on mortality) revealed significant associations between sleep duration and stroke outcomes. Short sleep duration (≤ 5-6 h) was associated with increased stroke incidence (HR 1.29, 95% CI 1.19-1.40, p < 0.01) and modestly elevated mortality (HR 1.12, 95% CI 1.01-1.25, p = 0.03). Long sleep duration (> 8-9 h) demonstrated stronger associations with both increased stroke incidence (HR 1.46, 95% CI 1.33-1.60, p < 0.01) and mortality (HR 1.45, 95% CI 1.31-1.60, p < 0.01). Significant heterogeneity was observed in incidence studies (I2 = 74-75%), while mortality analyses showed moderate to low heterogeneity (I2 = 35-40%). This meta-analysis highlights a U-shaped association between sleep duration and stroke risk, with both short and long sleep durations linked to higher stroke incidence and mortality. These findings underscore the importance of balanced sleep duration as a modifiable risk factor in stroke prevention strategies and provide a foundation for the Semmelweis Study, a prospective workplace cohort investigating the role of modifiable lifestyle factors in unhealthy cerebrovascular and brain aging.

Lien vers l'article

Atherogenic Risk in Shift Versus Non-Shift Workers: Associations with Sociodemographic and Lifestyle Factors.

Tosoratto J, Tárraga López PJ, López-González Á A, Paublini Oliveira H, Busquets-Cortés C, Ramirez-Manent JI. *Diseases*. 2025 Jun 18;13(6).

Introduction. Atherosclerosis is the histopathological lesion underlying most cardiovascular diseases. Several scales assess the risk of developing atherosclerosis, with the most recognized being atherogenic dyslipidemia (AD) and atherogenic indices (AIs). The aim of this study is to assess the associations between shift work, sociodemographic variables, and lifestyle with atherogenic risk, as determined by atherogenic indices, atherogenic dyslipidemia, and the lipid triad. Material and Methods. This is a descriptive, cross-sectional study involving 53,053 workers (28,808 shift workers and 24,245 non-shift workers) from various autonomous communities in Spain and multiple occupational sectors. The association between sociodemographic variables such as age, sex, and socioeconomic status, health habits including tobacco and alcohol consumption, physical activity (PA), adherence to the Mediterranean diet (MD), and shift work with the presence of AD and high values of three AIs (Cholesterol/HDL-c, LDL-c/HDL-c, and Triglycerides/HDL-c) were assessed. Results. All variables analyzed were associated with AD and AIs values. Among the variables, the strongest associations were observed for physical activity, with odds ratios (ORs) ranging from 7.70 (95% CI: 6.86-8.55) for high LDL-c/HDL-c to 14.10 (95% CI: 9.05-14.16) for AD; adherence to the Mediterranean diet, with ORs ranging from 1.98 (95% CI: 1.60-2.37) for high LDL-c/HDL-c to 5.89 (95% CI: 4.92-6.86) for AD; and age, with ORs of 2.11 (95% CI: 1.84-2.38) for high Triglycerides/HDL-c and 4.66 (95% CI: 4.04-5.28) for high Total Cholesterol/HDL-c. Conclusions. The profile of a worker with the highest atherogenic risk in our study is a male, older in age, with low socioeconomic status, a smoker, a habitual alcohol consumer, physically inactive, with low adherence to the Mediterranean diet, and engaged in shift work.

Lien vers l'article

Status of Hypertension and Its Associated Factors Among Undergraduate Medical Students of a Private Medical College in Lalitpur District.

Sah SK, Singh N, Pandey S, Sherpa Lama AT, Panta PP, Shah S, et al. *Kathmandu Univ Med J (KUMJ)*. 2025 Jan-Mar;22(88):85-90.

Background Hypertension, a significant global health concern, warrants exploration within the unique context of medical student populations. Hypertension is a silent killer and is a leading cause of premature morbidity and mortality particularly in developing countries including Nepal. Medical

students are prone to stress, long working hours, unsteady and unhealthy lifestyles such as lack of exercise, eating unhealthy food which are high risk factors contributing to hypertension. Objective To assess the prevalence of hypertension and its associated risk factors among undergraduate medical students. Method A Cross-sectional study was conducted between August to November 2023 among the undergraduate medical students from first-year to final-year and interns at a teaching hospital after obtaining ethical approval from the Institutional Review Committee. A total enumeration sampling technique was used. Chi square test was used to determine the association between variable and P value less than 0.05 was fixed for statistically significant. Result Out of 500 participants, 234 (46.80%) were reported to have hypertension according to the classification of the American Heart Association, 2023. Among them, 169 (72.22%) were male and 65 (27.78%) were female, with a male-to-female ratio of 2.6:1. Male participants had significantly higher odds of developing hypertension compared to females, with a crude odds ratio (COR) of 3.116 (95% CI: 2.144-4.53, p < 0.001) and an adjusted odds ratio (AOR) of 2.815 (95% CI: 1.914-4.139, p < 0.001). Participants categorized as "Obese" also had significantly higher odds of developing hypertension compared to "Non-obese" individuals, with a COR of 1.862 (95% CI: 1.189-2.916, p = 0.006) and an AOR of 1.636 (95% CI: 1.026-2.607, p = 0.039). Conclusion The high frequency of hypertension in this study could indicate a hidden epidemic among medical students. The results suggest that effective health screening and routine examinations are necessary, in addition to measures that support healthy lifestyles.

Lien vers l'article

Association of Shift Work and Lifestyle With Aortic Aneurysm Incidence: A Large Prospective Cohort Study in the UK Biobank.

Liu X, Zhang X, Gong C, Hu H, Qiao Z, Li C, et al. *J Am Heart Assoc*. 2025 Jun 17;14(12):e040481.

BACKGROUND: Shift work is associated with various health problems, but its impact on aortic aneurysm (AA) is unclear. The role of lifestyle factors in this regard is also less clear. This study aimed to explore the combined effects of shift work and lifestyle on AA risk. METHODS: A total of 213971 employed or self-employed participants from the UK Biobank were included in the study. Employment and lifestyle information was collected. Cox proportional hazards regression models were applied to assess the association between shift work and AA. Restricted cubic spline functions, mediation, interaction, and joint analyses were used to further explore the relationship between unhealthy lifestyle, shift work, and AA risk. RESULTS: Among 213 971 participants, 1035 developed AA during a mean follow-up of 14.9 years. In fully adjusted models, shift work was associated with a significantly higher risk of AA (hazard ratio [HR], 1.24 [95% CI, 1.06-1.46]), with frequent shift workers showing an elevated risk (HR, 1.27 [95% CI, 1.03-1.57]). A dose-dependent relationship was observed between the unhealthy lifestyle score and the risk of AA, with the risk of AA increasing as the unhealthy lifestyle score increased. The joint effect of shift work and unhealthy lifestyle showed a significant association, particularly among shift workers with 4 to 5 unhealthy lifestyle factors (HR, 2.26 [95% CI, 1.63-3.14]). CONCLUSIONS: In this cohort study, we found that shift work was significantly associated with an increased risk of AA. Additionally, unhealthy lifestyles, particularly smoking, may play a crucial role in this association. These findings underscore the need for targeted prevention strategies, especially for shift workers with unhealthy lifestyle factors.

Lien vers l'article

The Effectiveness of Low-Level LED Light Therapy for Sleep Problems, Psychological Symptoms, and Heart Rate Variability in Shift-Work Nurses: A Randomized Controlled Trial.

Liao YH, Tai CJ, Ming JL, Lin LH, Chien LY. *J Nurs Manag*. 2025;2025:6478834.

Background: Shift-work schedules can cause sleep and psychological problems among nurses, negatively affecting their health and quality of life. This trial examined the effects of low-energy light

therapy on sleep, psychological symptoms, and heart rate variability among shift-work nurses. Methods: This randomized controlled trial was conducted from July 2021 to June 2022. The inclusion criteria were nurses with self-reported insomnia who worked in shifts in the last 6 months in a medical center in northern Taiwan. Block randomization was used to assign the study participants to two groups: experimental (n = 32) and control (n = 32). A portable Meridian Aura Cap equipped with a low-level light-emitting diode was used to provide red and near-infrared light (660 and 850 nm) for 30 min, three times a week for 4 weeks; the control group did not receive any intervention. The Depression Anxiety Stress Scale-21 and Insomnia Severity Index were used to measure psychological symptoms and sleep problems, respectively. Heart rate variability was measured by the ANSWatch. Results: No significant differences were reported in preintervention scores. After the 4-week intervention, the intervention group scored significantly lower in insomnia (4.3 vs. 12.6, respectively; $p < 0.001$), depression (2.5 vs. 7.9, $p < 0.001$), anxiety (3.1 vs. 9.2, $p < 0.001$), and stress (5.6 vs. 12, $p < 0.001$) than those in the controls. No significant differences were observed in heart rate variability between the two groups. Conclusion: Low-level light-emitting diode light therapy improved sleep quality in shift-work nurses with insomnia and alleviated depression, anxiety, and stress symptoms; however, it did not improve heart rate variability, possibly because of the short intervention duration and the ongoing shift-work schedule. Implications for Nursing Management: Employers could consider providing phototherapy for shift nurses to improve their health. Trial Registration: ClinicalTrials.gov identifier: NCT05146596.

Lien vers l'article

Comparison of 24 h Ambulatory Blood Pressure Control Among Hypertensive Patients in Communities in Different Time Periods and Analysis of Its Influencing Factors.

Huang X, Yang HJ, Zheng YJ, Li YT, Feng JZ, Wang HX, et al. *Zhongguo Yi Xue Ke Xue Yuan Xue Bao*. 2025 Jun 27.

Objective To assess the blood pressure control and its influencing factors among hypertensive patients in communities in different time periods by 24 h ambulatory blood pressure monitoring(24 h ABPM)and provide reference for optimizing the health management services for hypertension in communities. Methods A total of 765 hypertensive patients registered in the hypertension management project of national essential public health services in Sanxiang Town,Zhongshan City from October 2022 to September 2023 were identified as target subjects.The 24 h ABPM devices were distributed for blood pressure monitoring and a questionnaire survey was conducted to analyze the influencing factors of blood pressure control. Results Of all the participants,16.5% did not monitor blood pressure regularly,and 59.2% monitored blood pressure 1-2 times per week.The patients who were not on night shifts/staying up late had higher mean rates of achieving the target blood pressure and the circadian rhythm of blood pressure during 24 h,nighttime,and early morning than those who were on night shifts/staying up late(P<0.05 for all).The patients who never drank alcohol had higher rate of achieving the target blood pressure in early morning than those who drank alcohol(P<0.05).The average blood pressure during daytime,nighttime,and 24 h were different by sex(P<0.05 for all).The average blood pressure during nighttime was different by age and job types(P<0.05 for all).The average blood pressure during daytime,nighttime,and 24 h were different in patients with different body weight types(P<0.05 for all).The results of the multivariate logistic regression analysis showed that uncontrolled blood pressure during daytime was more likely to occur in male patients(OR=1.394,95%CI:1.045-1.858,P=0.024),and that during nighttime was more likely to be associated with male patients(OR=1.573,95%CI:1.088-2.275,P=0.016)and night shifts(OR=2.467,95%CI:1.198-5.077,P=0.014).It was difficult to achieve blood pressure control in early morning for the patients who drank alcohol for more than three times per week(OR=4.567,95%CI:1.629-12.807,P=0.004),woke up at night(OR=1.800,95%CI:1.125-2.878,P=0.014),and had night shifts(OR=1.579,95%CI:1.102-2.465,P=0.044).The patients on night shifts were more likely to have abnormal circadian rhythm of blood pressure(OR=1.753,95%CI:1.018-

3.018,P=0.043). Conclusion The personal characteristics and lifestyle of hypertensive patients significantly affect the blood pressure control in different time periods(daytime,nighttime,and early morning)and the circadian rhythm of blood pressure.The family doctor team of community healthcare institutions can implement targeted and precise intervention measures for hypertensive patients according to the influencing factors of blood pressure control in different time periods,so as to achieve better management effects.

Lien vers l'article

Chronotype, Life's Essential 8, and risk of cardiovascular disease: a prospective cohort study in UK Biobank.

Kianersi S, Potts K, Wang H, Sofer T, Noordam R, Rutter M, et al. *Res Sq*. 2025 Jun 3.

INTRODUCTION: Individuals with an evening chronotype often experience circadian misalignment, which may disrupt health behaviors and circadian regulation of cardiometabolic functions such as blood pressure. However, the associations of chronotype with modifiable cardiovascular disease (CVD) risk factors and incident CVD are not fully understood. METHODS: We conducted a prospective study in 322,777 UK Biobank participants aged 39-74 years who were free of known CVD (2006-2010). Chronotype was self-reported using a single representative question from the Morningness-Eveningness Questionnaire. The Life's Essential 8 (LE8) score was calculated based on 8 modifiable CVD risk factors, and ranged from 0 to 100 with higher scores indicating better cardiovascular health. Incident CVD was defined as first myocardial infarction (MI) or stroke leading to hospitalization or death, identified via validated algorithms. Cox proportional hazards models estimated the association between chronotype and CVD risk, adjusted for socio-demographics, shift work, and family history of CVD. Under the causal mediation framework, we evaluated the role of LE8 in the association between chronotype and CVD risk by decomposing the total effect into natural direct effect (i.e., independent of LE8) and natural indirect effect (i.e., mediated by LE8; NIE). RESULTS: Participants (mean age: 57) with a "definite evening" chronotype (8% of the total sample) were 79% more likely to have an overall poor LE8 score (<50 points) compared to "intermediate" type (prevalence ratio 95% CI: 1.72 - 1.85). Over a median of 13.2 years of follow-up, there were 17,584 incident CVD events (11,091 MI; 7,214 stroke). The hazard ratio (HR) for total CVD was 1.03 (0.99 - 1.07) for the "definite morning" and 1.16 (1.10 - 1.22) for "definite evening" compared with "intermediate" chronotype (P-trend: 0.10). LE8 explained 74% of the association between evening chronotype and CVD (NIE comparing "definite evening" to "intermediate: 1.11; 95% CI: 1.09, 1.13). Findings were similar when MI and stroke were examined individually. CONCLUSIONS: Compared to intermediate chronotype, evening chronotype was associated with modestly higher CVD risk, which was mainly explained by overall poorer cardiovascular health. These results suggest that individuals with evening chronotype may particularly benefit from interventions targeting CVD risk factors.

Lien vers l'article

Impact of nocturnal duty on cardiometabolic health: Insights across professions.

Bou Sanayeh E, Salman O, Khattar G, Nevelev D. *World J Cardiol*. 2025 May 26;17(5):105669.

This editorial explores the significant cardiometabolic outcomes of nocturnal sentry duty and its broader implications for other professions with overnight work. Highlighting the paradox of essential nighttime labor and its adverse physiological effects, we discuss how occupations like healthcare, hospitality, and emergency services are similarly affected. The study by Lin et al provides critical insights into these dynamics and lays the groundwork for understanding nocturnal duty's multifaceted impact on human health.

Lien vers l'article

Association between night shift work and markers of metabolism, cardiovascular and immune system in a population-based German cohort.

Bittner N, Korf HW, Moebus S, Schmidt B, Caspers S. *Geroscience*. 2025 Jun;47(3):5141-55.

In humans, night shift work is a major reason for chronodisruption, may affect health and increase the risk of a metabolic syndrome, but results obtained so far are ambiguous. In this population-based, cross-sectional study, PRESENT and FORMER shift workers were compared to age- and sex-matched controls, who never worked in shift with regard to body mass index, waist-hip-ratio total, high-density lipoprotein and low-density lipoprotein, cholesterol and C-reactive protein. Moreover, association with sex, length of shift work and medication were investigated. The present results do not support the hypothesis that night shift work per se is associated to an increased risk of metabolic syndrome, and cardiovascular and immune malfunctions: no differences were found in mean anthropomteric and blood values between present or former shift workers and respective matched controls. When analyzing the proportion of participants showing values beyond the clinically relevant cut-offs, no general effect of shift work was observed, but the data may suggest an interaction between shift work and sex. These divergent results may be due to differences in the socio-economic status, the health care system and the shift schedule. All these parameters need to be considered in future studies addressing the impact of night shiftwork on human health.

Lien vers l'article

Does the heart eat along? A two years lifestyle intervention in shift workers.

Binder-Mendl C, Schwerte T, Marktl W. *Acta Cardiol*. 2025 Jul;80(5):447-55.

BACKGROUND: The present study investigates whether it is possible to reduce heart rate by nutritional information and lifestyle modification. METHODS: In this exploratory study 18 male rotating shift workers (39.7 ± 7.5 y) were randomly divided into two groups by using the urn model. At the beginning of the study, all subjects wore a heart rate sensor for 24 hours during a night shift. This recording was repeated after 1 year, when groups switched, and at the end of the study. Participants received nutritional information every other month for 1 year. The nutritional counseling was provided by a dietician/nutritionist and only contained information about healthy eating. By using the food diaries, nutritional errors were uncovered and could easily be corrected. Subjects were also encouraged to incorporate more endurance and resistance training into their daily routines. RESULTS: After the intervention, heart rate in group A decreased during the day from 75 ± 6.3 beats per minute (bpm) before to 73 ± 7.5 bpm afterward and during the night from 72 ± 9.8 bpm before to 70 ± 9.5 bpm afterward. In group B heart rate increased during the day from 72 ± 9.1 bpm before to 76 ± 7.2 bpm afterward and decreased at night from 69 ± 10.0 bpm before to 66 ± 11.2 bpm afterward. All values were highly significant ($p < 0.001$). CONCLUSIONS: Motivation to adopt a better lifestyle in terms of healthy eating and daily exercise could be a cost-effective contribution to heart health among rotating shift workers. However, the individually adapted interventions need to occur more frequently.

Lien vers l'article

Biosensors, Biometrics and Capabilities in Practice (CiP): A WHOOP 4.0 Perspective.

Barlow E, Robinson D, James O, Luton O, Eley C, Bowman C, et al. *J Surg Educ*. 2025 Aug;82(8):103549.

OBJECTIVE: This study aimed to measure physiological stress response related to Capabilities in Practice (CiPs) using wearable technology. DESIGN: Surgical residents wore WHOOP4.0 sensors for 6-weeks with CiP event diaries and Abbreviated Maslach Burnout Inventory (AMBI) scores recorded. SETTING: A surgical training program serving a single UK (Wales) deanery. PARTICIPANTS: 23 Surgical residents participated (13 male, median age 30 [26-35] year). RESULTS: Median Heart Rate Variability

(HRV) varied by resident grade (Core Surgical Training (CST) resident 58 vs. Higher Surgical Training (HST) resident 48 ms, $p < 0.001$) and duty shift (HRV: Off Duty 51 milliseconds (ms), Normal Working Day (NWD) 48, On Call Day (OCD) 45, $p = 0.009$) and CiP (Inpatient work 48, Elective Operating 47, Emergency Operating 44, Emergency Day Shift 46, Emergency Night Shift 63 ms, $p = 0.017$). Emergency shifts were associated with adverse sleep profiles with median sleep performance varying from 74.0% (Night Shift) to 98.0% (Off Duty, $p < 0.001$). On average, residents had 13.4% and 27.2% less sleep related to OCDs or Night Shifts respectively ($p < 0.001$), and 20.2% less sleep related to Emergency Night Shifts when compared with Elective Day time CiPs ($p < 0.001$). HRV was related to sleep efficiency (rho 0.38, $p < 0.001$) and REM sleep (rho 0.211, $p < 0.001$). AMBI score >3 (consistent with burnout) was found in 71.4% CST vs. 30.1% HST ($p < 0.001$) and 49.1% males vs. 60.9% females ($p < 0.001$) and was inversely related to HRV and sleep efficiency ($p < 0.001$). CONCLUSIONS: Stress response varied by 20% (shift profile) and 30% (CiP) highlighting daily clinician physical demand. Adverse sleep profiles were seen related to emergency work, in particular night shifts, impacting sleep quantity and quality.

Lien vers l'article