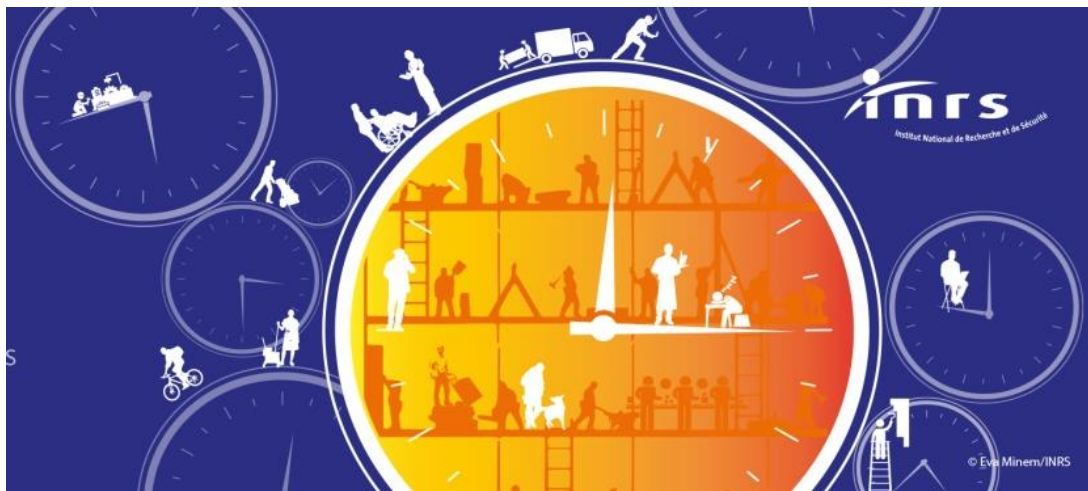


LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Octobre 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.

Les bulletins de veille sont disponibles sur le [portail documentaire de l'INRS](#). L'abonnement permet de recevoir une alerte mail lors de la publication d'un nouveau bulletin (bouton « M'abonner » disponible après connexion à son compte).

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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

Association of non-standard working time arrangements with safety incidents: a systematic review.

Moen LV, JA SL, Sterud T, Christensen JO, Haugen F, Skogstad M, et al. *BMJ Open*. 2025 Sep 21;15(9):e100931.

OBJECTIVE: To systematically review the evidence on the association between non-standard working time arrangements (such as night work or shift work) and the occurrence of safety incidents. **DESIGN:** Systematic review conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and using a structured narrative approach and the Synthesis Without Meta-analysis framework to evaluate and summarise findings. **DATA SOURCES:** MEDLINE, Embase, PsycINFO, Web of Science and ProQuest Health and Safety Science Abstracts were searched through February 2024. **ELIGIBILITY CRITERIA FOR SELECTING STUDIES:** We included peer-reviewed English-language studies of paid workers (18-70 years) that examined the association between non-standard working time arrangements and safety incidents (accidents, near-accidents, safety incidents or injuries), excluding cross-sectional designs and studies on unpaid workers, athletes or military personnel. **DATA EXTRACTION AND SYNTHESIS:** Two reviewers independently extracted data and assessed risk of bias using standardised forms, extracting study characteristics (author, year, country, sector and population), working time arrangements and exposure assessment, outcomes and their assessment, and reported risk estimates. We conducted a narrative synthesis, classifying studies into three exposure contrasts (shift worker versus non-shift worker, time-of-day and shift intensity), and summarised risk estimates using forest plots without calculating pooled effects. **RESULTS:** A total of 13 569 records were screened, and 24 studies met the inclusion criteria. The results indicated that shift workers generally had an elevated safety incident risk compared with non-shift workers (risk estimates ranged from 1.11 to 5.33). Most of the included studies found an increased risk of safety incidents during or after night shifts. Accumulated exposure to evening or night shifts increased the risk of safety incidents during the following 7 days. However, bias and heterogeneity across studies in design, populations and outcome measures resulted in an overall low to very low certainty of the evidence. **CONCLUSIONS:** Non-standard working time arrangements, including night and evening shifts, appear to increase the risk of occupational safety incidents. Despite the low certainty of evidence, the findings

highlight a potential area for preventive measures in work scheduling. Future longitudinal studies using individual data on daily working hours are needed.

[Lien vers l'article](#)

RPS et QVT

Work hours, appraisal at work, and intention to leave the medical research workforce in Japan.

Kuwahara K, Minoura A, Shimada Y, Kawai Y, Fukushima H, Kondo M, et al. *J Occup Health*. 2025 Jan 7;67(1).

OBJECTIVES: Strengthening the research workforce is essential to safeguard public health and human lives. This study examined the associations between work hours and perceived performance appraisal, and the intention to leave the medical research workforce. **METHODS:** This cross-sectional study used data collected from medical researchers between December 2022 and January 2023. The questionnaire was distributed to participants via all 141 societies of the Japanese Association of Medical Sciences. Weekly work hours were self-reported using 10 response options. Perceived appraisal of research performance at work was assessed using 6 response options and dichotomized into inappropriately appraised (slightly disagree/totally disagree) and the rest. Intention to leave the research workforce was also self-reported and dichotomized. We calculated multivariable-adjusted odds ratios (aORs) for intention to leave, according to work hours and perceived appraisal. **RESULTS:** Of 3139 participants (852 women), most (n = 686) worked 60-79 hours weekly. One in four (n = 745) felt inappropriately appraised, and 11% (n = 356) intended to leave. A U-shaped association was observed between work hours and intention to leave (aOR: 2.05; 95% CI, 1.12-3.73, for weekly working 100 hours or longer), although the quadratic trend was not significant (P = .15). The inappropriately appraised group had a 3.6 times (95% CI, 2.81-4.58) higher OR of intending to leave compared with their appropriately appraised counterparts. **CONCLUSIONS:** The results suggest that researchers who work long hours and feel inappropriately appraised are more likely to consider leaving the medical research workforce.

[Lien vers l'article](#)

Beyond 12 hours: A national survey of neonatal nurse practitioners perceptions on shift length and professional practice.

Bell TR, Hoffman J, Farmer ML. *J Am Assoc Nurse Pract*. 2025 Oct 3.

BACKGROUND: The neonatal nurse practitioner (NNP) is a pivotal member of the neonatal intensive care unit (NICU) care team. To ensure 24-hour coverage in this high-acuity environment, NNPs often work shifts exceeding 16 hours. However, little is known about how prolonged shifts affect NNP fatigue, clinical performance, and overall well-being. **METHODS:** A mixed-methods survey was distributed via postcards containing a QR code to board-certified NNPs. The survey assessed demographics, shift practices, and perceptions of fatigue when working shifts greater than 16 hours. **RESULTS:** A total of 623 participants initiated the survey; 371 completed all items. Most were experienced NNPs working in level III NICUs. Preferred shift lengths included 24-hour and 12-hour day shifts. Awareness of the National Association of NNP position statement on shift length was high (73%), with 76% agreeing with its recommendations. Over half (51%) supported continuing 24-hour shifts. Eighty-five percent agreed that unit census/acuity contributes to fatigue. Nearly half (49%) reported feeling unsafe driving after shifts >16 hours; among those who did acknowledge feeling unsafe to drive, this occurred an average of 17% of the time. Sixty percent denied ever feeling unable to perform duties after extended shifts; among those who did, the average frequency was 17.4%. **CONCLUSIONS:** Neonatal nurse practitioners report a preference for extended shifts despite acknowledging associated

fatigue-related concerns. Although these findings provided valuable subjective insight, findings are limited by self-reporting and sample representation. IMPLICATIONS: Additional objective data and qualitative analysis are needed to guide evidence-based strategies that prioritize both provider well-being and patient safety.

[Lien vers l'article](#)

Santé psychique

Aucun article dans ce bulletin.

Troubles cognitifs et de la vigilance

Fatigue assessment of forklift operators in a 12-hour shift system.

Wang T, Öztürk I, Lyu W, Ning Z. *Work*. 2025 Sep 24:10519815251377003.

BackgroundIn recent years, numerous large-scale manufacturing enterprises in Northeastern China have shifted from the conventional 8-h shift model to an extended 12-h shift schedule. While this change aims to improve production efficiency, prolonged working hours may lead to increased levels of occupational fatigue and pose significant risks to worker health and safety.
ObjectiveThis study aimed to assess the physiological and subjective fatigue responses among forklift operators working 12-h shifts, with particular emphasis on differences between day and night shifts, as well as gender-based variations in fatigue susceptibility.
MethodsTen forklift truck operators were recruited from a major tire manufacturing enterprise that had implemented a 12-h shift system. Subjective fatigue was measured through self-reported assessments, while objective indicators were captured using surface electromyography (sEMG) and electroencephalography (EEG). Data were collected at multiple time points across both day and night shifts to monitor changes in fatigue levels.
Results/Findings revealed that most operators experienced significant fatigue after 8 h of work, even when shifts extended to 12 h. Fatigue and drowsiness symptoms were more pronounced among night shift workers, with critical fatigue peaks observed between 14:30-16:00 and 2:30-4:00. Gender-based analysis showed negligible differences in daytime fatigue; however, female operators exhibited greater fatigue and drowsiness during night shifts compared to male counterparts.
ConclusionsExtended 12-h shifts are associated with considerable fatigue, especially during night work, posing potential safety concerns in industrial environments. The identification of specific fatigue-prone periods and gender-related differences underscores the need for tailored fatigue risk management strategies and evidence-based shift scheduling policies to safeguard worker well-being and operational safety.

[Lien vers l'article](#)

Sleep and well-being before and after a shift schedule change in ICU nurses: an observational study using wearable sensors.

Ito-Masui A, Sakamoto R, Kawamoto E, Motomura E, Tanii H, King ZD, et al. *J Occup Health*. 2025 Jan 7;67(1).

OBJECTIVES: This study aimed to evaluate, using wearable sensors, the impact of transitioning from an 8-hour to a 12-hour shift schedule on sleep patterns and well-being in intensive care unit (ICU) nurses with pre-existing sleep disturbances. We also examined differences in outcome based on chronotype.
METHODS: We conducted an observational study at a university hospital ICU between November 2020 and October 2023, before and after a hospital-wide shift schedule change. Nurses wore wearable sensors and completed daily surveys over 5 weeks under each shift system. Rotating-shift ICU nurses

with a Pittsburgh Sleep Quality Index score >5 were eligible. Sleep metrics and subjective well-being were compared using linear mixed models, adjusting for age. Sleep episodes were categorized relative to shift timing, and chronotype-stratified subgroup analyses were performed. RESULTS: Eighty nurses completed the study (12-hour shift: 37; 8-hour shift: 43). The interval between shifts was greater for the 12-hour shift group (36.12 vs 26.78 hours). Total sleep duration did not significantly differ between groups (12-hour shift: 418.5 minutes; 8-hour shift: 398 minutes); however, the 12-hour shift group had less fragmented sleep, higher subjective well-being scores, and lower reported stress and fatigue. Evening chronotypes appeared to benefit more from 12-hour shifts, with longer sleep duration and higher well-being scores, though these differences were not statistically significant. CONCLUSIONS: Transitioning to a 12-hour shift schedule was associated with reduced sleep fragmentation and improved well-being, particularly among evening chronotypes. These findings suggest that shift schedule structure and individual chronotype may influence adaptation to shift work in ICU settings.

[Lien vers l'article](#)

Beyond 12 hours: A national survey of neonatal nurse practitioners perceptions on shift length and professional practice.

Bell TR, Hoffman J, Farmer ML. *J Am Assoc Nurse Pract.* 2025 Oct 3.

BACKGROUND: The neonatal nurse practitioner (NNP) is a pivotal member of the neonatal intensive care unit (NICU) care team. To ensure 24-hour coverage in this high-acuity environment, NNPs often work shifts exceeding 16 hours. However, little is known about how prolonged shifts affect NNP fatigue, clinical performance, and overall well-being. METHODS: A mixed-methods survey was distributed via postcards containing a QR code to board-certified NNPs. The survey assessed demographics, shift practices, and perceptions of fatigue when working shifts greater than 16 hours. RESULTS: A total of 623 participants initiated the survey; 371 completed all items. Most were experienced NNPs working in level III NICUs. Preferred shift lengths included 24-hour and 12-hour day shifts. Awareness of the National Association of NNP position statement on shift length was high (73%), with 76% agreeing with its recommendations. Over half (51%) supported continuing 24-hour shifts. Eighty-five percent agreed that unit census/acuity contributes to fatigue. Nearly half (49%) reported feeling unsafe driving after shifts >16 hours; among those who did acknowledge feeling unsafe to drive, this occurred an average of 17% of the time. Sixty percent denied ever feeling unable to perform duties after extended shifts; among those who did, the average frequency was 17.4%. CONCLUSIONS: Neonatal nurse practitioners report a preference for extended shifts despite acknowledging associated fatigue-related concerns. Although these findings provided valuable subjective insight, findings are limited by self-reporting and sample representation. IMPLICATIONS: Additional objective data and qualitative analysis are needed to guide evidence-based strategies that prioritize both provider well-being and patient safety.

[Lien vers l'article](#)

Night shift and occupational fatigue among nurses who work 12 hours in Jeddah.

Alanmi B, Alharazi R, Almutary H. *J Educ Health Promot.* 2025;14:308.

The ever-demanding job of nurses necessitates night shift work for 12 hours at various healthcare facilities to improve continuity of care. Working at night is associated with physical and mental stress as it disturbs circadian rhythm, affects sleep, influences dietary and eating routine, and impairs cognitive function. Nursing is a high-demand profession that requires working for longer hours, due to which, nurses are at increased risk of occupational fatigue. This occupational fatigue involves various components of one's life including poor physical performance, poor mental health, impaired cognition, and sensory overload on account of high work demand but low energy restoration. The current scope review aimed to assess the effect of night shift and occupational fatigue on nurses who work 12 hours.

A systemic search of PubMed, EBSCO, CINAHL, MEDLINE, and Google Scholar was conducted. A total of 245 full-text articles underwent eligibility evaluation. In the end, 17 full-text articles were included in this scoping review. This scoping review found that there is a significance positive association of occupational fatigue with 12 hours nightshift work and that chronic fatigue leads to negative emotions, lack of concentration, and decreased motivation and subsequent reduced physical performance. In addition, nurses' 12 hours nightshift work results in psychological, physical issues including anxiety, depression, burnout, exhaustion, and professional performance as well as affects nurses' social and quality of life. Therefore, policymakers need to work on circadian rhythm-based interventions considering the work duration, speed of shift change, number of consecutive shifts, and social support.

[Lien vers l'article](#)

Travail posté et de nuit

Généralités et prévention

Working Time Traffic Light recommendations: development, use, and implementation in the Finnish social and healthcare.

Härmä M, Karhula K, Turunen J, Koskinen A, Shiri R, Sallinen M, et al. *Ind Health*. 2025 Sep 15.

The Working Time Traffic Light (WTTL) recommendations are detailed guidelines aimed at mitigating the health and safety effects of shift work. This paper reviews the development, implementation, and effects of the WTTL recommendations in social and healthcare. Based on the payroll-based Working Hours in the Finnish Public Sector (WHFPS) cohort of over 300,000 employees, we analysed many dose-response associations of different working hour characteristics with health and safety and developed cut-off levels and evaluation tools for the traffic light-based WTTL recommendations. The recommendations were implemented in the social and healthcare sector by embedding the recommendations into shift scheduling software in co-operation with commercial software producers, and by giving feedback on the working hour characteristics to the healthcare organizations and policymakers. Based on a 5-year follow-up, the WTTL recommendations were well-known, and used regularly by 20% of the shift planners. Compared to the non-users, the regular use of the evaluation tool was associated with improved working hour patterns, a lower number of occupational accidents, and a decrease in psychological distress. Based on the established use of the recommendations and their effects on health and safety, the development and implementation of the WTTL recommendations can be regarded as successful.

[Lien vers l'article](#)

Guidelines for Reducing the Adverse Effects of Shift Work on Nursing Staff: A Systematic Review.

Inchingolo AD, Inchingolo AM, Fatone MC, Ferrante L, Casamassima L, Trilli I, et al. *Healthcare (Basel)*. 2025 Aug 28;13(17).

BACKGROUND: The increasing demand for care in hospital settings, often at a high intensity, requires organizing work according to 24 h shifts. Nevertheless, shift work (SW), especially at night, alters the circadian rhythm, negatively affecting the psychophysical health of nurses, compromising their quality of life, and jeopardizing patient safety. Shift-work-related diseases (SWDs) can arise from these disruptions. **METHODS:** This systematic review aims to evaluate the effects of several types of medical, psychotherapeutic, and educational interventions and strategies on shift-work-related diseases (SWDs). The databases PubMed, Embase, Web of Science, and Cochrane were searched using the MESH terms "shift work" and "nurses" from January 2015 to March 2025. A total of 43 articles were included in the final analysis. **RESULTS:** Quantitative findings from the studies showed, for example, improvements in sleep quality scores ranging from 15% to 40% with optimized shift planning, reductions in fatigue scores by 20-35% through strategic napping, and moderate effect sizes for light therapy interventions. Physical activity and relaxation techniques were associated with a 10-25% improvement in subjective well-being indices, while meal timing interventions led to reductions in gastrointestinal symptom prevalence by up to 18%. The selected articles were discussed by dividing them according to the type of intervention applied to shift nurses, namely improvement of shift planning, light and temperature modulation, introduction of napping, supplementation, meal management, psychotherapy, sleep education, physical activity, relaxation techniques and yoga, music therapy, and aromatherapy. This categorization was performed to highlight the range of strategies tested and their relative quantitative impact. **CONCLUSIONS:** There is evidence that SWDs can be mitigated through targeted interventions and strategies. The limitations of the studies examined include small sample sizes, extreme heterogeneity of follow-up, the few numbers of randomized controlled trials, and the prevalence of female or Intensive Care Unit nurses in study samples. Further research should focus on large-scale randomized controlled trials, multicenter longitudinal studies, and

the evaluation of the most promising interventions-particularly light therapy, optimized shift scheduling, and structured napping protocols-to assess their long-term efficacy and generalizability.

[Lien vers l'article](#)

Activités physiques

Evaluating the impact of shift work length and time of day on musculoskeletal disorders among nursing assistants in long-term care.

Bellacov RL, Davis KG, He C. *Hum Factors Health*. 2025 Jun;7:100094.

AIM: This study aimed to investigate differences in activity and body movements for the different 8-hour shifts and extended 12-hour shifts at a long-term healthcare facility. The secondary aim will focus on determining the impact of shift work time of day on musculoskeletal injuries causing days off. **BACKGROUND:** Nursing assistants have heavy physical workloads, which results in high turnover and musculoskeletal pain. **METHODS:** The research team observed 240 shifts for 54 nursing assistants in five long-term healthcare facilities. The researchers completed direct observations of posture through the utilization of an ergonomic evaluation tool using the Rapid Entire Body Assessment using a random sampling (equivalent of 12 times per hour). An activity monitor continuously captured the time spent sitting, standing, and walking, along with the associated energy expenditure while working. **RESULTS:** The most significant results were in physical activity, with an 8-hour day percent of total time walking being double the amount at 48.4% compared to night shifts at 23.1% (total steps per hour: 1704 compared to 763, respectively). REBA scores for the upper body on the day shift are more ergonomically challenging (risk rating: 7 to 5, respectively). The 12-hour shifts negatively impact on the lower back and shoulder, causing injuries in long-term care. **CONCLUSION:** Overall, an 8-hour day had the most impact on energy expenditure. In addition, 8-hour shifts had a higher incidence of lower back pain, resulting in the most frequent loss of work. The incidence of loss of workdays affects employee well-being, productivity, and medical associated costs. Nearly 20% of the nurse assistants' observations had poor posture with medium to high risk. **IMPLICATIONS:** Healthcare managers could help the physical strain that nursing assistants endure by targeting footwear, poor posture, and fatigue. While the higher workload in this study did not equate to higher musculoskeletal pain, the complexity of the normal work tasks likely resulted in complex demands on the nursing assistants.

[Lien vers l'article](#)

Association Between Types of Shift Work and Physical Health Symptoms, Including Musculoskeletal Symptoms and Sleep Disturbance: Evidence from the 7th Korean Working Conditions Survey.

Jang JS, Kim SK, Hwang S, Jo H, Jeon HS. *J Occup Environ Med*. 2025 Sep 24.

OBJECTIVE: This study examined the associations between different types of shift work and health symptoms, including musculoskeletal symptoms and sleep disturbances, among South Korean workers. **METHODS:** Data from 43,011 participants in the 7th Korean Working Conditions Survey were analyzed. Multivariate logistic regression was used to estimate adjusted odds ratios (aORs) with 95% confidence intervals (CIs) for each shift type. **RESULTS:** Rotating shift work was significantly associated with low back pain (aOR = 1.31, 95% CI: 1.13-1.52), upper extremity pain (aOR = 1.31, 95% CI: 1.14-1.51), and waking up exhausted (aOR = 1.41, 95% CI: 1.20-1.64). Fixed shift workers had increased risks of anxiety (aOR = 1.77, 95% CI: 1.33-2.34) and depression (aOR = 2.08, 95% CI: 1.50-2.86). **CONCLUSION:** Rotating and fixed shift types are associated with adverse health outcomes. These findings support the need for shift type specific occupational health interventions and policy responses.

[Lien vers l'article](#)

Autres pathologies

Association of Shift Work, Health Behaviors, and Socioeconomic Status with Diabetes in over 53,000 Spanish Employees.

Tosoratto J, Tárraga López PJ, López-González Á A, Obrador de Hevia J, Busquets-Cortés C, Ramírez-Manent JL. *J Clin Med*. 2025 Aug 23;14(17).

Background: Diabetes, the coexistence of obesity and type 2 diabetes, is a major public health concern. Shift work and unhealthy lifestyle behaviors may exacerbate its prevalence, particularly in working populations. Objective: This study aims to evaluate the association between sociodemographic characteristics, health behaviors, and shift work and the prevalence of diabetes, using both BMI and the CUN-BAE estimator, in a large cohort of Spanish workers. Methods: This cross-sectional study included 53,053 workers (59.8% men) aged 18-69 years who underwent occupational health examinations. Diabetes was defined as obesity (BMI ≥ 30 kg/m²) or high CUN-BAE plus fasting glucose ≥ 100 mg/dL or prior diagnosis of diabetes. Adherence to the Mediterranean diet was assessed by the MEDAS questionnaire, physical activity by the IPAQ, alcohol intake by standard drink units (UBEs), and socioeconomic class by the CNAE-11 classification. Shift work was defined according to ILO criteria. Logistic regression was used to assess associations, adjusting for potential confounders. Results: Shift work was independently associated with increased odds of diabetes both in men and women. Diabetes prevalence was higher when assessed by CUN-BAE compared with BMI. Age, male sex, lower socioeconomic class, physical inactivity, smoking, poor diet adherence, and alcohol intake were all significantly associated with higher risk. The CUN-BAE index showed superior sensitivity in identifying individuals at risk. Conclusions: Shift work and unhealthy behaviors are key determinants of diabetes among Spanish workers. The use of adiposity estimators beyond BMI, such as CUN-BAE, should be encouraged in occupational health surveillance. Workplace-targeted interventions are urgently needed to address this growing metabolic burden.

[Lien vers l'article](#)

Feeding the night shift: Timing, cortisol, and what to do next.

Wang M, St-Onge MP. *Sleep*. 2025 Oct 2.

[Lien vers l'article](#)

Shift work and metabolic dysfunction-associated steatotic liver disease: a systematic review of observational studies.

Ma B, Fan Y, Fan W. *Int Arch Occup Environ Health*. 2025 Sep 17.

OBJECTIVE: Shift work disrupts the circadian rhythm and may increase the risk of metabolic disorders, including nonalcoholic fatty liver disease, recently redefined as metabolic dysfunction-associated steatotic liver disease (MASLD), and its progressive form, metabolic dysfunction-associated steatohepatitis. This systematic review aimed to synthesize observational studies on the association between shift work and MASLD. METHODS: A comprehensive literature search was conducted in the PubMed, Scopus, and Web of Science databases up to November 25, 2024, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Data were extracted and summarized based on pre-specified inclusion and exclusion criteria. The National Institutes of Health quality assessment tool was used to evaluate the quality of the included studies. Both data extraction and quality assessment were conducted independently by two authors, with disagreements resolved through consensus. RESULTS: Nine studies met the criteria and were included in the review, including various occupational groups. Most studies reported a positive association between shift work and

MASLD, with stronger effects observed in workers exposed to long-term or frequent shift work. Subgroup and interaction analyses suggested that gender, age, lifestyle, chronotype, and occupational factors may modify this association, while body mass index was identified as a potential mediator of the relationship between shift work and MASLD. However, methodological issues, such as imprecise exposure and outcome measurements and a lack of time-varying analysis, limit causal interpretation. CONCLUSION: The systematic review supports an association between shift work and increased MASLD risk. Further prospective studies with rigorous designs and diverse populations, as well as stronger mechanistic evidence, are needed to establish a causal link between shift work and MASLD.

[Lien vers l'article](#)

Shift Work and the Risk of Kidney Stones.

Knauf F, Luft FC, Nath KA. *Mayo Clin Proc.* 2025 Oct 1.

[Lien vers l'article](#)

Shift Work and Dietary Behaviors Among Korean Workers.

Kim CH, Lee W. *J Occup Health.* 2025 Sep 9.

BACKGROUND: Shift work is associated with irregular dietary habits and poor nutritional intake, increasing the risk of chronic diseases. This study aimed to assess dietary quality and nutritional intake according to shift work status among Korean adult workers. METHODS: Data from 15,121 adult workers aged ≥ 20 years from the Korea National Health and Nutrition Examination Survey (KNHANES) conducted between 2013 and 2021 were analyzed. Dietary quality was evaluated using the Korean Healthy Eating Index (KHEI), and shift work status was determined by self-reported working hours. Associations between shift work and dietary quality were assessed using multivariable logistic regression, accounting for the complex survey design. Stratified analyses by gender were also conducted. RESULTS: Shift workers showed no significant difference in overall dietary quality compared to day workers (OR=0.91, 95% CI: 0.80-1.04). However, shift workers more frequently skipped breakfast (OR=0.78, 95% CI: 0.68-0.89) and consumed fewer fresh fruits (OR=0.86, 95% CI: 0.75-0.98), vegetables excluding kimchi/pickles (OR=0.89, 95% CI: 0.79-0.99), and protein-rich foods (OR=0.87, 95% CI: 0.77-0.99). Conversely, shift workers had better adherence to recommended sodium intake (OR=1.19, 95% CI: 1.06-1.34). Gender-stratified analysis revealed lower fruit intake among male shift workers and more frequent breakfast skipping and lower fruit/protein intake among female shift workers. CONCLUSION: Among Korean adult workers, shift work was associated with unfavorable dietary patterns, characterized by increased breakfast skipping and lower intake of fruits, vegetables, and protein-rich foods. Tailored strategies to improve meal regularity and dietary balance are recommended for managing the health of shift workers.

[Lien vers l'article](#)

Low-grade inflammation score (INFLA- score) associated with metabolic syndrome and its components in shift workers.

Jiang S, Wang J, Guan X, An H, Tao N. *Diabetol Metab Syndr.* 2025 Oct 3;17(1):381.

OBJECTIVE: To explore the relationship between the low-grade inflammation score (INFLA-score) and metabolic syndrome (MetS) in shift workers working in the oilfield operations in Karamay City, Xinjiang, and to provide data support for the effective prevention of MetS through the reduction of systemic inflammatory responses. METHODS: INFLA-score was calculated based on C-reactive protein, leukocyte count, platelet count, and neutrophil-to-lymphocyte ratio (NLR) in 1,758 shift workers working at the oilfield base in Karamay City, Xinjiang, China, in the year 2023, as the study population.

A logistic regression analysis model combined with restricted cubic spline was used to analyze the relationship between INFLA-score and MetS and its components in shift workers. RESULTS: A total of 1758 shift workers were included, of whom 785 were diagnosed with MetS. Multifactorial logistic regression analysis showed that those with higher INFLA score had a higher likelihood of developing MetS (OR = 1.08, 95% CI: 1.07-1.10). In the Q1-Q4 INFLA quartile group, the risk of developing MetS was 3.58 times higher in the Q4 group than in the Q1 group. After adjusting for all confounders, INFLA-score was found to be positively associated with elevated blood glucose, blood pressure, waist circumference, triglyceride levels, and lower HDL ($p < 0.001$). Restricted cubic spline results showed a dose-response relationship between INFLA-score and MetS and its components. In subgroup analyses and interaction tests, women had a higher risk of MetS than men (men: OR = 1.07, 95% CI: 1.05-1.09, $p < 0.001$; women: OR = 1.13, 95% CI: 1.09-1.16, $p < 0.001$), and the interaction showed that there was an effect of the association between sex and INFLA score on the occurrence of MetS (interaction $p < 0.05$). CONCLUSIONS: Elevated INFLA-score was associated with MetS among shift workers, and the INFLA-score was a simple, cost-effective test for MetS. Therefore, MetS can be combated by controlling the levels of inflammatory factors in shift workers.

[Lien vers l'article](#)

Lifestyle Factors in the Association of Shift Work With Kidney Stone Events.

He M, Dou X, Su Y, Zhang Z, Lin H, Yang Y. *Mayo Clin Proc.* 2025 Oct;100(10):1731-44.

OBJECTIVE: To explore the associations of shift work, its type and frequency, and working years with kidney stone events and to further explore the mediating role of lifestyles in this association. PARTICIPANTS AND METHODS: A total of 226,459 participants of the UK Biobank recruited between December 19, 2006, and October 1, 2010, and followed up until May 1, 2023, were included in this study. During the baseline investigation, we questioned participants about their occupational status, including shift work, shift type, shift frequency, and years of shift work. Lifestyles included physical activity, smoking status, dietary characteristics, sleep duration, sedentary time, body mass index, and fluid intake. Cox proportional hazards regression models were used to analyze the association of shift work with kidney stone events, and mediation analyses were used to examine the mediating effects of lifestyles. RESULTS: During a median follow-up of 13.7 years, a kidney stone developed in 2893 participants. In the fully adjusted models, individuals who did shift work had a higher risk of kidney stone events (hazard ratio, 1.15; 95% CI, 1.04 to 1.26). These associations were more pronounced among younger participants (less than 50 years old) and workers who never or rarely dealt with heavy manual labor. Smoking, sleep duration, sedentary time, body mass index, and fluid intake were identified as the potential mediators. CONCLUSION: In this study, shift work was positively associated with the risk of kidney stone events, and lifestyles partially mediated the associations. These findings suggest that shift work should be considered as a risk factor for kidney stones and emphasize the need for promoting healthy lifestyles among shift workers.

[Lien vers l'article](#)

Disrupted Rhythms, Disrupted Microbes: A Systematic Review of Shift Work and Gut Microbiota Alterations.

Grasa-Ciria D, Couto S, Samatán E, Martínez-Jarreta B, Cenit MDC, Iguacel I. *Nutrients.* 2025 Sep 7;17(17).

Background: Shift work, especially during nighttime hours, disrupts the circadian system and is linked to higher rates of metabolic, gastrointestinal, cardiovascular, and neurocognitive disorders. Emerging evidence suggests that gut microbiota may mediate these associations. This systematic review assessed whether shift work alters gut microbiota composition and explored potential health consequences. Methods: A systematic search was conducted in PubMed, Scopus, and ScienceDirect

from inception to March 2025. Studies reporting gut microbiota alterations in adult shift workers were included. Two reviewers independently screened articles and extracted data. Risk of bias was assessed using the NIH Quality Assessment Tool and the ROBINS-E framework. Five studies met the eligibility criteria and were included in the final synthesis. Results: The selected studies comprised four observational investigations with small sample sizes and one Mendelian randomization study leveraging large-scale genetic datasets. Observational studies reported reduced α -diversity and increased relative abundance of pro-inflammatory genera-including *Escherichia/Shigella*, *Blautia*, and *Dialister*-in night shift workers. These microbiota alterations were associated with gastrointestinal complaints and indicators of cardiometabolic dysfunction. The Mendelian randomization study provided preliminary evidence supporting a causal relationship between circadian misalignment, gut dysbiosis, and increased cardiovascular risk. Conclusions: Shift work is associated with significant alterations in gut microbiota composition that may contribute to adverse health outcomes. However, current evidence is limited and heterogeneous, preventing firm causal conclusions. Further high-quality longitudinal and interventional research is needed to clarify underlying mechanisms and inform preventive strategies.

[Lien vers l'article](#)

Impact of night shift work on telomere length and epigenetic age in older workers.

Ferrari L, Comotti A, Fattori A, Barnini T, Laurino M, Bufano P, et al. *J Occup Med Toxicol*. 2025 Oct 1;20(1):31.

BACKGROUND: Night shift work disrupts circadian rhythms and has been associated with various health disorders, particularly in older adults. Biological age indicators, such as telomere length (TL) and DNA methylation (DNAm) age, offer effective tools to assess early ageing-related changes Linked to occupational exposures. This study aims to investigate the association between night shift work and biological ageing markers among workers aged over 50 years. **METHODS:** Participants were classified as current, former, or never night shift workers. TL was measured via quantitative PCR, and DNAm age was estimated based on methylation at five CpG sites. Age acceleration (AA) was calculated as the residual from regressing DNAm age on chronological age. Associations between shift work and ageing markers were evaluated using univariate and multivariate analyses. **RESULTS:** Out of 330 workers invited, a total of 262 (response rate 79.6%) were recruited, predominantly male (87%) with a mean age of 54.5 ± 3.1 years. Current night shift workers exhibited significantly shorter telomeres compared to non-current shift workers (adjusted $\beta = -0.07$, $p = 0.03$). Among former shift workers, longer cumulative exposure was associated with reduced TL ($\beta = -0.01$, $p = 0.004$). Additionally, TL increased and AA decreased with each year since night shift cessation ($\beta = 0.01$, $p = 0.001$ and $\beta = -0.08$, $p = 0.05$, respectively). **CONCLUSIONS:** Prolonged night shift work is associated with telomere shortening, suggesting increased cellular ageing, partially reversible after night-shift cessation. DNAm age appears less sensitive to recent or cumulative shift work exposure.

[Lien vers l'article](#)

The Association Between Night Shifts and Irritable Bowel Syndrome.

Karkra R. *J Gastroenterol Hepatol*. 2025 Oct 1.

[Lien vers l'article](#)

Cancers

Night shift work and risk of colorectal cancer: a prospective cohort study among 56 477 female nurses in the Netherlands.

de Bruijn L, Berentzen NE, Vermeulen RCH, Vlaanderen JJ, Kromhout H, Jóźwiak K, et al. *Occup Environ Med*. 2025 Sep 14.

OBJECTIVES: Night shift work has been classified as probably carcinogenic to humans, possibly related to suppression of melatonin secretion. Although experimental studies suggest that melatonin inhibits intestinal tumor proliferation, epidemiological evidence for a relationship between night shift work and colorectal cancer (CRC) risk is lacking. **METHODS:** We prospectively examined the association between night shift work and CRC in the Nightingale Study. We included 56 477 Dutch female nurses who completed a questionnaire in 2011, including occupational history with detailed (historical) information on night shift work. Until February 2025, 468 incident CRCs were recorded. Age-adjusted HRs and 95% CIs for associations between night shift work variables and CRC risk were estimated using Cox regressions. **RESULTS:** CRC risk did not differ between nurses who ever or never worked night shifts (HR=1.13; 95% CI=0.89 to 1.44). A longer duration of working night shifts (≥ 20 years: HR=1.19; 95%CI=0.89 to 1.60) was neither associated with CRC risk. However, a higher average number of consecutive night shifts per month (continuous per shift; HR=1.04, 95%CI=1.00 to 1.07) and a higher cumulative number of performed night shifts (continuous per 250 shifts: HR=1.02; 95%CI=1.00 to 1.04) were associated with a slightly increased risk. Chronotype did not affect the associations of CRC risk with night shift work. **CONCLUSIONS:** Although a longer duration of night shift work was not associated with CRC risk, both a higher frequency of and a higher cumulative exposure to night shifts were associated with slightly higher risk, suggesting a potential association between extensive exposure to night shift work and CRC risk.

[Lien vers l'article](#)

Risque routier, accidentologie

Association of non-standard working time arrangements with safety incidents: a systematic review.

Moen LV, JA SL, Sterud T, Christensen JO, Haugen F, Skogstad M, et al. *BMJ Open*. 2025 Sep 21;15(9):e100931.

OBJECTIVE: To systematically review the evidence on the association between non-standard working time arrangements (such as night work or shift work) and the occurrence of safety incidents. **DESIGN:** Systematic review conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and using a structured narrative approach and the Synthesis Without Meta-analysis framework to evaluate and summarise findings. **DATA SOURCES:** MEDLINE, Embase, PsycINFO, Web of Science and ProQuest Health and Safety Science Abstracts were searched through February 2024. **ELIGIBILITY CRITERIA FOR SELECTING STUDIES:** We included peer-reviewed English-language studies of paid workers (18-70 years) that examined the association between non-standard working time arrangements and safety incidents (accidents, near-accidents, safety incidents or injuries), excluding cross-sectional designs and studies on unpaid workers, athletes or military personnel. **DATA EXTRACTION AND SYNTHESIS:** Two reviewers independently extracted data and assessed risk of bias using standardised forms, extracting study characteristics (author, year, country, sector and population), working time arrangements and exposure assessment, outcomes and their assessment, and reported risk estimates. We conducted a narrative synthesis, classifying studies into three exposure contrasts (shift worker versus non-shift worker, time-of-day and shift intensity), and summarised risk estimates using forest plots without calculating pooled effects. **RESULTS:** A total of 13 569 records were screened, and 24 studies met the inclusion criteria. The results indicated that shift

workers generally had an elevated safety incident risk compared with non-shift workers (risk estimates ranged from 1.11 to 5.33). Most of the included studies found an increased risk of safety incidents during or after night shifts. Accumulated exposure to evening or night shifts increased the risk of safety incidents during the following 7 days. However, bias and heterogeneity across studies in design, populations and outcome measures resulted in an overall low to very low certainty of the evidence. CONCLUSIONS: Non-standard working time arrangements, including night and evening shifts, appear to increase the risk of occupational safety incidents. Despite the low certainty of evidence, the findings highlight a potential area for preventive measures in work scheduling. Future longitudinal studies using individual data on daily working hours are needed.

[Lien vers l'article](#)

RPS et QVT

Self-Regulation Mediates the Relationship Between Stress and Quality of Life in Shift-Working Healthcare Professionals: Behavioral Clustering Insights.

Salahuddin MF, Walker J, Zambrana EH, Gupta V, Jung K, Pandi-Perumal SR, et al. *Eur J Investig Health Psychol Educ.* 2025 Sep 6;15(9).

The psychological mechanisms through which occupational stress impacts quality of life remain underexplored in shift-working healthcare professionals, a population exposed to unique stressors such as circadian disruption, high cognitive demands, and irregular work schedules. This study examined whether executive self-regulation mediates the relationship between perceived stress and quality of life in a sample of 82 shift-working healthcare professionals. Participants completed validated self-report measures, including the Perceived Stress Scale (PSS-4), Executive Skills Questionnaire-Revised (ESQ-R), and Quality of Life Scale (QOLS). Mediation analysis using 5126 bias-corrected bootstrapped samples revealed that perceived stress significantly predicted self-regulation difficulties, which in turn were associated with diminished quality of life. Self-regulation demonstrated an indirect-only mediation effect in both directions, though the forward path (stress → self-regulation → QOL) showed a stronger effect (indirect effect = -0.79; 95% CI: -1.63, -0.17), compared to the reverse path (QOL → self-regulation → stress; indirect effect = -0.04; 95% CI: -0.08, -0.01). Unsupervised K-means clustering identified three distinct behavioral clusters: resilient, low-strain, and high-strain, providing further support for personalized targeted interventions. These findings highlight self-regulation as a central mechanism through which stress affects quality of life and underscore the need for interventions that strengthen executive functioning in shift-based healthcare settings.

[Lien vers l'article](#)

The reality of neonatal nursing work in Kenya and implications for quality and safety: Direct observation of tasks and time utilisation.

Onyango O, Kagonya VA, Maina M, Karumba K, Imam A, Fuller SS, et al. *Int J Nurs Stud.* 2025 Sep 8;172:105204.

BACKGROUND: Little is known about how nurses working in care settings affected by remarkably high workloads and workforce constraints manage their work and time to deliver needed care. OBJECTIVE: This study aimed to characterise nursing workflows and examine time allocated to care in high mortality, intermediate care Kenyan neonatal units. DESIGN AND METHODS: Using 'shadowing' as a time and motion technique, we directly observed 1-2 nurses per 12-hour shift in 8 Kenyan county hospitals. We used an Activity Log Sheet to document their activities during the shift and thematic content analysis of observation notes to classify and group tasks performed. In a second phase, we documented the time spent on specific critical tasks and instances of multi-tasking and care

interruptions. RESULTS: We directly observed 499 person-hours over 36 day shifts and 15 night shifts. A typical day and night shift had a median of 38 (25-47) and 32 (18-44) babies respectively with a median nursing hours per-patient per-shift of 0.9 (0.5-1.2) hours. We recorded 1891 task episodes comprised of 36 different tasks that we grouped into eight workflow domains. Most tasks involved: direct patient care (37 %) or indirect patient care (23 %) with communications, documentation and reporting, staff or student supervision and mentorship, interruptions, personal breaks, and rest less frequently performed tasks. Nurses commonly devoted up to 20 minutes even to critical tasks while continuing to multi-task and managing more than 2 instances of interruptions during a newborn caring task. CONCLUSIONS: Kenyan neonatal nurses perform direct and indirect patient caring tasks while grappling with demanding housekeeping, administrative, and clinical teaching and mentorship roles under extremely limited time availability. Time allocated even to complex tasks is minimal and rarely given full focus, threatening patient safety. Our findings highlight opportunities to redistribute basic non-clinical roles for enhanced patient and caregiver experience. Even so, nurse staffing must be substantially improved.

[Lien vers l'article](#)

Effects of the use of a shift schedule evaluation tool with ergonomic recommendations on employee wellbeing - a quasi-experiment in the Finnish healthcare sector.

Karhula K, Shiri R, Ervasti J, Koskinen A, Ropponen A, Sallinen M, et al. *Appl Ergon.* 2025 Sep 11;130:104638.

We investigated the effects of a shift schedule evaluation tool with ergonomics recommendations on employee wellbeing. The study sample was from the Finnish Public Sector study (n = 7002 employees). The shift planners' use of the shift schedule evaluation tool was linked to employees' self-reported wellbeing outcomes. Inverse probability weights, reflecting the likelihood of the evaluation tool's use by the shift planner, were calculated using multilevel mixed-effects logistic regression for each participant and logistic regression for each ward. Wards using the tool (intervention group) were compared to those not using it (control group) with a generalized linear model. No association was found between the tool's use and wellbeing at the ward level. In the individual level, lower psychological distress was found in the intervention group (Risk ratio 0.92, 95 % Confidence interval 0.85-0.99). More rigorous use of the tool may be necessary to achieve significant benefits for wellbeing.

[Lien vers l'article](#)

Working Time Traffic Light recommendations: development, use, and implementation in the Finnish social and healthcare.

Härmä M, Karhula K, Turunen J, Koskinen A, Shiri R, Sallinen M, et al. *Ind Health.* 2025 Sep 15.

The Working Time Traffic Light (WTTL) recommendations are detailed guidelines aimed at mitigating the health and safety effects of shift work. This paper reviews the development, implementation, and effects of the WTTL recommendations in social and healthcare. Based on the payroll-based Working Hours in the Finnish Public Sector (WHFPS) cohort of over 300,000 employees, we analysed many dose-response associations of different working hour characteristics with health and safety and developed cut-off levels and evaluation tools for the traffic light-based WTTL recommendations. The recommendations were implemented in the social and healthcare sector by embedding the recommendations into shift scheduling software in co-operation with commercial software producers, and by giving feedback on the working hour characteristics to the healthcare organizations and policymakers. Based on a 5-year follow-up, the WTTL recommendations were well-known, and used regularly by 20% of the shift planners. Compared to the non-users, the regular use of the evaluation tool was associated with improved working hour patterns, a lower number of occupational accidents,

and a decrease in psychological distress. Based on the established use of the recommendations and their effects on health and safety, the development and implementation of the WTL recommendations can be regarded as successful.

[Lien vers l'article](#)

Cross-Sectional Comparison of Physical Activity, Sedentary Behaviour, and Sleep in Shift and Non-Shift Workers Using Wrist and Thigh Accelerometers.

Fenwick MJ, Oftedal S, Kolbe-Alexander T, Dumuid D, Duncan MJ. *J Occup Environ Med.* 2025 Sep 18.

OBJECTIVE: Investigate differences in device-measured physical activity, sedentary behaviour, and sleep between shift and non-shift workers, focusing on variations during work and leisure periods. **METHODS:** Full-time employed adult participants from Newcastle, Australia, wore thigh and wrist accelerometers for 14 days to assess activity and sleep. Activity was classified into sedentary, standing, light-intensity physical activity (LIPA), and moderate to vigorous physical activity (MVPA). Linear mixed models and compositional data analysis were employed to assess behavioural time allocation. **RESULTS:** Forty-nine participants (shift = 33, non-shift = 16) completed the study. During work periods, shift workers were less sedentary (-79.40 minutes, $p = 0.031$) and engaged more in LIPA (+39.95 minutes, $p = 0.044$), but were more sedentary during leisure (+93.59 minutes, $p = 0.019$). **CONCLUSIONS:** Distinct differences during work and leisure highlight the need for domain-specific analysis.

[Lien vers l'article](#)

Shift Schedule With Fewer Short Daily Rest Periods and Sickness Absence Among Health Care Workers: A Cluster Randomized Clinical Trial.

Djupedal ILR, Harris A, Svensen E, Lie SA, Wang ALH, Pallesen S, et al. *JAMA Netw Open.* 2025 Sep 2;8(9):e2531568.

IMPORTANCE: Some shift work arrangements allow for less than 11 hours off between shifts. The consequences of short daily rest periods are currently not well understood. **OBJECTIVE:** To determine the effect and cost-benefit of reducing the number of short daily rest periods on sickness-related absence among health care workers. **DESIGN, SETTING, AND PARTICIPANTS:** This 2-arm cluster-randomized clinical trial was conducted between January 11, 2021, and May 22, 2022, in hospital care units at Haukeland University Hospital in Bergen, Norway. Statistical analysis was performed from April to May 2025. **INTERVENTION:** The intervention group followed a 6-month shift schedule with reduced instances of short daily rest periods, whereas the control group adhered to a 6-month shift schedule maintaining the usual number of short daily rest periods. **MAIN OUTCOMES AND MEASURES:** Primary analyses followed intention-to-treat principles. The outcome was change in sickness-related absence days and absence spells (ie, each uninterrupted period of ≥ 1 consecutive sickness-related absence days) over the final 5 months of the intervention (allowing a 1-month stabilization period), compared with the same period in the preceding year and against a control group. The economic returns, measured as the increase in net present value of production from reduced sickness-related absence days due to the intervention, was estimated using a standard cost-benefit formula. **RESULTS:** Of 66 hospital units with 811 health care workers (mean [SD] age, 39.8 [12.8] years; 626 of 808 women [77.5%]) in 80% or more full-time positions, 31 units (344 workers) were randomized to the intervention group and 35 units (467 workers) to the control group. The mean (SD) number of short daily rest periods among the intervention group was halved from 18.0 (8.4) during the reference period to 9.1 (6.2) in the intervention period, while the frequency remained unchanged among the control group (reference period, 18.3 [8.3] days; and intervention period, 17.5 [8.4] days). The intervention group showed a significantly smaller increase in sickness-related absence days (incidence rate ratio [IRR], 0.56; 95% CI, 0.41-0.79; $P < .001$) and spells (IRR, 0.73; 95% CI, 0.61-0.86; $P < .001$) compared

with the control group. The effect on sickness-related absence days in the intervention units resulted in a positive estimated net economic return of approximately NOK 2 174 620 (USD \$213 600) over 5 months. **CONCLUSIONS AND RELEVANCE:** In this randomized clinical trial of health care workers, reducing the frequency of short daily rest periods had positive effects on sickness-related absences and reduced expenses. These findings should guide organizational practices and inform legislative policies to enhance the health of workers by increasing daily rest periods to 11 hours or more between shifts. **TRIAL REGISTRATION:** ClinicalTrials.gov Identifier: NCT04693182.

[Lien vers l'article](#)

Beyond 12 hours: A national survey of neonatal nurse practitioners perceptions on shift length and professional practice.

Bell TR, Hoffman J, Farmer ML. *J Am Assoc Nurse Pract.* 2025 Oct 3.

BACKGROUND: The neonatal nurse practitioner (NNP) is a pivotal member of the neonatal intensive care unit (NICU) care team. To ensure 24-hour coverage in this high-acuity environment, NNPs often work shifts exceeding 16 hours. However, little is known about how prolonged shifts affect NNP fatigue, clinical performance, and overall well-being. **METHODS:** A mixed-methods survey was distributed via postcards containing a QR code to board-certified NNPs. The survey assessed demographics, shift practices, and perceptions of fatigue when working shifts greater than 16 hours. **RESULTS:** A total of 623 participants initiated the survey; 371 completed all items. Most were experienced NNPs working in level III NICUs. Preferred shift lengths included 24-hour and 12-hour day shifts. Awareness of the National Association of NNP position statement on shift length was high (73%), with 76% agreeing with its recommendations. Over half (51%) supported continuing 24-hour shifts. Eighty-five percent agreed that unit census/acuity contributes to fatigue. Nearly half (49%) reported feeling unsafe driving after shifts >16 hours; among those who did acknowledge feeling unsafe to drive, this occurred an average of 17% of the time. Sixty percent denied ever feeling unable to perform duties after extended shifts; among those who did, the average frequency was 17.4%. **CONCLUSIONS:** Neonatal nurse practitioners report a preference for extended shifts despite acknowledging associated fatigue-related concerns. Although these findings provided valuable subjective insight, findings are limited by self-reporting and sample representation. **IMPLICATIONS:** Additional objective data and qualitative analysis are needed to guide evidence-based strategies that prioritize both provider well-being and patient safety.

[Lien vers l'article](#)

Temporary nurse deployments: a time-series analysis of shift scheduling dynamics and staffing level alignment.

Ahmadi Shad M, Khorasanizadeh M, Musy SN, Zúñiga F, Atoof F, Simon M. *Int J Nurs Stud Adv.* 2025 Dec;9:100383.

INTRODUCTION: Hospitals deploy temporary nurses to bridge staffing gaps. However, evidence remains inconclusive regarding the extent, patterns, and factors driving temporary deployment. This study aimed to describe how temporary nurses are deployed as a response to shift-level schedule deviations and shortfalls in planned schedules. **METHODS:** Our four-month time-series analysis covered 1344 shifts across two medical and two surgical units in a tertiary hospital in Iran. Shift-level data included nursing staff numbers, the skill mix, staff absences and the patient count and turnover. The patient-to-nurse ratio was used to gauge staffing levels. Data were analysed using both descriptive and analytical approaches, including the fitting of three generalized linear mixed models to assess potential drivers of shifts involving temporary RNs. **RESULTS:** Temporary nurses worked on 12.2 % of shifts with the majority being Registered Nurses (RNs) (81.7 %). Only 28.5 % of deviations led to temporary RN deployments. While students and aides were sometimes reallocated to fill absences,

the majority of absences (57.1 %) went unaddressed. Temporary staff mainly worked on shifts with below-average RN-staffing. Unit-level deployment rates varied widely (3.6 %-55.9 %). Model 1 revealed that RN absence increased the odds of using a temporary RN by 2.14 times (AIC = 785.1). Model 2 indicated that each additional patient, increased the odds by 11 % (AIC = 740.7). Model 3 showed that when RN-staffing was below-average the odds of using a temporary RN were 3.96 times higher than the average level (AIC = 707.4). CONCLUSION: Temporary nurse deployment was relatively infrequent. While temporary nurses were strategically deployed to address understaffing and short-notice deviations, their deployment did not fully bridge the staffing needs. On high-demand units, temporary staff were commonly supplemented by reallocating students. Some temporary deployments occurred even where RN-staffing was at an average level. These findings indicate an urgent need to enhance the effectiveness of temporary deployment and optimize workforce resources to ensure high-quality care.

[Lien vers l'article](#)

Correction to "How Shift Schedules Shape Nurses' Sleep and Compassion: A Comparative Study".

Int Nurs Rev. 2025 Sep;72(3):e70106.

[Lien vers l'article](#)

Santé psychique

The Impact of Rotating Shift Work on Nurse Burnout: A Systematic Review of Contributing Factors and Organizational Strategies.

Qtait M, Alia MF, Jaradat Y. *SAGE Open Nurs.* 2025 Jan-Dec;11:23779608251374232.

BACKGROUND: Nurse burnout remains a significant global challenge, exacerbated by rotating shift work, which disrupts circadian rhythms and contributes to psychological strain. Burnout is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment-outcomes that can compromise patient care and workforce stability. OBJECTIVE: This systematic review examines the association between rotating shift work and nurse burnout, focusing on how specific shift characteristics influence each burnout dimension and exploring contextual moderators such as organizational support and work environment. METHODS: A systematic search of PubMed, Scopus, CINAHL, and PsycINFO was conducted to identify peer-reviewed studies published between 2015 and 2023. Eligible studies investigated hospital-based nurses and evaluated the effects of rotating shift work on burnout outcomes. The Joanna Briggs Institute (JBI) appraisal tool was used for quality assessment. Data were synthesized thematically due to study heterogeneity. RESULTS: Fifteen studies were included, primarily cross-sectional in design, with significant variability in burnout measurement tools and shift definitions. Emotional exhaustion was consistently associated with night shifts and irregular rotations. Depersonalization was linked to excessive workload and low social support, while reduced personal accomplishment appeared in contexts of prolonged shift exposure. Organizational support, sleep hygiene, and job autonomy emerged as potential protective factors. However, the lack of quantitative synthesis, high reliance on self-reported data, and publication bias limit the strength of conclusions. CONCLUSION: Rotating shift work contributes significantly to nurse burnout, especially emotional exhaustion. The findings underscore the need for more longitudinal studies, standardized burnout assessments, and tailored interventions. Future research should incorporate effect sizes, subgroup analyses, and moderator evaluations to enhance evidence-based recommendations for shift scheduling and occupational health.

[Lien vers l'article](#)

Troubles cognitifs et de la vigilance

Night Shift Work and Sleep Experiences in Older Night Shift Nurses.

Zhang Y, Murphy A, Lammers-van der Holst HM, Barger LK, Duffy JF. *West J Nurs Res.* 2025 Oct;47(10):904-11.

BACKGROUND: Working at night leads to misalignment between the biological clock and the work/sleep schedule, resulting in sleepiness and impaired performance during the night shift and poor quality, shortened sleep during the day; this is greatly impaired in older individuals. **OBJECTIVE:** To describe night work and sleep experiences from the perspective of older (aged 50-65) nurses. **METHODS:** Seven virtual focus groups were formed comprising 19 older nurses who worked regular 8-hour night shifts (at least 6 consecutive hours between midnight and 6 am) to learn about their shift work and sleep experiences. Two facilitators and 2 research assistants independently reviewed and coded the transcripts using qualitative content analysis. **RESULTS:** Nine themes were identified in 3 domains: (a) night shift challenges and difficulties, including first night shift is most difficult; never feel rested working nights; and personal health concerns and benefits from working nights; (b) sleep challenges and difficulties, including inconsistent sleep timing when switching between nights and days; extended (24+ hours) time awake before and after consecutive nights; difficulty maintaining long and sound daytime sleep; and napping before night shifts for better performance; and (c) family and social challenges and support, including childcare, family, personal obligations, and social activities affect sleep; aging of self and children influences sleep and prioritization of sleep. **CONCLUSIONS:** The findings help understand challenges and struggles to obtain adequate sleep and safe work performance in older night shift nurses. These insights are critical for designing and implementing feasible and acceptable interventions to improve sleep in this high-risk occupational group.

[Lien vers l'article](#)

Relationship between shift scheduling, sleep knowledge and sleep quality in medical trainees: protocol for a global cross-sectional survey.

Zhang C, Spruyt K, Komolafe M, Mutschelknaus M, DelRosso LM, Steier J. *J Thorac Dis.* 2025 Aug 31;17(8):6339-47.

BACKGROUND: Although many studies suggest that shift work and nocturnal on-call rotations are associated with adverse outcomes in medical trainees' health, evidence regarding the optimal frequency and duration of shifts that balance trainee well-being, patient safety, and medical education remains limited. Additionally, the level of medical trainees' knowledge about sleep medicine and its possible relationship with their well-being during on-call periods remains unclear. **METHODS:** This study protocol was designed in collaboration between professional sleep physicians from the USA, UK, Nigeria and France as a global multi-centred, cross-sectional, online survey conducted through a secure online link (REDCap 14.0.42, Vanderbilt University, USA). The proposed design covers demographic characteristics, different specialties, work conditions, on-call situations, sleep, mood, and social issues, as well as other relevant health factors. The methodology includes univariate, multivariate analyses, and regression models. The intended analysis aims to investigate the impact of on-call duties, as well as sleep knowledge, on the sleep quality and well-being of medical trainees. **DISCUSSION:** Through this study, we expect to explore how different shift scheduling patterns and levels of sleep knowledge may be associated with the sleep quality of medical trainees. In addition, cross-cultural comparisons among diverse linguistic and cultural contexts will be examined. **TRIAL REGISTRATION:** The study is registered on ClinicalTrials.gov (NCT06706453).

[Lien vers l'article](#)

Prefrontal cortex hypoactivation in response to sleep-related pictures in shift workers.

Yeo H, Lee KH, Shin J, Seo M, Lee YJ, Kim SJ. *Brain Struct Funct.* 2025 Sep 18;230(8):145.

Shift work can lead to mental health issues such as sleep disturbances and cognitive impairment. Neural activation in response to external sleep-related stimuli may vary according to shift work patterns. In this study, we investigated the differences in brain activity in response to sleep-related stimuli between shift-worker (SW) nurses and healthy controls (HCs), and we also assessed the relationships between sleep-related problems and brain activity. The hypothesis was that shift workers would exhibit altered activation in the prefrontal cortex (PFC) when processing sleep-related stimuli, reflecting attentional biases associated with sleep disturbances. Participants completed a cognitive task during functional magnetic resonance imaging that involved viewing sleep-related and neutral pictures. Subjective sleep was assessed using self-reported questionnaires and a 1-week sleep diary. Objective sleep parameters, along with the 24-h rest-activity rhythm, were evaluated via actigraphy conducted over 1 week. We analyzed group differences in the neural processing of sleep-related stimuli and conducted correlation analyses to explore the associations between brain activity and sleep parameters. This study included 44 SWs and 37 HCs. Compared to HCs, SWs demonstrated significantly lower activity in the dorsomedial prefrontal cortex (DMPFC) and lateral prefrontal cortex (LPFC) in response to sleep-related pictures than neutral pictures. DMPFC activity was significantly negatively correlated with subjective sleep problems (e.g., self-reported insomnia and fatigue), whereas LPFC activity was strongly correlated with actigraphy-measured 24-h rest-activity rhythm parameters (e.g., a robust 24-h rhythm). The decreased activation of the prefrontal cortex in response to sleep-related stimuli in SWs may reflect diminished attentional control over sleep and increased rumination on intrusive sleep-related thoughts. These findings enhance our understanding of the neurobiological mechanisms underlying sleep-related issues in SWs and may inform interventions to mitigate mental health problems in this population.

[Lien vers l'article](#)

Effects of a 12-hour shift system on sleep and cardiovascular health of male machine and plant operators - a longitudinal study over four years.

Seibt R, Kreuzfeld S, Hunger B. *Front Public Health.* 2025;13:1616810.

BACKGROUND: Data on the risks and effects of shift systems involving night work are inconsistent. In particular, there is a lack of longitudinal studies on the impact of 12-h shift systems on indicators of sleep, cardiovascular health and work-life balance. Therefore, this study compared machine and plant operators (MPO) who worked in a rotating 12-h shift system or only during the day, both at baseline (T1) and at follow-up 4 years later (T5). **METHODS:** Data were collected annually and included a questionnaire on shift work and sleep as well as a cardiovascular screening programme. The sample for analysis consisted of 45 shift (SW) and 30 day workers (DW) (mean age T1: 40 years). Sleep behaviour was examined by sleep quality and quantity (PSQI score), cardiovascular health by blood pressure, body mass index (BMI), blood lipids, glycosylated haemoglobin (HbA1c) and PROCAM score. Work-life balance was assessed on the basis of life satisfaction and impairments. Analyses of covariance with repeated measures were used to determine longitudinal changes in the indicators between T1 and T5. **RESULTS:** At T1, SW showed significantly poorer sleep quality ($d = 0.58$) and shorter sleep duration ($M = 366$ min vs. 438 min, $d = 1.38$) compared to DW. These effects increased significantly in SW only after night shifts at T5 ($M = 5.1$ pts, $\eta^2(2) = 0.13$, sleep duration: $M = 318$ min). At T1, SW differed from DW only by a significantly higher blood pressure ($d = 0.60/0.49$), BMI ($d = 0.68$) and PROCAM score in trend ($p = 0.122$). Lipids and HbA1c were comparable between the two groups. The means of the PROCAM score were in the low-moderate range, predicting a risk of heart attack $<10\%$ for 87% of the MPOs. At T5, the group differences for cardiovascular health from T1 were confirmed. SW achieved significantly higher satisfaction at T5 ($\eta^2(2) = 0.22$); it corresponded

to that of DW. Both groups reported significantly fewer impairments at T5 ($d = 0.68/0.58$).
CONCLUSION: At T5, the 12-h shift system demonstrably changed sleep behaviour but not cardiovascular health. Sleep deficits could not be compensated. The 12-h shift system seems to offer advantages for work-life balance.

[Lien vers l'article](#)

Fatigue assessment of forklift operators in a 12-hour shift system.

Wang T, Öztürk I, Lyu W, Ning Z. *Work*. 2025 Sep 24:10519815251377003.

BackgroundIn recent years, numerous large-scale manufacturing enterprises in Northeastern China have shifted from the conventional 8-h shift model to an extended 12-h shift schedule. While this change aims to improve production efficiency, prolonged working hours may lead to increased levels of occupational fatigue and pose significant risks to worker health and safety.
ObjectiveThis study aimed to assess the physiological and subjective fatigue responses among forklift operators working 12-h shifts, with particular emphasis on differences between day and night shifts, as well as gender-based variations in fatigue susceptibility.
MethodsTen forklift truck operators were recruited from a major tire manufacturing enterprise that had implemented a 12-h shift system. Subjective fatigue was measured through self-reported assessments, while objective indicators were captured using surface electromyography (sEMG) and electroencephalography (EEG). Data were collected at multiple time points across both day and night shifts to monitor changes in fatigue levels.
ResultsFindings revealed that most operators experienced significant fatigue after 8 h of work, even when shifts extended to 12 h. Fatigue and drowsiness symptoms were more pronounced among night shift workers, with critical fatigue peaks observed between 14:30-16:00 and 2:30-4:00. Gender-based analysis showed negligible differences in daytime fatigue; however, female operators exhibited greater fatigue and drowsiness during night shifts compared to male counterparts.
ConclusionsExtended 12-h shifts are associated with considerable fatigue, especially during night work, posing potential safety concerns in industrial environments. The identification of specific fatigue-prone periods and gender-related differences underscores the need for tailored fatigue risk management strategies and evidence-based shift scheduling policies to safeguard worker well-being and operational safety.

[Lien vers l'article](#)

To Nap or Not to Nap? Medical Managers' Views on Night Shift Fatigue Management.

Saleem Maabreh R, Mahran GSK, Khamies Mohamed N, Gamal Abd-Elhamed A. *Crit Care Nurs Q*. 2025 Oct-Dec 01;48(4):373-80.

Night shift work is a critical component of healthcare delivery, yet it poses significant challenges to the well-being and performance of healthcare professionals. This qualitative study explores the perceptions of medical managers regarding night shift napping, a potential strategy to mitigate fatigue and enhance patient safety. Using semi-structured interviews with 20 medical managers from various intensive care units at Assiut University Hospital in Egypt, we examined views on the benefits, challenges, and institutional support for sanctioned napping during night shifts. Thematic analysis revealed 3 key themes: (1) perceived benefits of napping; (2) barriers to implementation-such as concerns about professional image, staffing inadequacies, and operational disruptions; and (3) institutional support and policy gaps-highlighting a lack of formal guidelines, inconsistent leadership attitudes, and logistical challenges in creating designated nap areas. While many managers acknowledged the potential benefits of night shift napping, concerns about its practical implementation and impact on workflow persist. The findings suggest that developing clear policies, fostering a culture of safety, and addressing logistical constraints could enhance support for strategic napping as a fatigue management tool in healthcare settings. This study underscores the need for

further research and policy development to balance staff well-being with continuous, high-quality patient care.

[Lien vers l'article](#)

Differences in total sleep time and heart rate variability between shift types in firefighters.

Luedke J, Hinman J, Clark T, Zapp A, Jones MT, Fields JB, et al. *Occup Environ Med.* 2025 Oct 1.

OBJECTIVES: The purpose of the current study was to evaluate differences in total sleep time and heart rate variability (HRV) in active-duty firefighters between on-shift and off-shift days. **METHODS:** 59 structural firefighters (age: 37.3 ± 7.3 years; height: 1.80 ± 0.08 m; weight: 88.9 ± 14.1 kg and body mass index (BMI): 27.5 ± 4.1 kg/m²) participated in this longitudinal observation study. Each morning for 15 weeks, firefighters were asked to sync a smart ring with a smartphone application to download night-time data, which were then extracted to a cloud-based software application for later analysis. The software also computed a readiness score each morning. All day types were coded as on-shift or off-shift. **RESULTS:** The average nightly sleep time for all firefighters was 6.95 ± 1.24 hours. When off-shift, firefighters recorded more sleep compared with on-shift nights (off-shift: 6.97 ± 0.50 hours vs on-shift: 6.68 ± 0.52 hours; $p < 0.0001$). HRV ($p < 0.0001$) and readiness scores ($p = 0.02$) were lower off-shift compared with on-shift. For the lagged correlation analysis, total sleep time was moderately positively correlated with the following day's readiness score. **CONCLUSIONS:** Firefighters recorded more total sleep time when off-shift compared with on-shift; however, HRV and readiness scores were higher on-shift. The lag-time correlations indicate an association between sleep time and HRV or readiness scores, with approximately half of the variability in readiness being attributable to changes in total sleep time, which highlights the complexity of the readiness and HRV signals/systems.

[Lien vers l'article](#)

Impact of artificial light at night and night shift work on brain functions and metabolism.

Korf HW, Bittner N, Caspers S, von Gall C. *Gen Comp Endocrinol.* 2025 Sep 19;373:114822.

The present review focusses on artificial light at night (ALAN) and night shift work (NSW) as examples for chronodisruption occurring in modern societies. Chronodisruption can lead to significant sleep and health problems and increase the risk of chronic diseases. This pathomechanism involves endocrine systems (glucocorticoids, melatonin). ALAN affects at least 80% of mankind and disturbs physiological, biological and behavioral processes in wildlife. In humans, the nighttime use of illuminated screens contributes to ALAN, with as yet unforeseeable consequences for body and brain. Acute continuous light exposure triggers pro-inflammatory responses in the brain which may make it more vulnerable to additional aversive stimuli. Moreover, acute continuous light impairs cognitive function and synaptic plasticity and leads to an increase in corticosterone, a stress hormone and an important mediator in the circadian system. Several studies on NSW reported increased risk for sleep disorders, cancer, cardiovascular disease, type 2 diabetes, obesity, and depression. However, objective imaging analyses supplemented by neuropsychological examinations revealed that NSW has only minor effects on brain functions. Moreover, a recent study showed that NSW was not accompanied by metabolic, cardiovascular or immunological problems. In conclusion, ALAN may be considered a relevant factor influencing human health and biodiversity and should be avoided whenever possible. Studies on the effects of NSW report varying results. This may be due to differences in light intensity during shift, the quality of the occupational health service and the shift work schedule. All these aspects need further investigations to prevent or mitigate the health risk of NSW.

[Lien vers l'article](#)

Associations between shift work arrangements, sleep characteristics, urinary cortisol and melatonin levels among nurses in Hong Kong.

Li B, Li W, Lee PMY, Qiu S, Huss A, Ma JYT, et al. *Occup Environ Med*. 2025 Sep 16;82(7):335-42.

OBJECTIVES: Shift work disrupts hormonal rhythms, but evidence linking specific shift patterns to cortisol/melatonin variations remains limited. This study evaluated the associations of a rapid-rotating shift pattern (ie, PAN pattern, shift transitions from afternoon to morning to night shifts within approximately 40 hours) and irregular non-PAN pattern shifts with urinary cortisol and melatonin among Hong Kong nurses, while also assessing the role of sleep on rhythmic hormones. **METHODS:** A 7-day actigraphy-based study recruited 201 shift nurses and 100 daytime workers. First-morning voids on the first non-workday postnight shift or postoffice work measured cortisol and melatonin metabolite (aMT6s) levels. Actigraphy measured sleep parameters. Generalised linear models examined the associations. **RESULTS:** PAN pattern nurses slept less than non-PAN nurses (5.8 vs 6.4 hours) and exhibited greater circadian phase delay (16.4 vs 15.9 hours). Non-PAN nurses had the lowest cortisol, cortisone and aMT6s levels, with significantly reduced cortisol levels ($\beta = -0.31$, $p = 0.017$) compared with daytime workers. Sleep characteristics strongly influenced hormone levels, with each additional hour of sleep decreasing cortisol levels by 10.3%, while each later hour of wake-up time was associated with 3.9% lower cortisol levels; later sleep midpoints decreased melatonin by 5.1% per hour. A three-way interaction revealed weakened cortisol-sleep duration associations with later wake-up times in PAN nurses ($p = 0.032$). **CONCLUSIONS:** Irregular shifts, longer sleep duration and delayed wake-up time significantly reduced waking cortisol levels, while delayed sleep timing suppressed melatonin secretion. These findings highlight how shift arrangements and sleep characteristics disrupt hormonal rhythms in shift workers. Optimising shift patterns and sleep interventions (eg, prioritising duration/consistency) may mitigate circadian disruption and improve shift worker health.

[Lien vers l'article](#)

Association between shift work and brain age gap: a neuroimaging study using MRI-based brain age prediction algorithms.

Kim Y, Choi JY, Petrovskiy E, Lee W. *Front Aging Neurosci*. 2025;17:1650497.

BACKGROUND: Shift work is increasingly common and associated with numerous adverse health effects. Although studies show that shift work affects brain structure and neurological stress, its direct impact on brain aging remains unclear. Therefore, this study aims to investigate the association between shift work and brain aging using the brain age gap (BAG)-a neuroimaging biomarker calculated by comparing predicted brain age derived from structural magnetic resonance imaging (MRI) scans to chronological age. **METHODS:** Structural MRI data (T1-weighted and T2-weighted) were collected from 113 healthcare workers, including 33 shift workers and 80 fixed daytime workers. Brain age was estimated using seven validated machine learning models. BAG was calculated as the difference between predicted brain age and chronological age. Statistical analyses, including ANCOVA, adjusted for chronological age, sex, intracranial volume (ICV), education level, and occupational type. **RESULTS:** The association between BAG and shift work duration was also evaluated. Model performance varied (maximum $R(2) = 0.79$) and showed systematic age-related bias, typically underestimating brain age in older participants. Unadjusted analyses initially indicated lower BAG values in younger shift workers. However, after covariate adjustments, shift workers consistently exhibited significantly higher BAG values, suggesting accelerated brain aging. Two models retained statistical significance despite adjustment for potential confounders. Longer shift work duration correlated with a decreasing BAG trend, suggesting potential neuroadaptive changes or selective retention of resilient workers. **CONCLUSION:** These findings demonstrate that shift work is associated with accelerated apparent brain aging, even after controlling for systematic model bias and demographic covariates. The observed reduction in BAG with extended shift work exposure may

reflect adaptive or selective effects, emphasizing the need for longitudinal studies to clarify these mechanisms. This research highlights the importance of incorporating occupational exposures in neuroimaging and brain health investigations.

[Lien vers l'article](#)

Association Between Types of Shift Work and Physical Health Symptoms, Including Musculoskeletal Symptoms and Sleep Disturbance: Evidence from the 7th Korean Working Conditions Survey.

Jang JS, Kim SK, Hwang S, Jo H, Jeon HS. *J Occup Environ Med.* 2025 Sep 24.

OBJECTIVE: This study examined the associations between different types of shift work and health symptoms, including musculoskeletal symptoms and sleep disturbances, among South Korean workers. **METHODS:** Data from 43,011 participants in the 7th Korean Working Conditions Survey were analyzed. Multivariate logistic regression was used to estimate adjusted odds ratios (aORs) with 95% confidence intervals (CIs) for each shift type. **RESULTS:** Rotating shift work was significantly associated with low back pain (aOR = 1.31, 95% CI: 1.13-1.52), upper extremity pain (aOR = 1.31, 95% CI: 1.14-1.51), and waking up exhausted (aOR = 1.41, 95% CI: 1.20-1.64). Fixed shift workers had increased risks of anxiety (aOR = 1.77, 95% CI: 1.33-2.34) and depression (aOR = 2.08, 95% CI: 1.50-2.86). **CONCLUSION:** Rotating and fixed shift types are associated with adverse health outcomes. These findings support the need for shift type specific occupational health interventions and policy responses.

[Lien vers l'article](#)

Cross-Sectional Comparison of Physical Activity, Sedentary Behaviour, and Sleep in Shift and Non-Shift Workers Using Wrist and Thigh Accelerometers.

Fenwick MJ, Oftedal S, Kolbe-Alexander T, Dumuid D, Duncan MJ. *J Occup Environ Med.* 2025 Sep 18.

OBJECTIVE: Investigate differences in device-measured physical activity, sedentary behaviour, and sleep between shift and non-shift workers, focusing on variations during work and leisure periods. **METHODS:** Full-time employed adult participants from Newcastle, Australia, wore thigh and wrist accelerometers for 14 days to assess activity and sleep. Activity was classified into sedentary, standing, light-intensity physical activity (LIPA), and moderate to vigorous physical activity (MVPA). Linear mixed models and compositional data analysis were employed to assess behavioural time allocation. **RESULTS:** Forty-nine participants (shift = 33, non-shift = 16) completed the study. During work periods, shift workers were less sedentary (-79.40 minutes, $p = 0.031$) and engaged more in LIPA (+39.95 minutes, $p = 0.044$), but were more sedentary during leisure (+93.59 minutes, $p = 0.019$). **CONCLUSIONS:** Distinct differences during work and leisure highlight the need for domain-specific analysis.

[Lien vers l'article](#)

Cognitive factors increase the risk of shift work disorder through insomnia symptoms.

Harris R, Drummond SPA, Sletten TL, Wolkow AP. *Sleep Med.* 2025 Sep 10;136:106806.

OBJECTIVES: The primary aims of the current study were to 1) investigate whether cognitive factors are associated with an increased risk of shift work disorder (SWD), and 2) whether symptoms of insomnia and/or excessive sleepiness mediate this association. Additionally, a third exploratory aim of the study was to examine whether these mediators of insomnia and excessive sleepiness vary in the relationship between cognitive factors and two phenotypes of SWD (i.e., SWD with high insomnia and low excessive sleepiness (SWD-I), and SWD with high excessive sleepiness with or without high insomnia (SWD-E)). **METHODS:** Shift workers ($n = 126$), predominantly working a schedule involving

night shifts, completed a survey comprising measures of SWD risk, insomnia, excessive sleepiness, and cognitive factors, including pre-sleep cognitive and somatic arousal, dysfunctional beliefs about sleep, and sleep reactivity. RESULTS: Logistic regressions found cognitive factors were not associated with SWD risk. Mediation analysis showed insomnia symptoms mediated the impact of pre-sleep somatic arousal, dysfunctional beliefs about sleep, and sleep reactivity on high SWD risk. Of those at high risk of SWD (37 %), 43 % and 34 % had the SWD-I and SWD-E phenotype, respectively. Insomnia symptoms mediated the relationship between all cognitive factors and SWD-I, but not SWD-E. CONCLUSIONS: Although cognitive factors were not directly associated with SWD risk, insomnia severity, but not excessive sleepiness, was a significant cross-sectional mediator in the relationship between cognitive factors and risk of SWD. When exploring SWD phenotypes, cognitive factors were associated with a risk of having SWD when participants did not have excessive sleepiness (i.e., SWD-I). To expand on our findings, future research should investigate insomnia's role as a mediator in individuals diagnosed with SWD and to investigate the SWD phenotypes with larger samples.

[Lien vers l'article](#)

Sleep and well-being before and after a shift schedule change in ICU nurses: an observational study using wearable sensors.

Ito-Masui A, Sakamoto R, Kawamoto E, Motomura E, Tanii H, King ZD, et al. *J Occup Health*. 2025 Jan 7;67(1).

OBJECTIVES: This study aimed to evaluate, using wearable sensors, the impact of transitioning from an 8-hour to a 12-hour shift schedule on sleep patterns and well-being in intensive care unit (ICU) nurses with pre-existing sleep disturbances. We also examined differences in outcome based on chronotype. METHODS: We conducted an observational study at a university hospital ICU between November 2020 and October 2023, before and after a hospital-wide shift schedule change. Nurses wore wearable sensors and completed daily surveys over 5 weeks under each shift system. Rotating-shift ICU nurses with a Pittsburgh Sleep Quality Index score >5 were eligible. Sleep metrics and subjective well-being were compared using linear mixed models, adjusting for age. Sleep episodes were categorized relative to shift timing, and chronotype-stratified subgroup analyses were performed. RESULTS: Eighty nurses completed the study (12-hour shift: 37; 8-hour shift: 43). The interval between shifts was greater for the 12-hour shift group (36.12 vs 26.78 hours). Total sleep duration did not significantly differ between groups (12-hour shift: 418.5 minutes; 8-hour shift: 398 minutes); however, the 12-hour shift group had less fragmented sleep, higher subjective well-being scores, and lower reported stress and fatigue. Evening chronotypes appeared to benefit more from 12-hour shifts, with longer sleep duration and higher well-being scores, though these differences were not statistically significant. CONCLUSIONS: Transitioning to a 12-hour shift schedule was associated with reduced sleep fragmentation and improved well-being, particularly among evening chronotypes. These findings suggest that shift schedule structure and individual chronotype may influence adaptation to shift work in ICU settings.

[Lien vers l'article](#)

Influence of professional experience and work schedule on sleep quality.

Dias MS, de Andrade MJO. *Rev Bras Med Trab*. 2025 Apr-Jun;23(2):e20251428.

INTRODUCTION: Extended work hours have been associated with negative impacts on workers' physical and mental health, including stress, fatigue, and sleep disorders. Night shift workers or those with irregular schedules are particularly affected due to circadian rhythm disruptions, which impair sleep quality and occupational health. OBJECTIVES: To investigate the sleep-wake patterns of daytime and nighttime shift workers by analyzing sleep efficiency, latency, total sleep duration, and frequency of nighttime awakenings. METHODS: A longitudinal exploratory study was conducted with 15 workers (mean age = 27.93; standard deviation = $\pm$ 8.50) in Divinópolis, Minas Gerais. The instruments used

were the Pittsburgh Sleep Quality Index, the Insomnia Severity Index, and actigraphy. Data collection was carried out using actigraphy for 7 consecutive days, covering the entire workweek, including weekends. RESULTS: Workers with over 10 years of experience showed higher insomnia severity, lower sleep efficiency, and a greater number of awakenings ($p < 0.05$). Morning shift workers had better sleep patterns, with longer duration and higher efficiency compared to afternoon/night shift workers. CONCLUSIONS: Sleep quality among workers is influenced by professional experience, time in the role, and work schedule. Adjustments in working conditions that consider circadian rhythms and chronotype are essential for improving sleep health and productivity. Sleep management strategies should be implemented to promote well-being and performance.

[Lien vers l'article](#)

Quantifying cumulative circadian disruption from shift work and associations with health outcomes in a large cohort of nurses.

de Bruijn L, Schaapveld M, Vlaanderen JJ, Vermeulen RCH, Kromhout H, van Leeuwen FE, et al. *Sleep*. 2025 Sep 26.

STUDY OBJECTIVES: Night shifts are commonly used as proxy for circadian disruption (CD) in epidemiological studies. However, other shift types can also cause CD if they interfere with a worker's biological night. We quantified and compared cumulative CD to night shift exposure and assessed their associations with health-related outcomes. METHODS: Shift work exposure was derived from questionnaire data for 42,119 nurses for the period 2012-2017. Cumulative CD was estimated as the total overlap (hours) between shift work and preferred sleep-wake times. Pearson's correlation (r) assessed relationships between cumulative CD and night shift exposure. Associations with sleep disturbances, medication use, and overweight were analyzed using Poisson regression. RESULTS: The median cumulative CD among shift workers was 1,674 hours over six years (interquartile range=432-3,153). High CD ($\geq 2,809$ hours) was associated with increased prevalence of sleep problems (incidence rate ratio [IRR]=1.10, 95% confidence interval [CI]=1.07-1.13), melatonin use (IRR=1.86; 95%CI=1.70-2.04), sleep medication use (IRR=1.15; 95%CI=1.01-1.32), and overweight (IRR=1.04; 95%CI=1.02-1.07). The number of performed night shifts strongly correlated with cumulative CD ($r=0.93$), and using night shifts as proxy for CD gave similar results. However, among shift workers who did not perform night shifts, high CD was still associated with increased sleep problems and melatonin use. CONCLUSION: Cumulative CD is associated with sleep- and health disturbances, even among shift workers who do not perform night shifts, underlining its potential role in disease development. While night shifts remain a practical proxy in large-scale studies, our study highlights the importance of using more nuanced, individualized measures of CD.

[Lien vers l'article](#)

Shift work sleep disorder and associated factors among healthcare professionals working at Jimma University Medical Center, Southwest Ethiopia, 2022: a cross-sectional study.

Dassale C, Alemu B, Dawud B. *BMJ Open*. 2025 Sep 30;15(9):e095019.

OBJECTIVES: Shift work sleep disorder is a circadian rhythm sleep-wake disorder characterised by insomnia and/or excessive sleepiness associated with a shift work schedule that overlaps with habitual sleep time. This study aimed to assess the prevalence of shift work sleep disorders and associated factors among healthcare professionals working at Jimma University Medical Center, Southwest Ethiopia. DESIGN: Institutional-based cross-sectional study. SETTING: Tertiary hospital in Southwest Ethiopia. PARTICIPANTS: The data were collected using a self-administered questionnaire from health professionals recruited using a simple random sampling technique. OUTCOME: Shift work-sleep disorder was assessed by the International Classification of Sleep Disorders, the Insomnia Severity Index and/or the Epworth Sleepiness Scale. A logistic regression analysis was conducted to determine

the association between the predictor and the outcome variable. The ORs and 95% CIs were determined. Variables with a p value < 0.05 were taken as statistically significant on multivariable analysis. RESULT: 370 participants were involved in the study, yielding a response rate of 97.6%. The prevalence of shift work sleep disorder was 35.9% ($n=133$). Working in three shifts (Adjusted OR (AOR) 3.25, 95% CI=1.92 to 5.57), more than 11-night shifts per month (AOR 2.83, 95% CI=1.49 to 5.37), absence of nap (AOR 2, 95% CI=1.14 to 3.52), stress (AOR 4.4, 95% CI=2.36 to 8.2), fatigue (AOR 2.7, 95% CI=1.26 to 3.73), alcohol (AOR 3.9, 95% CI=1.79 to 8.47) and khat (AOR 4.40, 95% CI=1.76 to 10.96) use in the last 3 months was significantly associated with shift work sleep disorder. CONCLUSION: One in three healthcare professionals working at Jimma University Medical Center had a sleep disorder related to shift work. Working in three shifts per day, having more than 11-night shifts per month, lack of naps, presence of stress, fatigue and substance use were found to be associated with shift work sleep disorder.

[Lien vers l'article](#)

A Pilot Study Using Casino Shifts to Improve Sleep for Emergency Medicine Fellows Working Night Shifts.

Cohen E, Jacobs J, Kink RJ. *Pediatr Emerg Care*. 2025 Sep 10.

OBJECTIVES: Casino shifts, which end at 4 AM and allow sleep during the circadian "anchor period," may improve sleep and reduce fatigue for pediatric emergency medicine (PEM) fellows working night shifts. We hypothesized that using a casino shift model would improve perceived fatigue levels and measured sleep metrics. METHODS: In this pilot prospective observational cohort study, fellows worked traditional night shifts for one month (control) followed by casino shifts for one month (intervention). Sleep data were collected using a validated wrist actigraph (ReadiBand), and subjective perceptions of fatigue were collected using surveys. RESULTS: Eight fellows participated in the study. Compared with the control month, the intervention month was associated with increased sleep quantity and sleep efficiency as measured by the actigraph. Fellows also reported reduced perceived fatigue and improved energy levels during the intervention month. CONCLUSIONS: Switching to a casino shift schedule was associated with improvements in measured sleep and perceived fatigue among a cohort of PEM fellows in this pilot study. These preliminary findings warrant further investigation with larger samples and randomized scheduling to further explore the potential benefits and limitations of casino shift models in emergency medicine.

[Lien vers l'article](#)

Sleep environment is associated with sleep control in fly-in, fly-out mining shift workers.

Beranek P, Turner M, Lo J, Grandner M, Dunican IC, Cruickshank T. *Sleep Breath*. 2025 Sep 18;29(5):289.

Control over sleep timing, duration, and quality is essential for obtaining healthy sleep. Fly-in, Fly-out (FIFO) mining shift workers face unique challenges in maintaining control over their sleep due to their roster. However, the impact of their sleep environment on perceived sleep control in this population remains underexplored. This study evaluates the sleep environment of FIFO mining shift workers and its association with sleep control. A cross-sectional study was conducted (2023-2024) on Australian FIFO mining shift workers residing in remote camp accommodations. Data were collected via an online survey using the Assessment of Sleep Environment (ASE) and the Brief Index of Sleep Control (BRISC). Linear regression and Random Forest analyses were used to explore associations and identify key environmental factors influencing sleep control. Respondents ($n = 538$, 29% female) reported a mean ASE score of 12.6 ± 7.4 and a BRISC score of 2.3 ± 0.9 . Two-thirds ($n = 366$) rated their sleep environment as moderately or highly sleep-disruptive. Higher ASE scores were negatively associated with BRISC scores ($p < 0.001$). Key environmental factors included pillow/blanket comfort, mattress

comfort, room temperature, noise, light, and safety, of which all were negatively correlated ($p < 0.05$) with sleep control. The findings highlight the importance of optimising sleep environments to improve FIFO mining shift workers' sleep control. Addressing bedding comfort, noise and light levels, temperature, and safety could improve sleep in this population. However, the cross-sectional design does not allow for the identification of causal relationships. Longitudinal and objective studies are warranted to confirm causality and guide interventions.

[Lien vers l'article](#)

Beyond 12 hours: A national survey of neonatal nurse practitioners perceptions on shift length and professional practice.

Bell TR, Hoffman J, Farmer ML. *J Am Assoc Nurse Pract.* 2025 Oct 3.

BACKGROUND: The neonatal nurse practitioner (NNP) is a pivotal member of the neonatal intensive care unit (NICU) care team. To ensure 24-hour coverage in this high-acuity environment, NNPs often work shifts exceeding 16 hours. However, little is known about how prolonged shifts affect NNP fatigue, clinical performance, and overall well-being. **METHODS:** A mixed-methods survey was distributed via postcards containing a QR code to board-certified NNPs. The survey assessed demographics, shift practices, and perceptions of fatigue when working shifts greater than 16 hours. **RESULTS:** A total of 623 participants initiated the survey; 371 completed all items. Most were experienced NNPs working in level III NICUs. Preferred shift lengths included 24-hour and 12-hour day shifts. Awareness of the National Association of NNP position statement on shift length was high (73%), with 76% agreeing with its recommendations. Over half (51%) supported continuing 24-hour shifts. Eighty-five percent agreed that unit census/acuity contributes to fatigue. Nearly half (49%) reported feeling unsafe driving after shifts >16 hours; among those who did acknowledge feeling unsafe to drive, this occurred an average of 17% of the time. Sixty percent denied ever feeling unable to perform duties after extended shifts; among those who did, the average frequency was 17.4%. **CONCLUSIONS:** Neonatal nurse practitioners report a preference for extended shifts despite acknowledging associated fatigue-related concerns. Although these findings provided valuable subjective insight, findings are limited by self-reporting and sample representation. **IMPLICATIONS:** Additional objective data and qualitative analysis are needed to guide evidence-based strategies that prioritize both provider well-being and patient safety.

[Lien vers l'article](#)

Night shift and occupational fatigue among nurses who work 12 hours in Jeddah.

Alanmi B, Alharazi R, Almutary H. *J Educ Health Promot.* 2025;14:308.

The ever-demanding job of nurses necessitates night shift work for 12 hours at various healthcare facilities to improve continuity of care. Working at night is associated with physical and mental stress as it disturbs circadian rhythm, affects sleep, influences dietary and eating routine, and impairs cognitive function. Nursing is a high-demand profession that requires working for longer hours, due to which, nurses are at increased risk of occupational fatigue. This occupational fatigue involves various components of one's life including poor physical performance, poor mental health, impaired cognition, and sensory overload on account of high work demand but low energy restoration. The current scope review aimed to assess the effect of night shift and occupational fatigue on nurses who work 12 hours. A systemic search of PubMed, EBSCO, CINAHL, MEDLINE, and Google Scholar was conducted. A total of 245 full-text articles underwent eligibility evaluation. In the end, 17 full-text articles were included in this scoping review. This scoping review found that there is a significance positive association of occupational fatigue with 12 hours nightshift work and that chronic fatigue leads to negative emotions, lack of concentration, and decreased motivation and subsequent reduced physical performance. In addition, nurses' 12 hours nightshift work results in psychological, physical issues including anxiety,

depression, burnout, exhaustion, and professional performance as well as affects nurses' social and quality of life. Therefore, policymakers need to work on circadian rhythm-based interventions considering the work duration, speed of shift change, number of consecutive shifts, and social support.

[Lien vers l'article](#)

Correction to "How Shift Schedules Shape Nurses' Sleep and Compassion: A Comparative Study".

Int Nurs Rev. 2025 Sep;72(3):e70106.

[Lien vers l'article](#)

The relationship between circadian type and physical activity as predictors of sleepiness and fatigue during simulated nightshifts: a randomised controlled trial.

Easton DF, Gupta CC, Vincent GE, Vandelanotte C, Duncan MJ, Tucker P, et al. *Ergonomics.* 2025 Oct;68(10):1679-93.

Breaks involving physical activity may provide on-shift recovery from sleepiness and fatigue during nightshifts, with effects potentially influenced by circadian type. Thirty-three adults ($M \pm SD$ age: $24.6 \pm 4.8y$; 55% female) participated in five laboratory nightshifts (2200-0600h) and were randomised to sedentary (SIT; $n = 14$) or 'breaking-up' sitting (BREAK; $n = 19$). Participants completed the Circadian Type Inventory, categorising as rigid ($n = 12$) or flexible ($n = 11$); and languid ($n = 11$) or vigorous ($n = 13$). BREAK participants walked 3-minutes every 30-minutes at 3.2 km/h; all completed fatigue and sleepiness scales. Linear mixed models showed a 3-way interaction between nightshift (N1-N5), condition (SIT, BREAK), and rigidity-flexibility for fatigue ($p < .001$) and sleepiness ($p < .001$). Fatigue and sleepiness were greatest on N1 for SIT-Flexible and BREAK-Rigid, with SIT-Rigid experiencing the greatest levels overall. BREAK-Flexible showed no reduction. No 2-way interactions between nightshift and languidity-vigour were found. Breaking up sitting attenuated fatigue and sleepiness for rigid types only. On-shift recovery needs may differ for circadian types.

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HA comme facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Muscle fatigue assessment using surface electromyography in farm operations performed in protected cultivation.

G S, Agrawal KN, Kumari S, Potdar RR, Chandel NS, Rao KVR, et al. *Sci Rep*. 2025 Sep 30;15(1):33758.

The agricultural operations such as digging, transplanting and weeding in protected cultivation are performed by both female and male workers. The posture adopted during these operations such as forward bending and squatting leads to the involvement of various muscle groups and leads to continuous exertion. Excessive loading and long working hours result in work related musculoskeletal disorders. Surface electromyography (sEMG) is a useful tool to measure and correlate muscle fatigue experienced by workers during these operations. In the present study, twelve workers (six female and six male) performed digging, transplanting and weeding operations using both traditional and improved tools inside a polyhouse (560 m²). The muscles selected for digging and transplanting operations were the brachioradialis (BR), biceps brachii (BB), triceps brachii (TB), anterior deltoid (AD), erector spinae longissimus (ESL) and biceps femoris (BF). For weeding, all the muscles remain the same except for the biceps femoris, which is replaced by the gastrocnemius (GC). Before the start of the experiments, the worker's maximum voluntary contraction (MVC) values were assessed using information gathered from reviews. For female workers, with traditional tools, the percentage of muscle fatigue for the digging was (bicep femoris-58.19%, erector spinae- longissimus-53.79%, biceps brachii-31.48%), weeding was (brachioradialis-33.59%, gastrocnemius -33.35%) and transplanting was (bicep femoris-37.53%), respectively. Similarly, male workers, with traditional tools, the percentage of fatigue for the digging (bicep femoris-50.50%, erector spinae- longissimus (ESL)-49.99%, biceps brachii-31.55%), weeding (brachioradialis-28.83%, gastrocnemius-28.70%) and transplanting (bicep femoris-31.62%), respectively. Using the improved tools and machinery mini power tiller (BF:80.24%-F, 85.42%-M, ESL:75.35%-F, 79.93%-M, BB:33.83%-F, 37.50%-M), cycle hoe weeder (ESL:83.06%-F, 86.73%-M, GC:76.00%-F, 85.27%-M, BB:55.65%-F, 61.90%-M), single row vegetable transplanter (BF:90.43%-F, 93.51%-M, ESL:77.39%-F, 82.22%-M, BB:23.48%-F, 27.27%-M) results in decreased muscular load as compared to traditional tools/machinery. The data suggests that the use of improved tool and machinery can help to reduce muscle fatigue and enhance the safety and productivity of workers.

[Lien vers l'article](#)

Autres pathologies

Work-related risk factors of sleep apnea: evidence from the Korean work, sleep, and health study.

Ko H, Cho SS, Lee HE, Min J, Kang MY. *Int Arch Occup Environ Health*. 2025 Sep 25.

OBJECTIVE: Occupational exposures are hypothesized to contribute to obstructive sleep apnea (OSA) risk, yet evidence from large, population-based studies remains scarce. This study aimed to investigate the association between a wide range of work-related factors and sleep apnea risk among Korean workers. **METHODS:** We analyzed data from the Korean Work, Sleep, and Health Study (KWSHS), a nationwide longitudinal panel survey conducted between 2022 and 2024. Work-related exposures included long working hours, shift work, occupational stress, emotional labor, physical or chemical hazards, and ergonomic factors. Sleep apnea risk was assessed using the Berlin Questionnaire. To

account for repeated measurements within individuals, generalized estimating equation models were applied to estimate adjusted odds ratios (ORs) and 95% confidence intervals (CIs), adjusting for age, sex, and occupation. Subgroup analyses were performed according to obesity status. RESULTS: Among 8,976 workers, long working hours (> 52 h per week; OR 1.22, 95% CI 1.04-1.43), high occupational stress (OR 1.93, 95% CI 1.76-2.12), high emotional labor (OR 1.74, 95% CI 1.50-2.02), physical or chemical exposures (OR 1.37, 95% CI 1.25-1.50), and ergonomic strains (OR 1.36, 95% CI 1.25-1.48) were significantly associated with increased odds of high sleep apnea risk. Shift work was not significantly associated with OSA risk, which may be partially explained by the healthy worker effect or adaptation among long-term shift workers. Associations with physical and chemical exposures were stronger among non-obese participants. CONCLUSIONS: Work-related psychosocial and environmental factors contribute meaningfully to sleep apnea risk. Addressing workplace conditions may represent an important strategy for sleep apnea prevention.

[Lien vers l'article](#)

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Analysis of the Impact of Officers of the Watch's Mental and Physical Health Issues on Collision and Grounding Accidents.

Uğurlu Ö, Sana F, Uğurlu H, Şenbursa N. *Inquiry*. 2025 Jan-Dec;62:469580251371875.

This study examines the impact of physical and mental health conditions of officer of the watch (OOW) on marine accidents such as collisions and groundings. The research highlights the critical role of psychosocial factors, especially stress, burnout, and mobbing, in the occurrence of accidents. A Fuzzy Bayesian Network (FBN) based model was developed to quantitatively assess the effects of mental and physical health factors on marine accidents. Expert opinions were integrated into the model by converting linguistic uncertainties into probabilistic values using fuzzy logic. The subjective probabilities were elicited from 3 domain experts with backgrounds in maritime accidents, seafarers' mental and physical health, and human factors. The results indicate that mental health-related issues increase the risk of accidents approximately 2.5 times more than physical health problems. Factors such as stress, burnout, and mental fatigue significantly impair decision-making, situational awareness, and communication. In contrast, the impact of physical fatigue due to long working hours, shift-based operational schedules, and lack of sleep was found to be moderate. The study demonstrates that physical measures alone are insufficient for maritime safety; a holistic approach that includes psychological support, workload management, and mental health assessments is necessary. The proposed FBN model realistically captures the complex effects of human factors, offering innovative contributions to accident prevention strategies.

[Lien vers l'article](#)

RPS et QVT

AI-based assessment of pulmonology inpatient consultation note completeness: predicting documentation gaps and response delays.

Yazici DA, Satici C, Bahadir A, Yurt S, Özgül MA, Yazici I, et al. *Int J Med Inform.* 2025 Dec;204:106072.

OBJECTIVES: Inpatient consultation notes frequently suffer from incomplete documentation, which may delay clinical decision-making and compromise patient care. Although consultations are central to multidisciplinary coordination, there is still no widely adopted framework to ensure standardized documentation across specialties. This study aims to evaluate the relationship between the completeness of referring physician documentation and consultation response time in a high-volume inpatient setting and to develop an artificial intelligence (AI) tool for detecting missing information in real time. **METHODS:** We retrospectively analyzed 1219 inpatient consultation notes from 20 representative days sampled across seasons and weekdays. Each note was evaluated using a modified QNOTE-based framework covering seven core clinical elements. The association between missing components and consultation response time was assessed. A natural language processing (NLP)-based machine learning model was developed to predict the absence of key content from free-text notes. **RESULTS:** Only 0.3% of notes contained all essential components. Missing information-particularly auscultation findings, thoracic imaging, and laboratory data-was associated with response delays of up to 35 min per consultation. Documentation quality and response times varied by time of day and day of the week, with more complete notes and faster responses observed during night shifts and weekends. The NLP model achieved high accuracy in identifying missing elements, with F1-scores exceeding 0.90 in several categories. **CONCLUSIONS:** Incomplete referring notes-lacking essential clinical content provided to the consultant-are significantly associated with delayed responses, indicating an urgent need for improved documentation practices. Our AI-assisted NLP model enables real-time detection of missing, specialty-specific content from free text-without relying on rigid templates. While this study focused on pulmonology, the approach is scalable to other fields and may serve as a blueprint for standardizing inpatient consultations. Though not yet integrated into clinical workflows, it represents a practical step toward smarter and more efficient documentation.

[Lien vers l'article](#)

Factors influencing healthcare workers' attitudes toward delayed retirement: a cross-sectional survey.

Sun X, Wu Z, He L, Wang S. *BMC Public Health.* 2025 Sep 24;25(1):3070.

BACKGROUND: Amid growing concerns over healthcare workforce shortages in aging societies, delayed retirement has emerged as a strategic policy response. However, little is known about the determinants of retirement attitudes across different healthcare professions in middle-income countries. **OBJECTIVES:** Guided by Role Theory and the Push-Pull Model, this study aimed to identify demographic, occupational, and psychosocial predictors of support for delayed retirement among healthcare workers in China, with attention to inter-professional variation. **METHODS:** A cross-sectional survey was conducted among 1,200 full-time healthcare workers in Sichuan Province, including doctors, nurses, technicians, and administrative staff. A structured questionnaire captured data on demographics, work conditions, job satisfaction, occupational fatigue, self-rated health, and chronic illness. Univariate and multivariate logistic regression analyses were used to identify independent predictors of support for delayed retirement. **RESULTS:** Support for delayed retirement was positively associated with older age (OR: 1.06), male gender (OR: 1.34), higher education (OR: 1.42–1.65), longer working hours, more frequent night shifts, and higher job satisfaction (OR: 1.55), while greater occupational fatigue was negatively associated (OR: 0.82; all $p < 0.01$). Supporters reported better health, lower fatigue, and greater career engagement. Subgroup comparisons revealed marked differences in predictors and attitudes across professional roles, reflecting distinct

role identities and workplace demands. **CONCLUSIONS:** By applying retirement theory to a diverse healthcare sample, this study highlights the need for differentiated workforce retention strategies. Findings suggest that policies should account for occupational fatigue, gendered caregiving burdens, and role-based professional motivations to ensure sustainable retirement planning in resource-constrained health systems. **SUPPLEMENTARY INFORMATION:** The online version contains supplementary material available at 10.1186/s12889-025-24449-7.

[Lien vers l'article](#)

Post-traumatic stress disorder among workers in Brazil: a narrative review.

Muntanelli BR, Sampaio MFB, de Lucca SR, Bandini M, Miziara ID, Silva-Junior JS. *Rev Bras Med Trab.* 2025 Apr-Jun;23(2):e20251401.

Post-traumatic stress disorder is a complex psychiatric condition that can develop after exposure to traumatic events such as wars, natural disasters, or workplace violence. This study aims to conduct a review of the prevalence and contributing factors of post-traumatic stress disorder among Brazilian workers. A literature search was performed in the PubMed and SciELO databases between February and June 2023. The search focused on quantitative studies addressing post-traumatic stress disorder in Brazilian workers, using terms related to post-traumatic stress disorder, occupational exposure, and health aspects. Only studies involving Brazilian residents with post-traumatic stress disorder as an outcome were included, while reviews, case reports, and qualitative studies were excluded. Of the 12 studies initially identified, 11 met the inclusion criteria. Firefighters had the highest prevalence of post-traumatic stress disorder, ranging from 6.9% to 37.9%, followed by health care workers - especially nurses - and military police officers, who also showed considerable rates. Work-related factors associated with an increased risk of post-traumatic stress disorder included lower occupational ranks or higher job demands, long working hours, repeated exposure to traumatic events, lack of personal protective equipment, and exposure to hazardous materials. The study identified common occupational risk factors across various professions that contribute to the development of post-traumatic stress disorder. These findings underscore the need for targeted interventions aimed at improving working conditions and strengthening mental health support for workers.

[Lien vers l'article](#)

Santé psychique

Burnout and job stress in healthcare professionals: a single-centre cross-sectional study in an East China tertiary hospital after COVID-19 policy adjustment.

Ji W, Liu Y, Sun Q, Wu D, Liu T, Sun P. *BMJ Open.* 2025 Sep 30;15(9):e099854.

OBJECTIVES: To examine the relationship between job stress and job burnout among healthcare professionals (HPs) in a tertiary hospital in East China following the adjusted COVID-19 prevention policies and to explore the effects of demographic and work environment factors on burnout and its subtypes (emotional exhaustion (EE), depersonalisation (DP), personal accomplishment (PA)). **DESIGN:** Cross-sectional, using a questionnaire-based survey method. **SETTING:** A tertiary hospital located in Qingdao, East China. **PARTICIPANTS:** A total of 434 HPs were included, with 138 men (31.8%) and 296 women (68.2%); the mean age was 35.05±7.96 years. Participants included physicians (37.1%), clinical nurses (49.5%), clinical pharmacists (3.9%), medical technicians (5.1%) and administrative staff (4.4%). Demographic factors (age, sex, marital status, education level, professional title, length of employment, income) and work-related factors (weekly working hours, sleep duration) were collected. **INTERVENTIONS:** No specific interventions were implemented; this was an observational study focusing on the burnout assessment and associated factors. **PRIMARY AND SECONDARY OUTCOME**

MEASURES: Primary outcomes: burnout levels assessed via the Chinese version of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), including three subscales: EE (9 items), DP (5 items) and PA (8 items). Severe burnout was defined as meeting 'high-level' criteria for all three subscales (EE ≥ 27 , DP ≥ 10 , PA ≤ 33). **SECONDARY OUTCOMES:** demographic (sex, professional role, length of employment) and work-related (weekly working hours, daily sleep duration) factors associated with burnout. **RESULTS:** Among 434 HPs, 74 (17.1%) experienced severe burnout. The median scores of MBI-HSS subscales were 17 (IQR: 9-27) for EE, 3 (IQR: 0-7) for DP and 37 (IQR: 27.75-43) for PA. Multivariate logistic regression showed that: nurses had a higher risk of high EE than physicians (OR=2.86, 95% CI: 1.32 to 6.21, $p < 0.05$); weekly working hours > 40 hours (OR=2.30, 95% CI: 1.32 to 3.99, $p < 0.01$) and daily sleep duration < 6 hours (OR=2.17, 95% CI: 1.15 to 4.09, $p < 0.05$) were independent risk factors for high EE and severe burnout; men were more likely to have reduced PA (OR=1.82, 95% CI: 1.13 to 2.93, $p < 0.05$). **CONCLUSIONS:** A high prevalence of severe burnout (17.1%) was observed among HPs after COVID-19 policy adjustment. Key risk factors include being a nurse, long working hours (> 40 hours/week), short sleep duration (< 6 hours/day) and male sex (for reduced PA). Targeted interventions (eg, workload optimisation, sleep support) should prioritise young, inexperienced HPs and nurses to mitigate burnout in healthcare settings.

[Lien vers l'article](#)

Psychosocial Risks and Protective Factors for Healthcare Worker Burnout During the Post-Acute Phase of the COVID-19 Pandemic.

Dūdiņa K, Martinsone B. *Eur J Investig Health Psychol Educ.* 2025 Sep 16;15(9).

Burnout is a critical problem among healthcare professionals worldwide, but nationally representative data on psychosocial factors associated with burnout are lacking for Latvia's hospital system. This study investigated twofold aims: first, it examined the association between job-related demands, psychosocial resources, and burnout in a representative sample of Latvian hospital staff; and second, it tested whether specific resources buffer or amplify the impact of excessive workload. A cross-sectional survey was conducted among 4756 healthcare workers across 30 inpatient institutions in Latvia. Participants completed the Copenhagen Psychosocial Questionnaire III and the Burnout Assessment Tool; regression and moderation analyses were used. Burnout was positively associated with longer working hours, multiple job-holding, and psychosocial demands such as emotional strain, time pressure, and work-life conflict. Several resources, including support from colleagues, supervisor support, recognition, sense of belonging, supervisor evaluation, and especially resources for quality work, were associated with lower burnout and weakened the relationship between workload and burnout. In contrast, high autonomy, meaning at work, organizational justice, and role conflict amplified this association. These findings suggest that in resource-constrained healthcare systems, some job resources may be associated with increased risk of burnout. Effective interventions should address both structural and relational factors to mitigate burnout among healthcare workers.

[Lien vers l'article](#)

Troubles cognitifs et de la vigilance

Effects of a 12-hour shift system on sleep and cardiovascular health of male machine and plant operators - a longitudinal study over four years.

Seibt R, Kreuzfeld S, Hunger B. *Front Public Health.* 2025;13:1616810.

BACKGROUND: Data on the risks and effects of shift systems involving night work are inconsistent. In particular, there is a lack of longitudinal studies on the impact of 12-h shift systems on indicators of sleep, cardiovascular health and work-life balance. Therefore, this study compared machine and plant

operators (MPO) who worked in a rotating 12-h shift system or only during the day, both at baseline (T1) and at follow-up 4 years later (T5). METHODS: Data were collected annually and included a questionnaire on shift work and sleep as well as a cardiovascular screening programme. The sample for analysis consisted of 45 shift (SW) and 30 day workers (DW) (mean age T1: 40 years). Sleep behaviour was examined by sleep quality and quantity (PSQI score), cardiovascular health by blood pressure, body mass index (BMI), blood lipids, glycosylated haemoglobin (HbA1c) and PROCAM score. Work-life balance was assessed on the basis of life satisfaction and impairments. Analyses of covariance with repeated measures were used to determine longitudinal changes in the indicators between T1 and T5. RESULTS: At T1, SW showed significantly poorer sleep quality ($d = 0.58$) and shorter sleep duration ($M = 366$ min vs. 438 min, $d = 1.38$) compared to DW. These effects increased significantly in SW only after night shifts at T5 ($M = 5.1$ pts, $\eta^2(2) = 0.13$, sleep duration: $M = 318$ min). At T1, SW differed from DW only by a significantly higher blood pressure ($d = 0.60/0.49$), BMI ($d = 0.68$) and PROCAM score in trend ($p = 0.122$). Lipids and HbA1c were comparable between the two groups. The means of the PROCAM score were in the low-moderate range, predicting a risk of heart attack $<10\%$ for 87% of the MPOs. At T5, the group differences for cardiovascular health from T1 were confirmed. SW achieved significantly higher satisfaction at T5 ($\eta^2(2) = 0.22$); it corresponded to that of DW. Both groups reported significantly fewer impairments at T5 ($d = 0.68/0.58$). CONCLUSION: At T5, the 12-h shift system demonstrably changed sleep behaviour but not cardiovascular health. Sleep deficits could not be compensated. The 12-h shift system seems to offer advantages for work-life balance.

[Lien vers l'article](#)

Excessive Daytime Sleepiness and Its Associated Factors Among Male Road Transport Workers in Brazil.

da Silva RCD, Adelino MFC, Duarte AF, de Souza JS, de Andrade Borges FV, de Jesus Canevari CC, et al. *J Sleep Res.* 2025 Sep 10:e70198.

This study aimed to estimate the occurrence of excessive daytime sleepiness (EDS) and its associated factors among male road transport workers. A cross-sectional study was conducted with a non-probabilistic sample of 414 drivers recruited at gas stations and parking lots in Formosa and Rio Verde, Goiás, Brazil, in 2024. The presence of EDS was evaluated using the Epworth Sleepiness Scale, and the investigated associated factors included demographic, socioeconomic, behavioural, health and professional characteristics. Logistic regression was used to explore the factors associated with EDS. The prevalence of EDS in the sample was 39.9% (95% CI: 35.1-44.6). After adjustment, a higher probability of EDS was observed among drivers aged between 41 and 60 years, with non-white skin colour, and those who were married. The analysis also indicated that drivers with high levels of anxiety and a high risk of obstructive sleep apnea were more susceptible to EDS whereas drivers with good sleep quality and adequate rest practices had a lower probability of EDS. Additionally, long working hours significantly increased the chance of EDS. In conclusion, the findings of this study revealed a high occurrence of EDS among male road transport drivers and its association with demographic characteristics, working conditions, mental health and sleep quality. Therefore, strategies addressing these factors are essential to reducing the occurrence of EDS and contributing to a safer road environment.

[Lien vers l'article](#)

Travail posté et de nuit facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Factors Affecting Nurses' Walking Distance: Age, Clinical Ladder Level, Wards, Nurse Calls, Weekend, and Patient-To-Nurse Ratio.

Nakashima K, Inoue Y, Iwasaki T, Fukushima H, Ishii A. *J Nurs Manag.* 2025;2025:5540600.

In many developed countries, a rapidly aging population has increased healthcare demands and the proportion of older nurses in the workforce. This demographic shift requires nursing managers to have a deeper understanding of the physical demands on staff nurses, particularly older ones. In this paper, we aim to provide valuable insights for developing evidence-based strategies to improve work environments in hospital wards. To achieve this, we conducted a statistical analysis of data on walking distance for day, long-day, and night shifts, obtained from a long-term survey across 14 wards in a large acute care hospital in Japan using automated data collection via mobile devices. Using nonparametric multiple comparisons and multiple regression analysis, we evaluated the impact of factors such as age, clinical ladder level, years of service, ward type, nurse calls, weekend, and patient-to-nurse ratio on walking distance. The multiple comparison tests revealed significant differences in walking distance among clinical ladder levels, with small to medium effect sizes. While age and years of service had some impact, their influence was less pronounced than that of clinical ladder levels. Our regression analysis showed that ward characteristics significantly affected walking distance, with emergency wards exhibiting notably longer distances. The number of nurse calls had a significant positive impact on walking distance across all shifts, while the patient-to-nurse ratio significantly affected walking distance only for night shifts. The weekend affected walking distance only for long-day shifts. These findings suggest that ward managers should reexamine the appropriate nursing care systems suited to the characteristics of their ward, and that reconsidering approaches to task assistance for less experienced nurses and night shift allocations for novice nurses could effectively reduce physical burdens on nurses. They also emphasize the importance of workload balancing in task and patient assignments and the consideration of ward characteristics in nurse reshuffling.

[Lien vers l'article](#)

Autres pathologies

Work-related risk factors of sleep apnea: evidence from the Korean work, sleep, and health study.

Ko H, Cho SS, Lee HE, Min J, Kang MY. *Int Arch Occup Environ Health.* 2025 Sep 25.

OBJECTIVE: Occupational exposures are hypothesized to contribute to obstructive sleep apnea (OSA) risk, yet evidence from large, population-based studies remains scarce. This study aimed to investigate the association between a wide range of work-related factors and sleep apnea risk among Korean workers. **METHODS:** We analyzed data from the Korean Work, Sleep, and Health Study (KWSHS), a nationwide longitudinal panel survey conducted between 2022 and 2024. Work-related exposures included long working hours, shift work, occupational stress, emotional labor, physical or chemical hazards, and ergonomic factors. Sleep apnea risk was assessed using the Berlin Questionnaire. To account for repeated measurements within individuals, generalized estimating equation models were applied to estimate adjusted odds ratios (ORs) and 95% confidence intervals (CIs), adjusting for age, sex, and occupation. Subgroup analyses were performed according to obesity status. **RESULTS:** Among

8,976 workers, long working hours (> 52 h per week; OR 1.22, 95% CI 1.04-1.43), high occupational stress (OR 1.93, 95% CI 1.76-2.12), high emotional labor (OR 1.74, 95% CI 1.50-2.02), physical or chemical exposures (OR 1.37, 95% CI 1.25-1.50), and ergonomic strains (OR 1.36, 95% CI 1.25-1.48) were significantly associated with increased odds of high sleep apnea risk. Shift work was not significantly associated with OSA risk, which may be partially explained by the healthy worker effect or adaptation among long-term shift workers. Associations with physical and chemical exposures were stronger among non-obese participants. **CONCLUSIONS:** Work-related psychosocial and environmental factors contribute meaningfully to sleep apnea risk. Addressing workplace conditions may represent an important strategy for sleep apnea prevention.

[Lien vers l'article](#)

Cancers

Exposure to Radiation and Thyroid Cancer Risk Among Young Female Nurses: Longitudinal Analysis From the Korea Nurses' Health Study.

Kim YT, Sung C, Pang Y, Cha C. *JMIR Cancer*. 2025 Sep 18;11:e68037.

BACKGROUND: Thyroid cancer is one of the most commonly diagnosed malignancies in South Korea, with incidence rates among the highest globally. Young women, in particular, represent a high-risk group, likely due to a combination of biological, occupational, and environmental factors. However, the specific risk factors contributing to thyroid cancer development in this population remain poorly understood. **OBJECTIVE:** This study aims to identify the risk factors associated with thyroid cancer among young female nurses using longitudinal survival analysis. **METHODS:** This longitudinal study used data from the Korea Nurses' Health Study (KNHS), a prospective national cohort of female nurses. Data from the first, fifth, seventh, and ninth surveys were used to construct a person-period data set. Female nurses aged in their 20s at baseline were included. Time-varying explanatory variables included age, marital status, BMI, smoking, alcohol consumption, perceived stress, sleep problems, nursing position, night shift work, working unit, and duration of radiation exposure. The dependent variable was self-reported physician-diagnosed thyroid cancer. Kaplan-Meier survival analysis and Cox proportional hazards regression were performed to examine the association between risk factors and thyroid cancer occurrence. **RESULTS:** A total of 22,759 person-period cases were analyzed, and 105 thyroid cancer events were identified. Kaplan-Meier analysis showed significant associations between thyroid cancer occurrence and age ($\chi^2(1)=51.6$, $P<.001$), marital status ($\chi^2(1)=25.1$, $P<.001$), sleep problems ($\chi^2(1)=20.3$, $P<.001$), night shift work ($\chi^2(1)=20.1$, $P<.001$), working unit ($\chi^2(1)=13.0$, $P<.001$), and duration of radiation exposure ($\chi^2(1)=91.0$, $P<.001$). In the Cox regression model, nurses aged in their 20s had a significantly higher risk of thyroid cancer than those aged in their 30s (hazard ratio [HR] 4.602, 95% CI 1.893-11.188). Those who worked night shifts were also at an increased risk (HR 1.923, 95% CI 1.127-3.280). Compared with no exposure, radiation exposure showed a dose-response relationship: <1 year: HR 3.449, 95% CI 1.474-8.074; ≥ 1 year: HR 4.178, 95% CI 2.702-6.461. **CONCLUSIONS:** Younger age, night shift work, and duration of radiation exposure were significantly associated with an increased risk of thyroid cancer in young female nurses. These findings highlight the importance of early screening and occupational risk management, including regular radiation monitoring and support for circadian health, in health care settings. **INTERNATIONAL REGISTERED REPORT IDENTIFIER (IRRID):** RR2-10.4178/epih.e2024048.

[Lien vers l'article](#)

Risque routier, accidentologie

Analysis of the Impact of Officers of the Watch's Mental and Physical Health Issues on Collision and Grounding Accidents.

Uğurlu Ö, Sana F, Uğurlu H, Şenbursa N. *Inquiry*. 2025 Jan-Dec;62:469580251371875.

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[Lien vers l'article](#)

Incidence and risk factors for nursing-related intraoperative incidents: A 5-year retrospective study at a Japanese tertiary care hospital.

Mochida K, Chaki T, Yamakage M. *Jpn J Nurs Sci*. 2025 Oct;22(4):e70027.

AIM: Nursing-related intraoperative incidents, such as specimen loss and retained surgical items, pose serious risks to patient safety. These events may be influenced by surgical complexity, team structure, and nursing experience. However, data on the specific impact of these factors, particularly in Japan, remain limited. This study aimed to determine the incidence of nursing-related intraoperative incidents and identify clinical and procedural factors associated with their occurrence. METHODS: We conducted a retrospective observational study of all surgeries performed at a tertiary care hospital between April 1, 2018, and March 31, 2023. Data were extracted from anesthetic records, perioperative nursing notes, and an electronic incident reporting system. The primary outcome was the incidence of nursing-related intraoperative incidents. Secondary outcomes included associations with surgical specialty, instrument delivery personnel (nurse vs. physician), duration of surgery (<2 vs. ≥2 h), timing of surgery (daytime vs. night shift), surgical approach (endoscopic vs. non-endoscopic), and nurse experience (<6 vs. ≥6 years). Logistic regression was used for statistical analysis. RESULTS: Of 37,265 surgical cases, 85 cases (0.23%) of nursing-related intraoperative incidents were identified. Incident rates were highest in neurosurgery and emergency department surgery. Univariate analysis identified instrument delivery personnel (nurse), longer duration of surgery, night shift surgery, and limited nursing experience as associated factors. In multivariate analysis, limited nursing experience (odds ratio: 1.810) and longer duration of surgery (odds ratio: 4.008) remained significant predictors. CONCLUSIONS: Nursing-related intraoperative incidents, though rare, were more likely to occur during longer surgeries and when performed by less experienced nurses.

[Lien vers l'article](#)

RPS et QVT

AI-based assessment of pulmonology inpatient consultation note completeness: predicting documentation gaps and response delays.

Yazici DA, Satici C, Bahadir A, Yurt S, Özgül MA, Yazici I, et al. *Int J Med Inform.* 2025 Dec;204:106072.

OBJECTIVES: Inpatient consultation notes frequently suffer from incomplete documentation, which may delay clinical decision-making and compromise patient care. Although consultations are central to multidisciplinary coordination, there is still no widely adopted framework to ensure standardized documentation across specialties. This study aims to evaluate the relationship between the completeness of referring physician documentation and consultation response time in a high-volume inpatient setting and to develop an artificial intelligence (AI) tool for detecting missing information in real time. **METHODS:** We retrospectively analyzed 1219 inpatient consultation notes from 20 representative days sampled across seasons and weekdays. Each note was evaluated using a modified QNOTE-based framework covering seven core clinical elements. The association between missing components and consultation response time was assessed. A natural language processing (NLP)-based machine learning model was developed to predict the absence of key content from free-text notes. **RESULTS:** Only 0.3% of notes contained all essential components. Missing information-particularly auscultation findings, thoracic imaging, and laboratory data-was associated with response delays of up to 35 min per consultation. Documentation quality and response times varied by time of day and day of the week, with more complete notes and faster responses observed during night shifts and weekends. The NLP model achieved high accuracy in identifying missing elements, with F1-scores exceeding 0.90 in several categories. **CONCLUSIONS:** Incomplete referring notes-lacking essential clinical content provided to the consultant-are significantly associated with delayed responses, indicating an urgent need for improved documentation practices. Our AI-assisted NLP model enables real-time detection of missing, specialty-specific content from free text-without relying on rigid templates. While this study focused on pulmonology, the approach is scalable to other fields and may serve as a blueprint for standardizing inpatient consultations. Though not yet integrated into clinical workflows, it represents a practical step toward smarter and more efficient documentation.

[Lien vers l'article](#)

Moral Resilience and Its Association With Predictors in Emergency Nurses: A Latent Profile Analysis.

Wu S, Zhong Z, Li H, Xiong Y, Li L, Ding B, et al. *J Emerg Nurs.* 2025 Oct 1.

INTRODUCTION: Emergency nurses require strong moral resilience to maintain professional ethics and provide quality care, even when facing challenges and work-related stress. This study sought to investigate the factors influencing moral resilience profiles among emergency nurses and provide recommendations to nursing managers for their enhancement. **METHODS:** In January to April 2024, a total of 543 emergency nurses from 28 tertiary hospitals in Guangdong Province were surveyed. The measurements included the General Demographic Questionnaire, Rushton Moral Resilience Scale, Simplified Coping Style Questionnaire, and Hospital Ethical Climate Survey. Data analysis was conducted using Mplus 8.3 to examine different moral resilience profiles. Multiple logistic regression was used to explore each profile's influencing factors. **RESULTS:** The participating emergency nurses were categorized into 4 groups: low moral resilience group (25.6%), moral resilience potential group (31.0%), moral adversity challenge group (17.5%), and high moral resilience group (25.9%). Compared with the low moral resilience group, sex, professional title, physical health, hospital's ethical climate, and negative coping style were common influencing factors for the other 3 groups ($P < .05$). Supportive friends affected the moral resilience potential group and moral adversity challenge group ($P < .05$). Monthly income and positive coping style affected the moral adversity challenge group ($P < .05$). The average monthly night shifts, participation in hospital ethics courses, marital status, and positive coping style affected the high moral resilience group ($P < .05$). **DISCUSSION:** Nursing managers can use

the study's findings to develop targeted strategies to help emergency nurses enhance moral resilience, reduce work pressure, and improve emergency care quality.

[Lien vers l'article](#)

The Relationship Between Psychophysiological and Psychological Parameters of Job Stress and Working Capacity of Loggers During the Fly-In Period.

Korneeva Y, Simonova N. *Healthcare (Basel)*. 2025 Sep 9;13(18).

Background: Scientific research on fly-in/fly-out (FIFO) workers has identified a gap in understanding the dynamics of job stress parameters among forest workers throughout the shift cycle. Methods: This study investigated the relationship between psychological and psychophysiological parameters of job stress and work capacity among loggers. The research was conducted during two simultaneous scientific expeditions in July 2024, involving 47 loggers from two teams with differing socio-psychological characteristics. Data were collected daily (morning and evening) using a battery of psychophysiological and psychological tests. Teams' socio-psychological characteristics were assessed five times during the 15-day fly-in period. Results: The adaptation (beginning) and fatigue (end) phases of the shift were significantly more stressful than the middle period. During these critical phases, assessments of functional state showed greater consistency but were less favorable. Key findings indicate a psychological mobilization effect at the period's start, where high subjective comfort coexisted with physiological strain. By the end, functional capabilities were maintained despite high fatigue. Furthermore, loggers in teams with a positive socio-psychological climate exhibited a more favorable functional state throughout the shift. Conclusions: The study's novelty lies in its comprehensive mapping of the dynamic interplay between job stress and work capacity across the FIFO cycle, using both instrumental and questionnaire-based methods. The results underscore the critical influence of the team's socio-psychological climate on worker well-being and highlight specific high-stress phases that warrant targeted interventions.

[Lien vers l'article](#)

Parental Stress in Academic Emergency Medicine Physicians.

Diercks DB, Lall M, Messman A, O'Connell E, Hunt M, Karamatsu M, et al. *Acad Emerg Med*. 2025 Sep 13.

BACKGROUND: Recent publications have shown that women are more likely to leave emergency medicine at a younger age than men. We aim to describe the prevalence of parental stress in academic emergency medicine and its association with scheduling practices and desire to leave medicine. METHODS: Blinded survey sent to eight geographically diverse academic sites. Survey included five domains: academic rank and perception of progress, child and childcare characteristics, clinical scheduling practices, plans to leave medicine, and validated psychometric measures including the Parental Stress Scale (PSS: normal population score 35-45). Likert scale responses were dichotomized as either moderate/extremely likely versus less than moderately likely/unsure. Descriptive statistics were calculated, and linear and multivariate regression analyses were performed using STATA 16. RESULTS: A total of 280 surveys were accessed, and 225 (80%) surveys had PSS completed. Of this cohort, there were 90 females, 123 men, 1 intersex, and 15 surveys had no sex reported. The median number of children was 2 (IQR 1-3), and the median age of the youngest child was 4 (IQR 1-9). The parental stress scale median score was 40 (IQR 35-46). There was no significant difference in the parental stress scale by sex. The number of children (B-coeff -1.88, $p = 0.007$), age of the youngest child (B-coeff -4.2, $p = 0.000$), use of daycare (B-coeff 3.8, $p = 0.027$), ability to preference times of shifts (day, swing, night shift) (B-coeff -2.4, $p = 0.046$), being a nocturnist (B-coeff 2.75, $p = 0.006$), and being able to completely set their own schedule in terms of days and times worked (B-coeff -2.19, $p = 0.03$) were associated with the PSS score. The parental stress scale was not associated with the likelihood to

leave emergency medicine or leave the current job in 5 years. **CONCLUSION:** Academic emergency physicians had parental stress scale scores similar to the general population. Parental stress scale score was not associated with a plan to leave emergency medicine.

[Lien vers l'article](#)

Monitoring Visual Fatigue with Eye Tracking in a Pharmaceutical Packing Area.

Albarrán Morillo C, Suárez-Pérez JF, Demichela M, Camargo Salinas MA, Miranda Arandia NY. *Sensors (Basel)*. 2025 Sep 12;25(18).

This study investigates visual fatigue in a real-world pharmaceutical packaging environment, where operators perform repetitive inspection and packing tasks under frequently suboptimal lighting conditions. A human-centered methodology was adopted, combining adapted self-report questionnaires, high-frequency eye-tracking data collected with Tobii Pro Glasses 3, and lux-level measurements. Key eye-movement metrics-including fixation duration, visit patterns, and pupil diameter-were analyzed within defined work zones (Areas of Interest). To reduce data complexity and uncover latent patterns of visual behavior, Principal Component Analysis was applied. Results revealed a progressive increase in visual fatigue across the workweek and throughout shifts, particularly during night work, and showed a strong association with inadequate lighting. Tasks involving high physical workload under poor illumination emerged as critical risk scenarios. This integrated approach not only confirmed the presence of visual fatigue but also identified high-risk conditions in the workflow, enabling targeted ergonomic interventions. The findings provide a practical framework for improving operator well-being and inspection performance through sensor-based monitoring and environment-specific design enhancements, in alignment with the goals of Industry 5.0.

[Lien vers l'article](#)

Santé psychique

Burnout among Syrian postgraduate residents in medicine, dentistry, and pharmacy: a cross-sectional study.

Haffaf RA, Hamid S, Dashash M. *Korean J Med Educ*. 2025 Sep;37(3):293-302.

PURPOSE: The aim of this study was to compare the prevalence of burnout and determine the predictive factors among the residents in the three major healthcare specialties in Syria (medicine, dentistry, and pharmacy). **METHODS:** A web-based cross-sectional survey was used to investigate the experienced burnout among residents. The Maslach Burnout Inventory was used as a self-reported scale. Seven burnout-related factors were investigated and included in the survey. **RESULTS:** The overall reported prevalence of burnout was 73% (149/204 respondents) in the total sample. Residents in medicine reported the highest values, followed by the residents in dentistry. The residents in pharmacy reported the lowest burnout prevalence. The prevalence was statistically different in selected domains of burnout according to the type of specialty, satisfaction with monthly income, marital status, gender, existence of night shifts, and was inversely correlated with age ($p < 0.05$). **CONCLUSION:** Burnout rates among Syrian healthcare residents are high and concerning. Residents in medicine reported the highest percentage. Predictive factors should be considered by the directors of every medical program and the residency administrators.

[Lien vers l'article](#)

Troubles cognitifs et de la vigilance

Development and validation of a nomogram model for sleep disorders in patients with recurrent implantation failure based on physiological and lifestyle factors.

Zhang Y, Qin N, Hu J, Bai J, Pan M, Xu Y, et al. *Front Endocrinol (Lausanne)*. 2025;16:1585144.

OBJECTIVE: To establish and validate a nomogram model for the quality of sleep in patients with recurrent implantation failure (RIF) and to evaluate its performance. **METHODS:** From January 2023 to June 2023, 484 RIF patients who underwent ART fertilization treatment at the Reproductive Medicine Center of Tongji University-affiliated Obstetrics and Gynecology Hospital were selected as the modeling set and internal validation. Additionally, from July to September 2023, 223 RIF patients who underwent ART fertilization treatment at the Reproductive Medicine Center of Tongji University-affiliated Obstetrics and Gynecology Hospital were chosen as the external validation set. Their clinical data was collected. Lasso regression was used to screen potential predictive variables and multifactor logistic regression analysis was conducted to determine the final predictors. A nomogram model was established, and the model was evaluated using methods such as plotting receiver operating characteristic (ROC) curves, calibration curves, Hosmer-Lemeshow goodness of fit test, and decision curve analysis. **RESULTS:** Through Lasso regression and multifactor logistic regression, 7 predictors were identified, including FSH, E2, depression mood (moderate, severe), daily exercise time, sun exposure, caffeine intake, and shift work (>16h/w) for constructing the nomogram model. The AUC for the modeling set was 0.971 (95%CI:0.952~0.989), for the internal validation set was 0.960 (95%CI:0.937~0.979), and for the external validation set was 0.850 (95%CI:0.739~0.960), indicating good predictive performance of the model. **CONCLUSION:** This study established and validated a nomogram model composed of 7 clinical indicators for sleep disorders in RIF patients. The predictors include both physiological indicators and daily lifestyle habits, demonstrating significant predictive value and clinical application efficiency. It can be used for early identification of potential sleep disorders in RIF patients, providing certain reference significance for clinical work.

[Lien vers l'article](#)

Sleep research, quality and implementation priorities in the Veterans Health Administration: a white paper.

Shamim-Uzzaman QA, Zeidler MR, Boudreau EA, Chowdhuri S, Donovan LM, El-Solh A, et al. *J Clin Sleep Med*. 2025 Oct 1;21(10):1787-97.

The Veterans Affairs (VA) seeks to improve the quality of life and long-term health outcomes for veterans facing unique sleep challenges related to their military service. The prevalence and burden of sleep disorders among military service members and veterans are alarmingly high, often worsened by inadequate sleep environments, insufficient sleep, shift work, and exposure to trauma. VA's National Sleep Medicine Program Office has outlined key priorities for enhancing sleep medicine research and quality improvement. These recommendations reflect the consensus within the Sleep Research and Quality Improvement Subcommittee of the Field Advisory Board for the Sleep Medicine Program Office. These priorities include advancing sleep science at basic, clinical, and population levels; promoting sleep health through personalized treatment strategies tailored to veterans; increasing funding for sleep research; establishing a network of VA sleep research centers to conduct high-quality, multicenter, collaborative studies; developing a veteran-specific portfolio of sleep research and innovations; and optimizing the dissemination of diagnostic tools and therapies through quality improvement initiatives. VA aims to achieve these goals through a series of strategic objectives and milestones that consider importance, timeline, effort, and cost. Specific topics of interest are highlighted and investigators are encouraged to address knowledge gaps in these areas. This white paper seeks to strengthen sleep research within VA by developing a comprehensive pipeline of researchers and systematically evaluating strategies to improve sleep health care for veterans. The

ultimate goal is to generate actionable insights that could potentially influence broader sleep-related clinical guidelines and policies within and beyond the VA health care system. CITATION: Shamim-Uzzaman QA, Zeidler MR, Boudreau EA, et al. Sleep research, quality and implementation priorities in the Veterans Health Administration: a white paper. *J Clin Sleep Med*. 2025;21(10):1787-1797.

[Lien vers l'article](#)

Unveiling the Hierarchical Network of Sleep Quality Determinants: Linking Behavioral, Environmental, and Psychosocial Pathways.

Hu X, Zhan Y, Wang J. *Psychol Res Behav Manag*. 2025;18:1853-70.

BACKGROUND: Sleep quality has emerged as a critical public health concern, yet our understanding of how multiple determinants interact to influence sleep outcomes remains limited. This study employed partial correlation network analysis to examine the hierarchical structure of sleep quality determinants among Chinese adults. **METHODS:** We investigated the interrelationships among nine key factors: daily activity rhythm, social interaction frequency, work-life balance, light exposure, physical activity level, time control perception, shift work, weekend catch-up sleep, and sleep quality using the extended Bayesian Information Criterion (EBIC) glasso model. The study included 8,127 Chinese adults (51.0% female, mean age = 32.7 years). **RESULTS:** Results revealed that 79.9% of sleep quality variance could be explained by surrounding variables in the network. Time control perception emerged as a proximal factor, demonstrating the highest centrality (strength = 1.85, betweenness = 1.92, closeness = 1.88) and strongest connections to sleep quality. Behavioral factors (physical activity level, shift work, work-life balance) functioned as intermediate mechanisms, while environmental and temporal patterns (light exposure, weekend catch-up sleep, social interaction frequency, daily activity rhythm) operated as distal influences. Network stability analysis showed robust estimation precision (CS coefficients > 0.70 for all centrality measures). **CONCLUSION:** These findings advance our theoretical understanding of sleep quality as embedded within a dynamic network of interacting factors and provide empirical support for targeted interventions focusing on time control perception and behavioral mediators to improve sleep outcomes. The network perspective offers novel insights for developing effective, hierarchically structured approaches to sleep quality enhancement in contemporary society.

[Lien vers l'article](#)

A survey on the quality of sleep among new nurses.

Xu D, Jiang S, Zhang J, Yu Q, Ji L. *Work*. 2025 Oct;82(2):594-9.

BackgroundNew nurses' transition to clinical work involves challenges affecting their sleep quality, health, and work efficiency.**Objective**The aim of this study was to survey the quality of sleep among new nurses and suggest strategies to improve their sleep to help them adapt better to their work roles.**Methods**We adopted the questionnaire method and convenience sampling for this study. Using the Pittsburgh Sleep Quality Index (PSQI), we surveyed the sleep quality of 118 new nurses in four tertiary grade A hospitals in Harbin City, China.**Results**We found a statistically significant difference in sleep quality between the new nurses and normal adults ($P < 0.05$). The nurses had statistically significant differences in sleep quality, sleep disturbance, and daytime dysfunction between the first and third months of joining their job ($P < 0.05$). There were no statistically significant differences in sleep latency, sleep duration, sleep efficiency, use of sleep medication, or overall scores among the nurses ($P > 0.05$).**Conclusions**The sleep quality of new nurses needs to improve, and this can be facilitated through specific techniques. Improving the sleep quality of new nurses requires joint efforts from individuals, organizations, and community support.

[Lien vers l'article](#)

Chronobiologie

Animal

Artificial light at night disrupts fertility in *Drosophila melanogaster*.

Martelli M, Lazzarini R, Piva F, Salvio G, Ciarloni A, Santarelli L, et al. *Comp Biochem Physiol C Toxicol Pharmacol*. 2025 Sep 6;299:110349.

Artificial light at night (ALAN) can disrupt numerous biological processes, and is increasingly studied in animal models. Here, we evaluated the impact of red and blue ALAN on *Drosophila melanogaster*, focusing on fertility, development, circadian rhythms, and gene expression. All results were compared to those of a control group maintained under a 12 h white light/12 h dark cycle. Red ALAN exposure increased the number of eggs laid but reduced the hatching rate and shortened the larval period. Conversely, blue ALAN led to fewer eggs laid, fewer emerging adults, and lower hatching success. Significant alterations in circadian rhythm and the sleep-wake cycle were observed in flies exposed to both red and blue ALAN, including a reduction in mean locomotor activity over 24 h and during the daytime period, increased sleep duration during the day, and reduced sleep duration at night. Effects were more pronounced under blue ALAN, which disrupted circadian rhythm by eliminating morning and evening activity peaks and increasing nocturnal activity. Gene expression analyses revealed that red ALAN upregulated ecdysone-induced protein 74EF (E74) and the ecdysone receptor (EcR) expression in adults, while juvenile hormone binding protein 1 (Jhbp1) was elevated under both light conditions. In larvae, both ALAN spectra increased expression of E74 and Jhbp1. These findings demonstrate that red and blue ALAN can significantly disrupt fertility and development in *Drosophila melanogaster*. Given the rising prevalence of light pollution and night-shift work, further studies are needed to investigate ALAN-related reproductive impairments in other animals, including vertebrates and humans.

[Lien vers l'article](#)

Time-Restricted Feeding Affects Energy Metabolism in Lactating Striped Hamsters (*Cricetulus barabensis*, Cricetidae, Rodentia).

Li W, Dong X, He J, Jin X, Yin B, Bo T, et al. *Biology (Basel)*. 2025 Sep 12;14(9).

Lactation is a critical period in which mothers generally increase food intake and metabolism to meet high energy demands. In the present study, we examined the effect of time-restricted feeding (TRF) on lactating striped hamsters. On the day of litter birth, lactating females were assigned into 3 experimental groups that experienced 24-h ad lib feeding (Con), 12-h daytime feeding (DF), or 12-h nighttime feeding (NF). A group of non-lactating females with 24-h feeding (NL) served as an additional control. Our data show that lactating females had increased food intake, oxygen consumption, and small intestine mass but a decreased level of circulating melatonin, compared to the NL females. However, TRF manipulation significantly reduced the mother's food intake, the pup's body mass, and survival rate. In addition, TRF had some phase-specific (i.e., DF vs. NF) effects on facilitating body mass loss, decreasing CART, AgRP, and POMC gene expression in the hypothalamus, and increasing abundance in Desulfobacterota and Actinobacteriota in the gut microbiota of lactating females. Together, our data illustrate adaptive changes of lactating hamsters under TRF conditions, and highlight the importance of food access and dietary rhythm regulation in maternal and offspring health, development, and reproductive success. These findings not only expand our understanding of lactation biology and ecological feeding strategies but also highlight the significance of regular dietary patterns for lactating individuals, with particular emphasis on shift workers and other populations with irregular daily schedules.

[Lien vers l'article](#)

The circadian regulator PER1 inhibits osteoclastogenesis by activating inflammatory genes.

Katoku-Kikyo N, Vu EK, Mitchell S, Karkache IY, Bradley EW, Kikyo N. *bioRxiv*. 2025 Sep 19.

Disruption of circadian rhythms predisposes shift workers to many chronic conditions, including osteoporosis. However, the effects of disrupted circadian rhythms on bone remodeling remain largely unknown. Here, we show that one of the core circadian regulators PER1 inhibits osteoclastogenesis by upregulating genes involved in inflammation. The conditional knockout of Per1 in osteoclasts and related cells resulted in decreased bone mass in the femurs of mice, along with increased osteoclasts and decreased osteoblasts. Osteoclastogenesis was also promoted by Per1 depletion in vitro with 17 downregulated inflammatory genes. Eight of these genes were known to promote or inhibit osteoclastogenesis depending on the stage of osteoclastogenesis and the presence or absence of infection. The knockdown of three of these genes, which were involved in the inflammasome pathway, promoted osteoclastogenesis, mirroring the effects of Per1 knockout and offering a mechanistic explanation for the Per1-mediated inhibition of osteoclastogenesis. These results were not observed following the depletion of a paralog Per2. Per1 knockout mice maintain general circadian rhythms, unlike arrhythmic Per1/Per2 double knockout mice. This gives credence to Per1 as a selective target for therapeutic interventions without disrupting the circadian rhythms. This study uncovered a link between a circadian regulator and osteoclastogenesis in the broader context of osteoimmunology. Our findings may be mechanistically relevant to inflammatory bone diseases influenced by circadian rhythms, such as rheumatoid arthritis and osteoarthritis, as well as other bone diseases predisposed by chronic circadian disruption.

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The probiotic *Lactobacillus kefirifaciens* K6 alleviates exercise and sleep deprivation-induced physiological dysregulation and neuropsychiatric disorders via modulation of inflammation, circadian rhythm, and stress response.

Chen CW, Wu LT, Chiu PH, Chen YP, Huang WC. *Int J Med Sci*. 2025;22(14):3722-36.

Individuals often suffer from insufficient or disrupted sleep due to night shifts, work pressure, and irregular lifestyles. Sleep deprivation (SD), defined as an intentional or unintentional reduction in sleep quality or quantity, has been associated with an increased risk of metabolic disorders, gut dysbiosis, emotional disturbances, and diminished performance in occupational and physical activities. Functional probiotics have been shown to regulate physiological homeostasis and ameliorate diseases through their impact on the microbiota and various physiological pathways. In this study, we employed the modified multiple platform method (MMPM) to induce SD in an animal model, simulating physiological dysregulation and psychological characteristics associated with SD. We further investigated whether exercise and the probiotic *Lactobacillus kefirifaciens* K6 could mitigate the effects of SD on physiological homeostasis, neuropsychological function, inflammation, circadian rhythm, and exercise capacity. We found that the probiotic K6 significantly alleviated depression and anxiety while improving glucose intolerance and declining endurance capacity in the SD model. Elevated injury indexes (CK and LDH) induced by SD combined with exercise training were also significantly reduced under K6 supplementation. In the liver and muscle, SD alone or combined with exercise led to inflammation (TNF- α) and dysregulated circadian gene expression (BMAL-1, CLOCK), both of which were mitigated by K6 supplementation. In the intestine, hypothalamus, and hippocampus, SD or SD combined with exercise-induced inflammation (TNF- α , IL-1 β) and tight junction hyperpermeability (Claudin-1, ZO-1) were alleviated with K6 supplementation, as were the circadian genes (BMAL-1, CLOCK) and corticotropin-releasing hormone receptor genes (CRF1, CRF2) in hypothalamus and hippocampus under SD alone or combined with exercise. The functional probiotic K6 improved physiological adaption, neuropsychological behaviors, and exercise performance with the implementation of SD and exercise training, potentially through regulation of inflammation, circadian

rhythm, and stress response, contributing to overall health maintenance. The K6 probiotic strain may serve as a nutritional strategy to mitigate health risks and enhance performance affected by sleep deprivation.

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Arrhythmic expression signatures of circadian clock-associated transcription factors and chronic circadian disruption contribute to advanced prostate cancer growth.

Chopra R, Li H, Xie W, Lam DHT, Chan FL. *Int J Cancer*. 2025 Sep 15.

Disruption of circadian rhythms due to night-shift work is classified as a probable carcinogen for cancers of the breast, prostate, and colorectum by the International Agency for Research on Cancer. Global epidemiological studies link chronic circadian clock disruption to increased risk of prostate cancer via hormone and metabolic dysregulation. This study investigated and compared the circadian expression patterns of core-circadian controlled genes (CCCGs) and nuclear receptors (NRs) under a normal 12-h light/dark cycle in normal mouse prostate and advanced androgen-insensitive prostate tumors derived from a transgenic mouse model of prostate adenocarcinoma (TGMAP). Our results showed that a total of eight CCCGs and 22 NRs exhibited rhythmic oscillations in the normal mouse prostate. In contrast, the rhythmic expressions of CCCGs and NRs were significantly disrupted in TGMAP prostate tumors, with a concurrent loss of androgen receptor expression. Circadian administration of cisplatin at a specific morning time point (chrono-chemotherapy), as applied in TGMAP tumor-bearing mice, demonstrated optimal antitumor efficacy, which correlated with the circadian rhythmic expression of DNA damage repair genes. Finally, we showed that chronic jet-lag conditions could promote the oncogenic growth of hormone-sensitive VCaP-derived xenograft tumors, with a correlation to elevated serum androgen levels and increased expression of enzyme genes involved in intratumoral androgen biosynthesis. Together, this study demonstrated that advanced prostate tumors exhibited dysregulated circadian transcriptional networks, as shown by their disrupted expression of CCCGs and NRs. The potential therapeutic application of chrono-chemotherapy in advanced prostate cancer management and the disruption of circadian rhythms under chronic jet-lag conditions could enhance prostate cancer growth.

[Lien vers l'article](#)

Homme

Circadian regulation of vascular function: Metabolism as a link from molecular mechanisms to clinical implications.

Wang F, Yao P, Yu H, Gan L, Cao Y. *Biochim Biophys Acta Mol Basis Dis*. 2025 Sep 9;1872(1):168048.

Circadian rhythms act as central coordinators of vascular physiology, synchronizing metabolic and hemodynamic processes across different vascular beds. Cell-autonomous clocks dynamically regulate vascular functions, including vasodilation and inflammatory responses, in endothelial cells, smooth muscle cells, and fibroblasts. Emerging evidence indicates extensive crosstalk with metabolic cell death pathways, particularly lipophagy-mediated lipid turnover, redox stress-triggered disulfidptosis, and glucotoxicity-induced metabolic collapse, all of which display circadian rhythmicity. Disruption of these pathways, such as in shift workers or individuals carrying clock gene mutation, significantly increases the risk of hypertension, atherosclerosis, and microvascular dysfunction. In this review, we highlight translational strategies that leverage circadian biology, including chronotherapy, pharmacological modulation of core circadian clock components, light-dark synchronization, and lifestyle interventions. We also emphasize that future research should aim to decode the spatiotemporal regulation of

circadian-metabolic networks, which may offer novel insights for precision medicine approaches targeting vascular metabolic disorders.

[Lien vers l'article](#)

Targeting Cryptochromes in Chronic Diseases.

Toda T, Hirota T. *Cell Biol Int*. 2025 Sep 26.

The circadian clock generates 24-h molecular rhythms through transcription-translation negative feedback loops (TTFLs) and regulates daily physiological processes such as sleep-wake cycles, body temperature, hormone secretion, metabolism, and immune function. Cryptochromes (CRY1 and CRY2) are essential components of the mammalian circadian clock as the transcriptional repressors in TTFLs. Disruption of the circadian clock by shiftwork or mutations of clock genes disturbs daily physiological rhythms and poses serious risks to human health. Misregulations of CRY in humans and mice induce chronic diseases such as diabetes mellitus, sleep disorders, inflammatory diseases, and cancers. Chemical biology approaches have been applied to further elucidate molecular mechanisms of the circadian clock and to treat chronic diseases. The chemicals enable dose-dependent and reversible manipulation, forming the basis of drug development. Since 2012, about a dozen small-molecule compounds targeting CRY have been discovered, enabling the control of CRY functions. This review summarizes the roles of CRY in chronic diseases and introduces therapeutic approaches using CRY-targeting compounds. A deeper understanding of the pathology of chronic diseases and the effects of CRY-targeting compounds may lead to new circadian clock-based strategies for clinical advances.

[Lien vers l'article](#)

Associations of chronotype and socio-demographic factors with timing of eating in finnish preschool-aged children.

Tillman I, Maukonen M, Ruokolahti AM, Vepsäläinen H, Ray C, Rahkola J, et al. *Eur J Nutr*. 2025 Sep 18;64(6):279.

PURPOSE: Chrononutrition, encompassing timing, frequency, and regularity of dietary intake, may affect metabolic health and chronic illness risk, making early dietary patterns crucial. This study aimed to explore potential determinants of chrononutrition among preschoolers. **METHODS:** The cross-sectional DAGIS study included 677 Finnish preschoolers aged 3-6. Data were collected through 3-day food records and 7-day actigraphy-measured sleep. ANCOVA and linear regression were used to analyze associations between potential determinants-chronotype, SES, parental work hours, age, and sex-and chrononutrition variables (timing of the first and last EOs, energy and eating midpoints, duration of the fasting window, morning and evening latency, and the number of EOs). **RESULTS:** A later chronotype was associated with later timing for first and last EOs, eating and energy midpoints ($p < 0.001$), shorter morning ($p = 0.002$), and longer evening latency ($p < 0.001$). Children whose fathers worked regular hours had a longer fasting window compared to children whose fathers did not work ($p = 0.03$), and a longer morning latency compared to children whose fathers did shift work ($p = 0.04$). High SES was associated with later energy midpoint ($p = 0.004$). On weekdays children whose mothers worked regular hours had their first EO earlier compared to children whose mothers worked shifts ($p = 0.006$) and a shorter fasting window ($p = 0.009$). During weekend days boys had a longer morning latency compared to girls ($p < 0.001$), and children with morning ($p = 0.006$) and intermediate ($p = 0.02$) chronotypes had more EOs compared to evening chronotypes. **CONCLUSION:** Chronotype was a key determinant of the timing of food intake in Finnish preschool-aged children, while sociodemographic factors had a less pronounced association.

[Lien vers l'article](#)

[Treatment recommendations for chronic insomnia - cognitive behavioural therapy as first-line treatment].

Slawik H, Acker JG, Blume C, Castelnovo A, Cervena KE, Gerstenberg M, et al. *Praxis (Bern 1994)*. 2025 Sep;114(8-9):313-20.

In addition to the treatment recommendations published by the Special Interest Group (SIG) "Mental Health" (formerly "Sleep Psychiatry") of the Swiss Society for Sleep Research, Sleep Medicine and Chronobiology (SGSSC), the following article focusses on cognitive behavioural therapy for insomnia (CBT-I), its evidence, implementation and application, including in shift work, patients on medication, older people, various formats and non-pharmacological alternatives. Chronic insomnia is a disorder characterised by hyperarousal rather than sleep deprivation. The most effective treatment is bedtime restriction. This can be accompanied by increased daytime sleepiness and concentration deficits, which can be challenging. Furthermore, it is a challenge to find activities for the time that becomes available. The number of therapy places is still insufficient. However, it has been shown that CBT-I is also effective in shortened formats, digitally or when carried out by other professional groups.

[Lien vers l'article](#)

Associations between shift work arrangements, sleep characteristics, urinary cortisol and melatonin levels among nurses in Hong Kong.

Li B, Li W, Lee PMY, Qiu S, Huss A, Ma JYT, et al. *Occup Environ Med*. 2025 Sep 16;82(7):335-42.

OBJECTIVES: Shift work disrupts hormonal rhythms, but evidence linking specific shift patterns to cortisol/melatonin variations remains limited. This study evaluated the associations of a rapid-rotating shift pattern (ie, PAN pattern, shift transitions from afternoon to morning to night shifts within approximately 40 hours) and irregular non-PAN pattern shifts with urinary cortisol and melatonin among Hong Kong nurses, while also assessing the role of sleep on rhythmic hormones. **METHODS:** A 7-day actigraphy-based study recruited 201 shift nurses and 100 daytime workers. First-morning voids on the first non-workday postnight shift or postoffice work measured cortisol and melatonin metabolite (aMT6s) levels. Actigraphy measured sleep parameters. Generalised linear models examined the associations. **RESULTS:** PAN pattern nurses slept less than non-PAN nurses (5.8 vs 6.4 hours) and exhibited greater circadian phase delay (16.4 vs 15.9 hours). Non-PAN nurses had the lowest cortisol, cortisone and aMT6s levels, with significantly reduced cortisol levels ($\beta=-0.31$, $p=0.017$) compared with daytime workers. Sleep characteristics strongly influenced hormone levels, with each additional hour of sleep decreasing cortisol levels by 10.3%, while each later hour of wake-up time was associated with 3.9% lower cortisol levels; later sleep midpoints decreased melatonin by 5.1% per hour. A three-way interaction revealed weakened cortisol-sleep duration associations with later wake-up times in PAN nurses ($p=0.032$). **CONCLUSIONS:** Irregular shifts, longer sleep duration and delayed wake-up time significantly reduced waking cortisol levels, while delayed sleep timing suppressed melatonin secretion. These findings highlight how shift arrangements and sleep characteristics disrupt hormonal rhythms in shift workers. Optimising shift patterns and sleep interventions (eg, prioritising duration/consistency) may mitigate circadian disruption and improve shift worker health.

[Lien vers l'article](#)

Traditional coca chewing and cortisol modulation in Andean miners: A pilot quasi-experimental repeated-measures study on stress physiology at high altitude.

Lopez-Chau LA, Pastor-Goyzueta A, Llosa T. *J Ethnopharmacol*. 2025 Sep 24;355(Pt A):120630.

ETHNOPHARMACOLOGICAL RELEVANCE: Traditional coca leaf chewing (*Erythroxylum Coca* Lam.) remains a widespread cultural practice in the Andean highlands, particularly among miners exposed

to high-altitude and high-strain working conditions. While coca's ethnopharmacological significance is well documented, its physiological effects on stress-related biomarkers, such as cortisol, remain underexplored. **AIM OF THE STUDY:** We investigated whether habitual coca chewing during work shifts was associated with different serum cortisol concentrations in Peruvian miners working day and night shifts at high altitudes. **MATERIALS AND METHODS:** A quasi-experimental design with repeated measures at two time points was implemented at a mining site located 4000 m above sea level. A group of male local miners ($n = 20$) was purposively sampled and stratified into habitual coca chewers (CC, $n = 10$) and non-chewers (NC, $n = 10$), with each group subdivided by work shift (day vs. night). Serum cortisol was measured at 8:00 a.m. and 4:00 p.m. using radioimmunoassay, and group status was confirmed via urinary benzoylecgonine testing. Two-way ANOVA, post-hoc Tukey tests, and effect sizes were calculated. **RESULTS:** Coca-chewers exhibited significantly lower cortisol levels than non-chewers at both time points. The most pronounced difference was observed at 8:00 a.m. among night-shift workers ($17.17 \mu\text{g/dL}$ vs. $8.90 \mu\text{g/dL}$, $p < 0.001$, $d = 4.67$). Group $\times$ shift interaction effects were significant at 8:00 a.m. ($p = 0.0415$), but not at 4:00 p.m. **CONCLUSIONS:** These findings suggest that traditional coca chewing shows a cortisol pattern consistent with lower HPA axis activity under occupational stress, particularly during circadian disruptions. Interpretation, however, is constrained by the small sample size ($n = 20$) and should be considered exploratory. Further research is warranted to examine the long-term effects and underlying mechanisms through biocultural and molecular approaches.

[Lien vers l'article](#)

Experimental partial-night sleep restriction increases pain sensitivity, but does not alter inflammatory plasma biomarkers.

Matre D, Haugen F, Moe AG, Schjøllberg T, Knardahl S, Holm K, et al. *Scand J Pain*. 2025 Jan 1;25(1).

OBJECTIVES: Disturbed sleep and chronic pain are public health concerns. Sleep disturbances seem to influence inflammation and may contribute to the increased pain sensitivity after sleep restriction (SR), such as after night work. The primary objective of this study was to determine the effects of SR on pain sensitivity and on relevant markers of inflammation. A secondary objective was to determine if SR affected pain sensitivity and inflammatory responses differently in men and women. **METHODS:** A paired crossover design with block randomization was applied. Subjects were instructed to follow their habitual sleep (HS) rhythm for two nights (HS condition) and to delay their bedtime to shorten their sleep with 50% for two nights (SR condition). Thirty-nine healthy volunteers between 19 and 44 years old participated (21 women). Experimental pain sensitivity was tested with heat-, electrical-, and pressure pain thresholds (PPTs); electrical temporal summation threshold; pinprick pain; suprathreshold heat pain tolerance; and rating of suprathreshold heat and cold pain. The following markers of inflammation were measured in plasma from a blood sample taken between 10:00 and 12:00: C-reactive protein, fractalkine, tumor necrosis factor, interleukin -8, and monocyte chemoattractant protein-1. **RESULTS:** Most subjects did not comply with the SR instructions. Total sleep time during SR was on average 2.6 h shorter than during HS. Therefore, the SR condition was re-defined to be "at least 40% reduction in the time in bed (TIB) the last night." The HS condition was re-defined to "at least 85% of normally reported TIB." SR produced higher suprathreshold heat pain sensitivity and cold pressor pain, compared to HS, but no significant change in electrical pain threshold, electrical temporal summation threshold, PPT, or any of the measured immune parameters. Sex-stratified analyses indicated that the effect on heat pain only occurred in women and that the effect on cold pressor pain was significant only in men. **CONCLUSIONS:** The present findings indicate that heat and cold pressor pain were rated higher following SR, whereas pain thresholds remained unchanged. We did not find an effect of SR on biomarkers of inflammation. The findings should be cautiously interpreted given the poor adherence to the SR condition.

[Lien vers l'article](#)

Impact of artificial light at night and night shift work on brain functions and metabolism.

Korf HW, Bittner N, Caspers S, von Gall C. *Gen Comp Endocrinol*. 2025 Sep 19;373:114822.

The present review focusses on artificial light at night (ALAN) and night shift work (NSW) as examples for chronodisruption occurring in modern societies. Chronodisruption can lead to significant sleep and health problems and increase the risk of chronic diseases. This pathomechanism involves endocrine systems (glucocorticoids, melatonin). ALAN affects at least 80% of mankind and disturbs physiological, biological and behavioral processes in wildlife. In humans, the nighttime use of illuminated screens contributes to ALAN, with as yet unforeseeable consequences for body and brain. Acute continuous light exposure triggers pro-inflammatory responses in the brain which may make it more vulnerable to additional aversive stimuli. Moreover, acute continuous light impairs cognitive function and synaptic plasticity and leads to an increase in corticosterone, a stress hormone and an important mediator in the circadian system. Several studies on NSW reported increased risk for sleep disorders, cancer, cardiovascular disease, type 2 diabetes, obesity, and depression. However, objective imaging analyses supplemented by neuropsychological examinations revealed that NSW has only minor effects on brain functions. Moreover, a recent study showed that NSW was not accompanied by metabolic, cardiovascular or immunological problems. In conclusion, ALAN may be considered a relevant factor influencing human health and biodiversity and should be avoided whenever possible. Studies on the effects of NSW report varying results. This may be due to differences in light intensity during shift, the quality of the occupational health service and the shift work schedule. All these aspects need further investigations to prevent or mitigate the health risk of NSW.

[Lien vers l'article](#)

Salivary Circadian Gene Expression as a Molecular Indicator of Early Cognitive Impairment in Shift Workers: A Cross-Sectional Study of 300 Adults.

Karim A, Rayan Y, Amir Z, Samir M, Jamal T, Adnan K, et al. *J Mol Neurosci*. 2025 Sep 23;75(4):121.

This cross-sectional study explored the potential utility of salivary circadian gene expression as a non-invasive biomarker for early cognitive impairment in shift workers. Three hundred participants aged 25 to 55 were categorized into cognitively impaired shift workers (MoCA < 26, n = 100), cognitively intact shift workers (n = 100), and non-shift working controls (n = 100). Saliva samples collected at 07:00 and 19:00 were analyzed for mRNA expression of PER1, BMAL1, and CLOCK using qRT-PCR. Shift workers with cognitive impairment showed significantly attenuated diurnal variation in gene expression, with reduced evening levels of BMAL1 and PER1 compared to both control groups (p < 0.001). Evening BMAL1 expression was independently associated with cognitive status (OR 2.14, 95% CI 1.62-2.85), achieving an AUC of 0.876 (81.3% sensitivity, 78.0% specificity). A combined three-gene panel modestly improved diagnostic accuracy (AUC 0.913). These preliminary findings suggest that alterations in salivary circadian gene expression, particularly in BMAL1, may hold promise as a molecular indicator of early neurocognitive changes in shift-working populations.

[Lien vers l'article](#)

Impact of night shift work on telomere length and epigenetic age in older workers.

Ferrari L, Comotti A, Fattori A, Barnini T, Laurino M, Bufano P, et al. *J Occup Med Toxicol*. 2025 Oct 1;20(1):31.

BACKGROUND: Night shift work disrupts circadian rhythms and has been associated with various health disorders, particularly in older adults. Biological age indicators, such as telomere length (TL) and DNA methylation (DNAm) age, offer effective tools to assess early ageing-related changes Linked to occupational exposures. This study aims to investigate the association between night shift work and

biological ageing markers among workers aged over 50 years. METHODS: Participants were classified as current, former, or never night shift workers. TL was measured via quantitative PCR, and DNAm age was estimated based on methylation at five CpG sites. Age acceleration (AA) was calculated as the residual from regressing DNAm age on chronological age. Associations between shift work and ageing markers were evaluated using univariate and multivariate analyses. RESULTS: Out of 330 workers invited, a total of 262 (response rate 79.6%) were recruited, predominantly male (87%) with a mean age of 54.5 ± 3.1 years. Current night shift workers exhibited significantly shorter telomeres compared to non-current shift workers (adjusted $\beta = -0.07$, $p = 0.03$). Among former shift workers, longer cumulative exposure was associated with reduced TL ($\beta = -0.01$, $p = 0.004$). Additionally, TL increased and AA decreased with each year since night shift cessation ($\beta = 0.01$, $p = 0.001$ and $\beta = -0.08$, $p = 0.05$, respectively). CONCLUSIONS: Prolonged night shift work is associated with telomere shortening, suggesting increased cellular ageing, partially reversible after night-shift cessation. DNAm age appears less sensitive to recent or cumulative shift work exposure.

[Lien vers l'article](#)

Quantifying cumulative circadian disruption from shift work and associations with health outcomes in a large cohort of nurses.

de Bruijn L, Schaapveld M, Vlaanderen JJ, Vermeulen RCH, Kromhout H, van Leeuwen FE, et al. *Sleep*. 2025 Sep 26.

STUDY OBJECTIVES: Night shifts are commonly used as proxy for circadian disruption (CD) in epidemiological studies. However, other shift types can also cause CD if they interfere with a worker's biological night. We quantified and compared cumulative CD to night shift exposure and assessed their associations with health-related outcomes. METHODS: Shift work exposure was derived from questionnaire data for 42,119 nurses for the period 2012-2017. Cumulative CD was estimated as the total overlap (hours) between shift work and preferred sleep-wake times. Pearson's correlation (r) assessed relationships between cumulative CD and night shift exposure. Associations with sleep disturbances, medication use, and overweight were analyzed using Poisson regression. RESULTS: The median cumulative CD among shift workers was 1,674 hours over six years (interquartile range=432-3,153). High CD ($\geq 2,809$ hours) was associated with increased prevalence of sleep problems (incidence rate ratio [IRR]=1.10, 95% confidence interval [CI]=1.07-1.13), melatonin use (IRR=1.86; 95%CI=1.70-2.04), sleep medication use (IRR=1.15; 95%CI=1.01-1.32), and overweight (IRR=1.04; 95%CI=1.02-1.07). The number of performed night shifts strongly correlated with cumulative CD ($r=0.93$), and using night shifts as proxy for CD gave similar results. However, among shift workers who did not perform night shifts, high CD was still associated with increased sleep problems and melatonin use. CONCLUSION: Cumulative CD is associated with sleep- and health disturbances, even among shift workers who do not perform night shifts, underlining its potential role in disease development. While night shifts remain a practical proxy in large-scale studies, our study highlights the importance of using more nuanced, individualized measures of CD.

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The relationship between circadian type and physical activity as predictors of sleepiness and fatigue during simulated nightshifts: a randomised controlled trial.

Easton DF, Gupta CC, Vincent GE, Vandelanotte C, Duncan MJ, Tucker P, et al. *Ergonomics*. 2025 Oct;68(10):1679-93.

Breaks involving physical activity may provide on-shift recovery from sleepiness and fatigue during nightshifts, with effects potentially influenced by circadian type. Thirty-three adults ($M \pm SD$ age: 24.6 ± 4.8 y; 55% female) participated in five laboratory nightshifts (2200-0600h) and were randomised to sedentary (SIT; $n = 14$) or 'breaking-up' sitting (BREAK; $n = 19$). Participants completed the Circadian

Type Inventory, categorising as rigid ($n = 12$) or flexible ($n = 11$); and languid ($n = 11$) or vigorous ($n = 13$). BREAK participants walked 3-minutes every 30-minutes at 3.2 km/h; all completed fatigue and sleepiness scales. Linear mixed models showed a 3-way interaction between nightshift (N1-N5), condition (SIT, BREAK), and rigidity-flexibility for fatigue ($p < .001$) and sleepiness ($p < .001$). Fatigue and sleepiness were greatest on N1 for SIT-Flexible and BREAK-Rigid, with SIT-Rigid experiencing the greatest levels overall. BREAK-Flexible showed no reduction. No 2-way interactions between nightshift and languidity-vigour were found. Breaking up sitting attenuated fatigue and sleepiness for rigid types only. On-shift recovery needs may differ for circadian types.

[Lien vers l'article](#)

Pre-shift work chronotype matters: resilience as a mediator to shift work tolerance.

Kim JH. *Sleep*. 2025 Sep 19.

[Lien vers l'article](#)

Conduites addictives

Workplace situations and alcohol consumption: a review of the literature. Rationale for the occupational physician.

Murugavel M, Godeau D, Barbotin B, Lejoyeux M, Guillon F, El Khatib A. *Ind Health*. 2025 Sep 23.

The aim of this work is to identify occupational situations that are at risk and/or encourage alcohol use, whatever the type of consumption. This is a review of the literature in search of articles published between 1989 and August 2019, dealing with the effects of work situations on alcohol consumption. A qualitative analysis was conducted on the articles meeting the selection criteria, and the data were summarised based on the main risk factors identified. There is some evidence supporting work organisation as being at risk of alcohol consumption. This concerns mainly shift work and long-working hours, although the relation with drinking behaviours seems to be conflicting. Social relations and interactions within the workplace may induce (or be at risk of) alcohol consumption, particularly in the case of tolerant standards. The results regarding work stress are contradictory. Data regarding physical workload are scarce. Most studies addressed alcohol consumption as a public health issue, in the labour force, and not as an occupational health issue focused on work situations and conditions. Yet this knowledge may help the occupational physician to question the work environment, in order to prevent this risk on a collective technical level and on an individual case-by-case basis.

[Lien vers l'article](#)

Reproduction

Development and validation of a nomogram model for sleep disorders in patients with recurrent implantation failure based on physiological and lifestyle factors.

Zhang Y, Qin N, Hu J, Bai J, Pan M, Xu Y, et al. *Front Endocrinol (Lausanne)*. 2025;16:1585144.

OBJECTIVE: To establish and validate a nomogram model for the quality of sleep in patients with recurrent implantation failure (RIF) and to evaluate its performance. **METHODS:** From January 2023 to June 2023, 484 RIF patients who underwent ART fertilization treatment at the Reproductive Medicine Center of Tongji University-affiliated Obstetrics and Gynecology Hospital were selected as the modeling set and internal validation. Additionally, from July to September 2023, 223 RIF patients who underwent ART fertilization treatment at the Reproductive Medicine Center of Tongji University-affiliated Obstetrics and Gynecology Hospital were chosen as the external validation set. Their clinical data was collected. Lasso regression was used to screen potential predictive variables and multifactor logistic regression analysis was conducted to determine the final predictors. A nomogram model was established, and the model was evaluated using methods such as plotting receiver operating characteristic (ROC) curves, calibration curves, Hosmer-Lemeshow goodness of fit test, and decision curve analysis. **RESULTS:** Through Lasso regression and multifactor logistic regression, 7 predictors were identified, including FSH, E2, depression mood (moderate, severe), daily exercise time, sun exposure, caffeine intake, and shift work (>16h/w) for constructing the nomogram model. The AUC for the modeling set was 0.971 (95%CI:0.952~0.989), for the internal validation set was 0.960 (95%CI:0.937~0.979), and for the external validation set was 0.850 (95%CI:0.739~0.960), indicating good predictive performance of the model. **CONCLUSION:** This study established and validated a nomogram model composed of 7 clinical indicators for sleep disorders in RIF patients. The predictors include both physiological indicators and daily lifestyle habits, demonstrating significant predictive value and clinical application efficiency. It can be used for early identification of potential sleep disorders in RIF patients, providing certain reference significance for clinical work.

[Lien vers l'article](#)

Influence of psychosocial work factors on male fertility and sperm quality: a scoping review.

Ansah EW, Obeng P, Sarfo JO, Amoada M. *Reprod Biol Endocrinol*. 2025 Oct 1;23(1):131.

BACKGROUND: While much research is available on the implications of environmental and occupational exposures to chemicals on infertility and sperm quality, less is known about the impact of psychosocial work exposures on male reproductive health, including sperm quality. Therefore, this scoping review maps evidence of the psychosocial work factors and their effects on male fertility, including sperm quality. **METHODS:** Searches were conducted in JSTOR, Central, PubMed, and Web of Science, with additional searches carried out in Google and Google Scholar. The study included only peer-reviewed articles published in the English language, conducted among male working population between January 1990 and January 2024. Two authors independently extracted data from eligible full-text records, which the other two authors reviewed the extracted data. **RESULTS:** The search conducted in the selected databases produced 1,322 records, and through a rigorous screening process, 18 full-text peer reviewed articles were included in this review. The findings about the influence of shift work, long working hours, and job strain on male fertility and sperm quality remain inconclusive. Unfortunately, job stress and cognitive weariness reduce male fertility by lowering sperm quality. Fortunately, social support at work is found to buffer the effect of high job demands on sperm quality. Moreover, workers who smoke tobacco, have poor sleep quality, and have history of depression and diabetes are more likely to suffer infertility and have poor sperm quality. **CONCLUSION:** Workplace interventions are needed to match high job demands with adequate job resources such as social support, job control, adequate breaks and rest periods, and to encourage healthy lifestyles for

improved reproductive health outcomes among male workers. More quality studies are needed to explore the influence of psychosocial working conditions on sperm quality.

[Lien vers l'article](#)

Gender disparity in delayed childbearing among medical trainees in Ontario.

Friedman CL, Saliba S, Janmohamed A, McNeill K, Dason S, Karnis MF. *Can Med Educ J*. 2025 Sep;16(4):5-13.

OBJECTIVE: Physicians report high rates of delayed childbearing and are at increased risk of infertility and pregnancy loss. There are limited studies on this topic in the Canadian context, particularly for trainees. Our objective was to explore Ontario medical trainees' experiences with and knowledge of delayed childbearing, infertility, and fertility treatments. **METHODS:** We administered a cross-sectional survey to all residents and fellows in Ontario. Descriptive statistics, multiple regression, and thematic analysis of free text responses are used to present the findings. **RESULTS:** 460 trainees responded to the survey. Over half (57%) intentionally delayed childbearing due to medical training, with long working hours being the most cited reason (82%). Cis women were 85% more likely to delay family initiation than cis men. Rates of early pregnancy loss (17%) were similar to that of the Canadian average for this age group, while rates of infertility (14%) were slightly higher. Knowledge gaps were identified, with trainees scoring 62% on knowledge questions around age-related fertility decline and fertility treatment. The majority (73%) felt their programs were supportive of family initiation during training, with top areas for change identified as increased flexibility with working hours, and increased protected time for required extracurricular activities. **CONCLUSION:** Trainee physicians in Ontario report high rates of delaying family initiation due to training, with greater impacts on cis women compared to cis men, and slightly higher rates of infertility. Addressing knowledge gaps is one way to empower trainees to make informed family planning decisions going forward.

[Lien vers l'article](#)

Polyexposition

Aucun article dans ce bulletin.

Pathologies cardiovasculaires

Circadian regulation of vascular function: Metabolism as a link from molecular mechanisms to clinical implications.

Wang F, Yao P, Yu H, Gan L, Cao Y. *Biochim Biophys Acta Mol Basis Dis*. 2025 Sep 9;1872(1):168048.

Circadian rhythms act as central coordinators of vascular physiology, synchronizing metabolic and hemodynamic processes across different vascular beds. Cell-autonomous clocks dynamically regulate vascular functions, including vasodilation and inflammatory responses, in endothelial cells, smooth muscle cells, and fibroblasts. Emerging evidence indicates extensive crosstalk with metabolic cell death pathways, particularly lipophagy-mediated lipid turnover, redox stress-triggered disulfidoptosis, and glucotoxicity-induced metabolic collapse, all of which display circadian rhythmicity. Disruption of these pathways, such as in shift workers or individuals carrying clock gene mutation, significantly increases the risk of hypertension, atherosclerosis, and microvascular dysfunction. In this review, we highlight translational strategies that leverage circadian biology, including chronotherapy, pharmacological modulation of core circadian clock components, light-dark synchronization, and lifestyle interventions. We also emphasize that future research should aim to decode the spatiotemporal regulation of circadian-metabolic networks, which may offer novel insights for precision medicine approaches targeting vascular metabolic disorders.

[Lien vers l'article](#)

Effects of a 12-hour shift system on sleep and cardiovascular health of male machine and plant operators - a longitudinal study over four years.

Seibt R, Kreuzfeld S, Hunger B. *Front Public Health*. 2025;13:1616810.

BACKGROUND: Data on the risks and effects of shift systems involving night work are inconsistent. In particular, there is a lack of longitudinal studies on the impact of 12-h shift systems on indicators of sleep, cardiovascular health and work-life balance. Therefore, this study compared machine and plant operators (MPO) who worked in a rotating 12-h shift system or only during the day, both at baseline (T1) and at follow-up 4 years later (T5). **METHODS:** Data were collected annually and included a questionnaire on shift work and sleep as well as a cardiovascular screening programme. The sample for analysis consisted of 45 shift (SW) and 30 day workers (DW) (mean age T1: 40 years). Sleep behaviour was examined by sleep quality and quantity (PSQI score), cardiovascular health by blood pressure, body mass index (BMI), blood lipids, glycosylated haemoglobin (HbA1c) and PROCAM score. Work-life balance was assessed on the basis of life satisfaction and impairments. Analyses of covariance with repeated measures were used to determine longitudinal changes in the indicators between T1 and T5. **RESULTS:** At T1, SW showed significantly poorer sleep quality ($d = 0.58$) and shorter sleep duration ($M = 366$ min vs. 438 min, $d = 1.38$) compared to DW. These effects increased significantly in SW only after night shifts at T5 ($M = 5.1$ pts, $\eta^2(2) (p) = 0.13$, sleep duration: $M = 318$ min). At T1, SW differed from DW only by a significantly higher blood pressure ($d = 0.60/0.49$), BMI ($d = 0.68$) and PROCAM score in trend ($p = 0.122$). Lipids and HbA1c were comparable between the two groups. The means of the PROCAM score were in the low-moderate range, predicting a risk of heart attack $<10\%$ for 87% of the MPOs. At T5, the group differences for cardiovascular health from T1 were confirmed. SW achieved significantly higher satisfaction at T5 ($\eta^2(2) (p) = 0.22$); it corresponded to that of DW. Both groups reported significantly fewer impairments at T5 ($d = 0.68/0.58$). **CONCLUSION:** At T5, the 12-h shift system demonstrably changed sleep behaviour but not cardiovascular health. Sleep deficits could not be compensated. The 12-h shift system seems to offer advantages for work-life balance.

[Lien vers l'article](#)

Differences in total sleep time and heart rate variability between shift types in firefighters.

Luedke J, Hinman J, Clark T, Zapp A, Jones MT, Fields JB, et al. *Occup Environ Med*. 2025 Oct 1.

OBJECTIVES: The purpose of the current study was to evaluate differences in total sleep time and heart rate variability (HRV) in active-duty firefighters between on-shift and off-shift days. **METHODS:** 59 structural firefighters (age: 37.3 ± 7.3 years; height: 1.80 ± 0.08 m; weight: 88.9 ± 14.1 kg and body mass index (BMI): 27.5 ± 4.1 kg/m²) participated in this longitudinal observation study. Each morning for 15 weeks, firefighters were asked to sync a smart ring with a smartphone application to download night-time data, which were then extracted to a cloud-based software application for later analysis. The software also computed a readiness score each morning. All day types were coded as on-shift or off-shift. **RESULTS:** The average nightly sleep time for all firefighters was 6.95 ± 1.24 hours. When off-shift, firefighters recorded more sleep compared with on-shift nights (off-shift: 6.97 ± 0.50 hours vs on-shift: 6.68 ± 0.52 hours; $p < 0.0001$). HRV ($p < 0.0001$) and readiness scores ($p = 0.02$) were lower off-shift compared with on-shift. For the lagged correlation analysis, total sleep time was moderately positively correlated with the following day's readiness score. **CONCLUSIONS:** Firefighters recorded more total sleep time when off-shift compared with on-shift; however, HRV and readiness scores were higher on-shift. The lag-time correlations indicate an association between sleep time and HRV or readiness scores, with approximately half of the variability in readiness being attributable to changes in total sleep time, which highlights the complexity of the readiness and HRV signals/systems.

[Lien vers l'article](#)

The influence of workplace stressors on the risk of cardiovascular diseases among healthcare providers: a systematic review.

Alhajaji R, Alfahmi MZ, Alshaikhi SA, Fairaq AM, Fudlaldeen Jan S, Aljuaid S, et al. *Front Psychiatry*. 2025;16:1461698.

BACKGROUND: Cardiovascular diseases (CVDs) are a leading cause of death worldwide. Healthcare workers are at increased risk due to workplace stressors such as long hours, shift work, and high job demands, which may worsen both modifiable and non-modifiable CVD risk factors. This systematic review examines the impact of these workplace stressors on the risk for CVD among healthcare providers. **METHODS:** We conducted a systematic review of observational studies from inception to January 2024, following PRISMA guidelines. We searched databases including PubMed, Embase, Scopus, Web of Science, and PsycINFO using keywords related to workplace stressors and CVDs among healthcare professionals. The quality of the studies was assessed using the Newcastle-Ottawa Scale (NOS). **RESULTS:** Our review included 31 observational studies (15 cohort studies, 13 cross-sectional studies, and three case-control studies) with a total of 323,978 participants from 17 countries. The key stressors identified were long working hours, night shifts, and high job strain. Most studies reported significant associations between these stressors and increased risks of hypertension, ischemic heart disease, and cardiometabolic disorders. The quality of the studies ranged from fair to good, indicating a low risk of bias. **CONCLUSION:** Growing evidence suggests a strong correlation between workplace stressors and an increased risk of cardiovascular disease among healthcare workers. This leads to negative consequences that affect their performance and may extend to the quality of their patients' care. Addressing these stressors through targeted interventions is crucial for protecting their health and improving patient care outcomes.

[Lien vers l'article](#)

Risk factors for cardiovascular morbidity among municipal public servants.

Jorgetto GV, Livorato F, Mendes SS, Neves EFM, Candido JB. *Rev Bras Med Trab.* 2025 Apr-Jun;23(2):e20251407.

INTRODUCTION: Cardiovascular diseases are the leading cause of global mortality and significantly affect municipal public servants, particularly due to occupational stress and long working hours. **OBJECTIVES:** To assess cardiovascular risk factors diseases among public servants in a medium-sized municipality located in the eastern region of the state of São Paulo, Brazil. **METHODS:** This was a cross-sectional study conducted in partnership with the Municipal Government of São João da Boa Vista, state of São Paulo, and the Centro Universitário das Faculdades Associadas de Ensino. The sample included 191 employees from general and specialized service sectors, with data collected in August 2022. The variables analyzed included demographic (age, sex, and educational attainment) and clinical data (physical inactivity, smoking, alcohol consumption, body mass index, waist circumference, and blood pressure). Statistical analyses were performed using tests with a significance level of 5% and 95%CI. **RESULTS:** A higher prevalence of cardiovascular risk factors was observed among women, with statistically significant association for increased waist circumference ($p < 0.001$) and physical inactivity ($p = 0.034$). The main identified factors included obesity (40.8%), physical inactivity (68.0%), smoking (14.1%), and alcohol consumption (40.8%). **CONCLUSIONS:** Public servants showed multiple modifiable risk factors for cardiovascular diseases, notably obesity and physical inactivity. Recognizing these factors is crucial for designing health promotion interventions in the workplace.

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