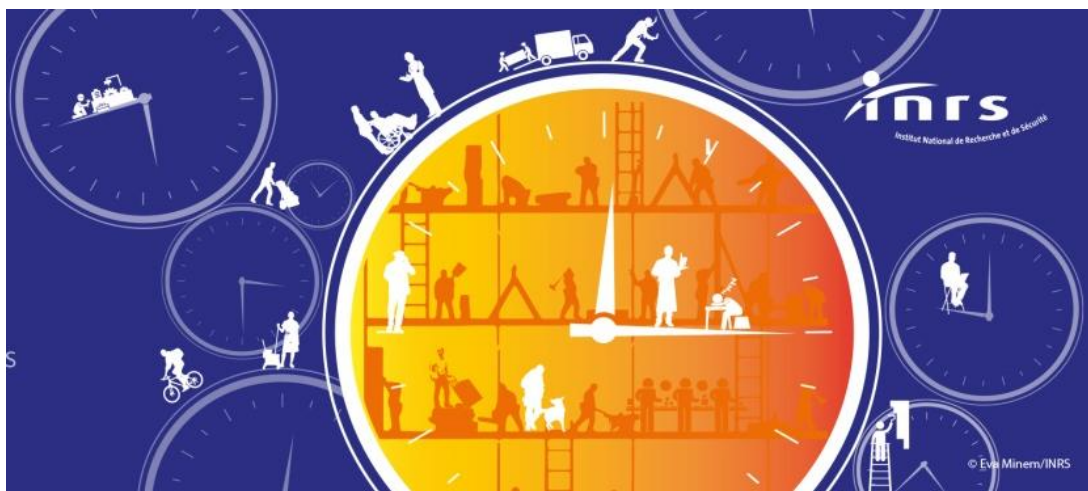


# LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Décembre 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

#### Are Working Conditions of Nurses Associated With Nutrition, Physical Activity, and Stress Levels?

Keskin E, Kalkan I. *Int Nurs Rev.* 2025 Dec;72(4):e70133.

**AIM:** This study aimed to examine the associations between working conditions and nurses' stress levels, nutritional status, and physical activity in Türkiye. **BACKGROUND:** Nurses often face challenging working conditions that may lead to both psychological and physiological issues. **METHODS:** Data were collected from 825 female nurses aged 19-60 working in private hospitals across Türkiye. Working conditions were assessed by weekly working hours and total years of service. Nutritional status was assessed using a 24-hour food recall, physical activity with the International Physical Activity Questionnaire-Short Form, and stress with the Turkish version of the Nurse Stress Scale. The study followed the STROBE checklist for cross-sectional studies. **RESULTS:** Overall, 39% of nurses had 0-5 years of total service, and 61% worked 40-45 hours/week. Nurses working 40-45 hours/week had significantly higher dietary fat and cholesterol intakes, while overall nutrient intake did not differ significantly by years of service. 49.1% were physically inactive, with those working longer hours and having more years of service tending to exhibit minimal levels of physical activity. Stress levels increased with longer working hours; however, nurses with 0-5 years of service reported significantly higher total stress scores compared to their more experienced counterparts. **DISCUSSION:** The results indicate that nurses' demanding working conditions and unhealthy lifestyle behaviors are critical issues requiring attention in organizational and policy-level discussions. **CONCLUSION:** Longer working hours are associated with higher stress, lower physical activity, and unbalanced nutrition, while greater work experience appears to mitigate stress levels. **IMPLICATIONS FOR NURSING AND HEALTH POLICY:** Policymakers and hospital administrations should implement structured programs to improve nurses' working conditions, reduce occupational stress, and promote healthy nutrition and physical activity.

[Lien vers l'article](#)

#### Trends and determinants of adverse working conditions among employed women in Australia: a 20-year analysis.

Adane HA, Iles R, Boyle JA, Sheehan LR, Collie A. *BMC Public Health.* 2025 Nov 21;25(1):4084.

**BACKGROUND:** Relatively little is known about changes in women's working conditions despite increases in labour force participation in recent decades. This study examines trends in adverse working conditions among Australian women in paid employment and identifies the factors associated with adverse working conditions. **METHODS:** Longitudinal population-based data from the Australian Longitudinal Study on Women's Health, following a cohort of women aged 18-23 years at baseline (1996) through to ages 40-45 years (2018). Mixed-effect regression examined the factors associated with long working hours and shift work. **RESULTS:** The proportion of women working long hours increased from 23.7% in 1996 to 36.1% in 2018. By 2018, women had 1.77 times higher odds of working long hours compared to 1996 (95% CI: 1.58-1.97). Factors associated with long working hours included a degree/higher degree [AOR 1.91, 95%CI, 1.76-2.07] and being non-partnered [AOR 1.45, 95%CI, 1.37-1.53]. The proportion of women engaged in shift work declined from 24.9% in 1996 to 10.1% in 2018. By 2018, the adjusted odds of working shifts were significantly lower than in 1996 [AOR: 0.20 (95% CI: 0.16-0.24)]. Factors associated with a higher likelihood of shift work included blue-collar occupation [AOR 1.41, 95%CI, 1.06-1.33], and holding a degree/higher degree [AOR 1.27, 95%CI, 1.10-1.45]. **CONCLUSION:** Between 1996 and 2018, working conditions for a cohort of Australian women of reproductive age changed significantly. There was a notable decline in shift and night work, alongside a significant increase in long working hours. The results likely reflect a combination of modified working

conditions, women's career transitions and changes in personal/caring responsibilities. The potential health implications of long working hours require careful monitoring.

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### Activités physiques

Aucun article dans ce bulletin.

### Autres pathologies

#### **Past shift work, melatonin receptor gene polymorphisms, and hyperhomocysteinemia among retired workers: The Dongfeng-Tongji cohort study.**

Mo T, Zhang W, Wang Y, Gao H, Li W, Peng R, et al. *Sleep Health*. 2025 Nov 4.

**OBJECTIVES:** This study aims to investigate the associations between past shift work and hyperhomocysteinemia and further explore the modification effects of MTNR1A rs12506228 and MTNR1B rs10830963 (2 single-nucleotide polymorphisms in melatonin receptor genes) on this association. **METHODS:** Based on the data of 14,043 retirees from the Dongfeng-Tongji cohort, multivariate logistic regression was used to analyze the association between past shift work duration and hyperhomocysteinemia, and gene-environment interaction analysis was performed. **RESULTS:** Among 14,043 retirees from the Dongfeng-Tongji cohort, we found that retirees with longer durations of past shift work were significantly associated with higher odds of hyperhomocysteinemia (odds ratio and 95% confidence interval for per 5-year increase: 1.04 [1.02-1.06],  $P < .001$ ). Furthermore, MTNR1B rs10830963 significantly exacerbated the effect of long-duration past shift work on hyperhomocysteinemia odds ( $P$ -trend  $< .001$ ,  $P$ -interaction = .01), and MTNR1A rs12506228 had a joint effect with past shift work on hyperhomocysteinemia odds ( $P$ -trend  $< .001$ ,  $P$ -interaction = .89). **CONCLUSIONS:** The long-term hazard of shift work on hyperhomocysteinemia persisted from past to post retirement, and such association could be modified by MTNR1B rs10830963.

[Lien vers l'article](#)

#### **Effects of long working hours on metabolic dysfunction-associated steatotic liver disease, with and without increased alcohol intake, in healthy workers: A 10-year cohort study.**

Lee Y, Lee W. *PLoS One*. 2025;20(11):e0336569.

Long working hours are increasingly recognized as a significant occupational hazard linked to various adverse health outcomes. This study aimed to assess how prolonged working hours relate to the subsequent development of metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic and alcohol-associated liver disease (MetALD), based on a newly proposed classification system. We analyzed data from 117,354 Korean employees who underwent at least two abdominal ultrasound examinations between 2012 and 2023. Long working hours referred to a weekly workload of at least 60 hours. The primary outcome was the incidence of steatotic liver disease, categorized as MASLD or MetALD. A total of 28,361 new cases were identified over 627,094 person-years of follow-up. Cox proportional hazards models were used to estimate adjusted hazard ratios (HRs) and 95% confidence intervals (CIs). Participants working  $\geq 60$  hours per week had a higher risk of developing MASLD (adjusted HR 1.17, 95% CI 1.03-1.32) and MASLD+MetALD (adjusted HR 1.18, 95% CI 1.05-1.33) compared with those working 35-59 hours per week. Subgroup analyses indicated that the association was especially pronounced among individuals aged  $\leq 47$  years and in men. These results suggest that

prolonged working hours contribute to an increased risk of MASLD and MASLD+MetALD, particularly in younger and male populations, emphasizing the importance of occupational health interventions.

[Lien vers l'article](#)

### **Weekly Working Hours and Serum Vitamin D3 Levels Among Korean Wage Workers: Evidence From KNHANES 2022-2023.**

Cho YH, Ahn J. *J Occup Environ Med.* 2025 Nov 13.

**OBJECTIVE:** To examine whether weekly working hours are associated with serum vitamin D levels among Korean wage workers. **METHODS:** This cross-sectional study used data from 2,988 adults in the 2022-2023 Korea National Health and Nutrition Examination Survey. Serum 25(OH)D2 and 25(OH)D3 were measured by liquid chromatography-mass spectrometry. Associations with weekly working hours were analyzed using multivariable linear regression, adjusting for age, sex, education, and occupation. **RESULTS:** Each additional weekly working hour was associated with a 0.057 ng/mL decrease in 25(OH)D3 levels, with no significant association for 25(OH)D2. The inverse association was stronger among white-collar, highly educated, and obese workers. **CONCLUSIONS:** Long working hours are significantly linked to lower serum vitamin D3 levels. These findings highlight working hours as a modifiable occupational determinant of vitamin D deficiency, particularly in indoor or white-collar settings.

[Lien vers l'article](#)

### **Cancers**

Aucun article dans ce bulletin.

### **Risque routier, accidentologie**

### **Unpredictable work schedule changes and occupational accidents: A comparative analysis of Korean and European working conditions surveys.**

Park MY, Ahn J. *J Occup Environ Med.* 2025 Nov 24.

**OBJECTIVE:** To examine whether unpredictable work schedule changes are associated with occupational accidents, comparing South Korea and the European Union. **METHODS:** This cross-sectional study used data from the 2017 Korean Working Conditions Survey and 2015 European Working Conditions Survey, focusing on blue-collar wage workers aged 18-64 years. Weighted logistic regression was applied, adjusting for confounders. **RESULTS:** In Korea, unpredictable schedule changes significantly increased accident risk (adjusted odds ratio [OR] = 2.733; 95% confidence interval [CI]: 1.859-4.018), with stronger effects among shift workers. In Europe, associations were weaker and nonsignificant (adjusted OR = 1.142; 95% CI: 0.811-1.610). A dose-response trend by notification timing was observed in Korea but not Europe. **CONCLUSIONS:** Schedule predictability is an independent occupational safety factor, underscoring the need for organizational and policy measures, particularly in vulnerable work settings.

[Lien vers l'article](#)

## RPS et QVT

**The Hidden Cost of Long Working Hours: Occupational Anxiety and Argumentativeness in Emergency Nurses.**

Özden G, Ceviz A, Aslan B, Gönültaş M. *J Emerg Nurs*. 2025 Nov 4.

**INTRODUCTION:** Emergency nurses face significant occupational challenges that affect workplace interactions. This study examined whether weekly working hours mediate the relationship between occupational anxiety and argumentativeness among emergency nurses. It was hypothesized that increased levels of both occupational anxiety and argumentativeness were associated with longer working hours. **METHODS:** A cross-sectional correlational study was conducted in a full-service public hospital located in an urban area in eastern Turkey. A total of 114 emergency nurses participated in the study. The inclusion criteria required current emergency department employment and consent; nurses on long-term leave were excluded. Occupational anxiety and argumentativeness were measured using validated scales, with weekly working hours as a potential mediator of this relationship. The analysis included correlation, regression, mediation analysis, and structural equation modeling. **RESULTS:** Nurses reported high occupational anxiety (mean = 101.83; SD = 9.74) and slightly above-average argumentativeness (mean = 31.69; SD = 4.15). Strong positive correlations were found among weekly working hours, occupational anxiety, and argumentativeness ( $r = 0.58-0.74$ ;  $P < .001$ ). Male sex ( $\beta = 3.75$ ;  $P = .033$ ) and longer working hours ( $\beta = 4.52$ ;  $P < .001$ ) were significant predictors of higher occupational anxiety. Mediation analysis confirmed that working hours partially mediated the anxiety-argumentativeness relationship, verified by structural equation modeling with good fit indices ( $\chi^2/df = 2.01$ ; comparative fit index = 0.952; root mean square error of approximation = 0.056). **DISCUSSION:** Emergency nurses experience heightened occupational anxiety directly related to argumentativeness, with weekly working hours serving as a partial mediator. The results emphasize the need for psychosocial workload management and communication training programs in demanding health care environments.

[Lien vers l'article](#)

**[Working Hours of Gynecology-Obstetrics Residents: Balancing Training and Regulations.]**

Bertholdt C, Bleurvacq S, Lang L, Dap M, Morel O. *Gynecol Obstet Fertil Senol*. 2025 Nov 25.

**OBJECTIVES:** Exceeding the legal working hours of residents, particularly in on-call specialties such as obstetrics and gynecology, raises significant issues regarding patient safety, work-life balance, and training. Despite European regulations limiting weekly working hours to 48, available data indicate a systematic overrun, particularly on weekends, without adequate compensatory time off. This study aimed to compare the weekly working hours of residents between a period before the implementation of compensatory days off and a subsequent period. Secondary objectives included assessing the feasibility, impact on annual leave, theoretical training days, and clinical activity related to the compensatory rest. **MATERIALS AND METHODS:** A retrospective observational before-and-after study was conducted at a French university center over two one-year periods (November 2022 to October 2024). A regulatory measure was established starting in November 2023, involving the allocation of compensatory days off after weekend on-call shifts (1 day for Friday and Sunday, 2 days for Saturday). The theoretical weekly working hours were calculated according to a standardized formula that incorporated on-call duties and compensatory rest. Data on the number of on-call responsibilities, internship posts, leaves, and training were collected for each intern from weekly schedules. **RESULTS:** The study included 46 residents over two years (20 in the pre-implementation period, 26 in the post-implementation period). The weekly working hours significantly decreased after the introduction of compensatory days off (52.1 hours vs. 47.7 hours,  $p < 0.001$ ). The number of individual training days decreased during the post-implementation period, but there was no significant impact on the number of clinical internship days in key sectors. **CONCLUSION:** The implementation of compensatory days off

after weekend on-call duties is a feasible and effective measure to reduce the weekly working hours of residents. It allows for compliance with regulatory requirements while maintaining clinical activity or continuity of care.

[Lien vers l'article](#)

### Santé psychique

#### **The Hidden Cost of Long Working Hours: Occupational Anxiety and Argumentativeness in Emergency Nurses.**

Özden G, Ceviz A, Aslan B, Gönültaş M. *J Emerg Nurs.* 2025 Nov 4.

**INTRODUCTION:** Emergency nurses face significant occupational challenges that affect workplace interactions. This study examined whether weekly working hours mediate the relationship between occupational anxiety and argumentativeness among emergency nurses. It was hypothesized that increased levels of both occupational anxiety and argumentativeness were associated with longer working hours. **METHODS:** A cross-sectional correlational study was conducted in a full-service public hospital located in an urban area in eastern Turkey. A total of 114 emergency nurses participated in the study. The inclusion criteria required current emergency department employment and consent; nurses on long-term leave were excluded. Occupational anxiety and argumentativeness were measured using validated scales, with weekly working hours as a potential mediator of this relationship. The analysis included correlation, regression, mediation analysis, and structural equation modeling. **RESULTS:** Nurses reported high occupational anxiety (mean = 101.83; SD = 9.74) and slightly above-average argumentativeness (mean = 31.69; SD = 4.15). Strong positive correlations were found among weekly working hours, occupational anxiety, and argumentativeness ( $r = 0.58-0.74$ ;  $P < .001$ ). Male sex ( $\beta = 3.75$ ;  $P = .033$ ) and longer working hours ( $\beta = 4.52$ ;  $P < .001$ ) were significant predictors of higher occupational anxiety. Mediation analysis confirmed that working hours partially mediated the anxiety-argumentativeness relationship, verified by structural equation modeling with good fit indices ( $\chi^2/df = 2.01$ ; comparative fit index = 0.952; root mean square error of approximation = 0.056). **DISCUSSION:** Emergency nurses experience heightened occupational anxiety directly related to argumentativeness, with weekly working hours serving as a partial mediator. The results emphasize the need for psychosocial workload management and communication training programs in demanding health care environments.

[Lien vers l'article](#)

#### **Longitudinal trends in burnout among healthcare professionals during the COVID-19 pandemic: a 4-year prospective cohort study in a tertiary medical centre in Taiwan.**

Lee SY, Hsu WT, Ho WC, Lin YL, Lin CF, Wang CL, et al. *BMJ Open.* 2025 Nov 27;15(11):e095648.

**OBJECTIVES:** This study aimed to investigate the evolution of burnout levels and cardiovascular risk among healthcare professionals during the COVID-19 pandemic, identifying associated risk factors, with a particular focus on the impact of working hours, job roles and working units. **DESIGN:** A longitudinal, observational study was conducted. **SETTING:** The study was carried out in a medical centre in central Taiwan, encompassing various healthcare settings. **PARTICIPANTS:** A total of 1502 healthcare workers participated, including nurses, medical technicians, resident doctors, attending physicians and administrative staff. Participants were selected based on consistent completion of a 4-year questionnaire, with exclusion criteria for those who did not complete. **PRIMARY AND SECONDARY OUTCOME MEASURES:** The primary outcome measured was burnout levels using the Chinese version of the Copenhagen Burnout Inventory. The secondary outcome was cardiovascular risk calculated from employees' health check-up data using the Framingham Risk Score. **RESULTS:** Cardiovascular risk

showed an upward trend over 4 years. Personal and work-related burnout significantly decreased from 2019 to 2020 but increased from 2020 to 2022, aligning with changes in weekly working hours. Nurses exhibited the most pronounced fluctuations, likely due to their younger average age, shorter professional tenure and frequent direct patient contact, which may heighten vulnerability to pandemic-related stressors. In contrast, attending physicians demonstrated age as a protective factor against burnout, as greater seniority, clinical experience and professional maturity may buffer stress and foster resilience. Participants who worked in COVID-related units generally had elevated burnout levels and working hours. During the initial outbreak in 2020, employees working in COVID-related units had reduced working hours but stable burnout levels, while employees in non-COVID-related units experienced decreased burnout. **CONCLUSIONS:** This study highlights the critical impact of long working hours on burnout among healthcare professionals during the COVID-19 pandemic. Nurses emerged as a vulnerable group, sensitive to pandemic-induced changes, while attending physicians exhibited more resilience. COVID-related units face greater stress and are less likely to benefit from reductions in patient numbers and working hours during the pandemic. Our findings underscore the urgent need for tailored interventions, such as regulated work hours, flexible scheduling and enhanced organisational and peer support, to protect healthcare workers' well-being. These strategies can strengthen workforce resilience and sustainability in future public health crises.

[Lien vers l'article](#)

### Troubles cognitifs et de la vigilance

#### Effect of sleep quality on alarm fatigue among emergency nurses.

Şener A, Çınarlı T, Köse D. *Int Emerg Nurs*. 2025 Dec;83:101706.

**BACKGROUND:** Considering that patient care is provided for 24 h without interruption in the emergency service, the work roles in this service require a state of full wakefulness. Alarm fatigue is defined as the main cause of clinical alarm management problems. Alarm fatigue, that cannot be managed in a full sense, may make desensitize emergency nurses and may endanger patient safety. **AIM:** The aim of the study was to determine the effect of sleep quality on alarm fatigue of emergency nurses. **METHODS:** This research used the descriptive, cross-sectional and correlational study pattern. The study was completed with 183 emergency nurses from May-November 2023. Data were collected using the Descriptive Information Form, Pittsburgh Sleep Quality Index (PSQI) and the Nurses' Alarm Fatigue Scale. Data were analyzed using IBM SPSS V26 program. **RESULTS:** Of nurses, 96.2 % worked shifts and 38.8 % stated their monthly working hours were more than 240 h. Of those working shifts, 77.6 % slept after their shift, 56.8 % experienced sleep problems and 43.3 % stated they required support to be able to easily fall asleep. The mean scores on the Nurses' Alarm Fatigue Scale were  $24.98 \pm 6.16$ , while mean scores for the PSQI were  $9.08 \pm 3.48$ . There was a statistically significant, low level positive correlation between PSQI scores and Alarm Fatigue Scale scores ( $r = 0.178$ ). Additionally, the simple linear regression model created with the aim of investigating the effect of PSQI scores on Alarm Fatigue Scale scores was identified to be statistically significant ( $F = 5.897$ ;  $p = 0.016$ ). **CONCLUSION:** With the aim of empowering nurses working irregular night shifts in institutions providing health services, offering education and teaching programs should be considered. In conclusion, our research will help to create a safer, more effective and encouraging hospital environment for both patients and emergency service nurses.

[Lien vers l'article](#)

**Association between daily long working hours and actigraphic sleep, vigilance, blood pressure and psychological responses: a 10-day observational study among Japanese daytime workers.**

Ikeda H, Kubo T, Matsumoto S, Izawa S, Nishimura Y, Liu X. *Occup Environ Med.* 2025 Dec 3;82(10):476-84.

**OBJECTIVES:** This study examined the association between daily long working hours (LWHs) and diverse health-related outcomes, using objective and subjective measures. It further evaluated the specific durations of daily LWHs that may be considered inappropriate in cases with adverse health effects. **METHODS:** 98 employees participated in a 10-day observational study. Participants self-reported their daily working hours, subjective states and performed the measurement of blood pressure (BP) and psychomotor vigilance test (PVT) immediately on waking and before bedtime. Objective sleep was recorded nightly using actigraphy. Linear mixed model (LMM) analysis was performed. **RESULTS:** LWHs were significantly associated with higher systolic BP ( $\beta=0.65$ ), greater fatigue ( $\beta=1.79$ ) before bedtime, shorter total sleep time (TST;  $\beta=-0.09$ ) and higher systolic BP ( $\beta=0.76$ ) on waking (all  $p<0.05$ ). Reduced TST was significantly linked to slower PVT reciprocal response time ( $\beta=0.03$ ), higher lapse ( $\beta=-1.10$ ) and greater sleepiness ( $\beta=-0.20$ ) after waking (all  $p<0.05$ ). Categorical LMM analysis revealed that working  $>12$  hours was significantly associated with increased fatigue before bedtime, whereas working  $>13$  hours significantly reduced TST compared to working  $\leq 9$  hours. Sleeping  $<6$  hours caused significantly poorer PVT outcomes, and sleeping  $<5$  hours caused significantly stronger sleepiness after waking than sleeping  $\geq 7$  hours. **CONCLUSIONS:** Daily LWHs and consequent reductions in sleep duration were associated with adverse outcomes. These findings underscore the importance of daily management of work hours and adequate sleep duration to prevent excessive workload and promote recovery from occupational demands.

[Lien vers l'article](#)

## Travail posté et de nuit

### Généralités et prévention

#### [Occupational health : role and limitations of the primary care physician].

Bourquin L, Simões Morgado L, Jara T, Herren D, Regamey F. *Rev Med Suisse*. 2025 Nov 5;21(938):1976-84.

Occupational health represents an increasingly important concern in primary care practice. General practitioners (GPs) are frequently involved in situations where clinical responsibilities, administrative requirements, and medicolegal considerations overlap. Through an analysis of four common clinical situations (suffering at work, work incapacity, certificate of good health, and fitness for night work), this article highlights the central role and limitations of the GPs. It illustrates the practical challenges of managing such requests, emphasizing the importance of a rigorous assessment, interdisciplinary collaboration, and proper clinical positioning.

[Lien vers l'article](#)

#### **The prevalence and risk factors of shift work disorder among nurses: A systematic review and meta-analysis.**

Zhao X, Zhang L, Zhang X, Guo J, Guan R, Cheng Y, et al. *Int J Nurs Stud*. 2025 Oct 30;174:105273.

**BACKGROUND:** Shift work disorder is common among nurses, marked by circadian rhythm disruption, excessive sleepiness, and cognitive impairment. It increases the risk of cardiovascular and metabolic diseases and contributes to clinical errors from fatigue, endangering patient safety. Its prevalence is notably higher in nurses than in other shift-working populations. **OBJECTIVES:** This systematic review and meta-analysis aimed to determine the prevalence of and risk factors for shift work disorder among nurses. The ultimate aim was to provide evidence-based guidance for optimizing scheduling system and developing health intervention strategies. **METHODS:** Nine databases were comprehensively searched up to February 20, 2025, in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A random-effects model was used for the meta-analysis, which was performed using Stata software. The quality of the studies was evaluated using the Joanna Briggs Institute (JBI) tool, and heterogeneity was assessed using the I(2) test. Publication bias was examined using funnel plots and the Egger test. **RESULTS:** A total of 24 observational studies involving 15,479 nurses were included for analysis. The pooled prevalence of shift work disorder among nurses was 45.5 % (95 % CI: 39.2-51.8 %). Subgroup analysis revealed that Africa (51.0 %) and Asia (46.5 %) had the highest prevalence rates, with a 61.7 % prevalence among nurses working in a "three-shift" model. Risk factors for shift work disorder included high stress (OR = 1.019, 95 % CI: 1.003-1.036), the number of night shifts in the past year (OR = 1.010, 95 % CI: 1.010-1.020), increasing age (OR = 1.025, 95 % CI: 1.002-1.047), the number of quick shifts (OR = 2.593, 95 % CI: 1.979-3.397), anxiety (OR = 1.073, 95 % CI: 1.039-1.108), depression (OR = 1.178, 95 % CI: 1.135-1.223) and fatigue (OR = 1.145, 95 % CI: 1.096-1.197). Heterogeneity analysis of the assessment tools revealed that scales and questionnaires (54.2 %) yielded higher prevalence rates than did the International Classification of Sleep Disorders -3 (40.2 %) and International Classification of Sleep Disorders -2 (32.9 %) criteria. **CONCLUSIONS:** The prevalence of shift work disorder in the nurse population is high although there is substantial heterogeneity across studies. The risk of shift work disorder should be reduced by decreasing the frequency of rapid shifts and night shifts, optimizing scheduling stability, enhancing mental health support, and using standardized assessment tools. The findings provide key evidence for healthcare organizations to develop evidence-based intervention strategies. **REGISTRATION:** This review was registered with PROSPERO (CRD 42023494210).

[Lien vers l'article](#)

**Prevalence of Overnight Work (1 a.m. to 5 a.m.) Among United States Workers.**

Wong IS, Alterman T, Hittle BM, Velazquez-Kronen R, Chen IC. *Am J Ind Med.* 2025 Dec;68(12):1088-104.

**BACKGROUND:** Many factors have resulted in the normalization of nonstandard work schedules in recent decades, including globalization requiring working across time zones and growing demands for goods and services. This paper provides national estimates of overnight work in the USA. **METHODS:** We used cross-sectional data from the 2015 National Health Interview Survey (n = 19,386 US employed adults ≥ 18 years). This survey contained a unique definition of overnight work (i.e., between 1:00 a.m. and 5:00 a.m.), based on the window of circadian low. Weighted prevalence rates were provided across categories of sociodemographic characteristics, health status, health behaviors, and occupational factors. **RESULTS:** We estimated more than 21 million US employed adults experienced overnight work (14.2%). Higher prevalence was found among men (17.8%), non-Hispanic Black adults (17.2%), non-US born adults (11.2%), those with some college (15.9%) or a high school (16.7%) education, or living in the Midwest region (15.8%). Compared to those sleeping 7-9 h (10.5%), higher percentages of adults working overnight slept < 7 h (21.4%) and > 9 h (17.0%). Increasing prevalence was observed with increasing weekly work hours (p < 0.0001). Higher prevalence was reported among multiple job holders (19.5%). Industries and occupations with the greatest percentage of overnight workers were Transportation, Warehousing and Utilities (29.3%), and Protective Services (47.4%). **CONCLUSION:** Our estimates of overnight work in 2015 are almost five times higher than estimates from 2004. Given that overnight work has been associated with adverse safety and health outcomes, additional policies and programs are needed to protect this growing population of workers.

[Lien vers l'article](#)

**Trends and determinants of adverse working conditions among employed women in Australia: a 20-year analysis.**

Adane HA, Iles R, Boyle JA, Sheehan LR, Collie A. *BMC Public Health.* 2025 Nov 21;25(1):4084.

**BACKGROUND:** Relatively little is known about changes in women's working conditions despite increases in labour force participation in recent decades. This study examines trends in adverse working conditions among Australian women in paid employment and identifies the factors associated with adverse working conditions. **METHODS:** Longitudinal population-based data from the Australian Longitudinal Study on Women's Health, following a cohort of women aged 18-23 years at baseline (1996) through to ages 40-45 years (2018). Mixed-effect regression examined the factors associated with long working hours and shift work. **RESULTS:** The proportion of women working long hours increased from 23.7% in 1996 to 36.1% in 2018. By 2018, women had 1.77 times higher odds of working long hours compared to 1996 (95% CI: 1.58-1.97). Factors associated with long working hours included a degree/higher degree [AOR 1.91, 95%CI, 1.76-2.07] and being non-partnered [AOR 1.45, 95%CI, 1.37-1.53]. The proportion of women engaged in shift work declined from 24.9% in 1996 to 10.1% in 2018. By 2018, the adjusted odds of working shifts were significantly lower than in 1996 [AOR: 0.20 (95% CI: 0.16-0.24)]. Factors associated with a higher likelihood of shift work included blue-collar occupation [AOR 1.41, 95%CI, 1.06-1.33], and holding a degree/higher degree [AOR 1.27, 95%CI, 1.10-1.45]. **CONCLUSION:** Between 1996 and 2018, working conditions for a cohort of Australian women of reproductive age changed significantly. There was a notable decline in shift and night work, alongside a significant increase in long working hours. The results likely reflect a combination of modified working conditions, women's career transitions and changes in personal/caring responsibilities. The potential health implications of long working hours require careful monitoring.

[Lien vers l'article](#)

**Association between night shift work and mental and physical health among Chinese nurses: A cross-sectional study.**

Chen Y, Su Q, Yang Y, Zhang D, Li Q, Zhang J. *Chronobiol Int.* 2025 Nov 7:1-10.

The prevalence of night shifts is extensive in hospital settings, particularly among nursing staff. The increasing importance of night shift work in meeting the demands of modern social care services underscores the urgent need for research into the impact of these schedules on nurses' health. This study aimed to examine the relationship between night shifts and the physical and mental well-being of nurses. Data were collected through questionnaires to obtain general demographic information and responses to the Chinese Psychosomatic Health Scale (CPSHS). The data were initially entered into Excel 2018 for verification of accuracy before being analyzed using IBM SPSS 26.0 software. The findings indicated that nurses engaged in night shift work exhibited a higher susceptibility to symptoms associated with the digestive system, reproductive endocrine system, depression, and anxiety compared to their day shift counterparts. Furthermore, a significant correlation was observed between the frequency of night shifts and increased symptom scores for digestive issues and depression. Specifically, nurses who engaged in night shifts exceeding eight instances per month demonstrated significantly higher scores in comparison to those working night shifts between five to eight times per month or fewer than four times per month. A prominent finding from the data analysis revealed that nurses undertaking night shifts more than eight times monthly exhibited a markedly higher incidence of somatic symptom disorder. The study implies that the engagement in night shift work is correlated with the physical and mental health of nurses, with the frequency of night shifts exceeding eight times per month identified as a risk factor for physical disorders among this population.

[Lien vers l'article](#)

**Challenges of after-hours pediatric imaging.**

Aquino MR, Shah J, Kaplan SL. *Pediatr Radiol.* 2025 Nov 28.

The after-hours period presents unique challenges for pediatric radiologists. These stem from the higher percentage of high acuity/emergent studies, limited staffing, and the adverse effects of non-traditional hours on radiologists' health and performance. This article describes the current landscape of after-hours pediatric radiology coverage, workflow, and staffing challenges, and reviews the impact that disruptions in circadian rhythm can have on health and performance.

[Lien vers l'article](#)

**The association between shift scheduling and burnout, insomnia, and wellbeing in critical care nurses.**

Geraghty RR, Crossfield C, Brooks L, Wynter K. *Aust Crit Care.* 2025 Nov;38(6):101415.

**BACKGROUND:** Critical care nurses provide patient care 24 h a day, through shift work, which can have negative effects on nurses' health and wellbeing and patient outcomes. The high-stress nature of critical care areas requires nurses to have adequate rest between shifts to ensure safe, high-quality care. Quick returns (QRs), such as returning to the next shift in less than 11 h, may not provide sufficient rest time; however, it is not yet known whether this impacts critical care nurses' health and wellbeing. **OBJECTIVES:** The objective of this study was to determine the association between shift scheduling and burnout, insomnia, and wellbeing in Australian critical care nurses. **METHODS:** A descriptive and associational study was conducted. Australian critical care nurses were invited to participate in an online survey. The survey included sociodemographic and work characteristics including shift scheduling, the Burnout Assessment Tool (BAT), and the Bergen Insomnia Scale (BIS). Mann-Whitney U-tests and t-tests were used to investigate associations between QRs and burnout, insomnia, and

wellbeing. Additionally, an open-ended survey question allowed nurses to share their perceptions of QRs. RESULTS: Surveys were completed by 532 critical care nurses. BAT dimension and total scores and BIS scores were significantly higher among nurses who reported QRs than in those who did not: Exhaustion mean: 3.53 vs 3.35,  $p = 0.003$ ; Mental Distance: 2.91 vs 2.75,  $p = 0.016$ ; Cognitive Impairment: 2.49 vs 2.34,  $p = 0.001$ ; Emotional Impairment: 2.35 vs 2.19,  $p = 0.007$ ; Secondary Symptoms: 3.04 vs 2.91,  $p = 0.039$ ; total BAT score: 2.9 vs 2.8,  $p = 0.004$  and BIS Insomnia symptoms: 25.51 vs 23.50,  $p = 0.035$ . Open-ended responses revealed concerns about personal health, fatigue, and risk to patient safety. CONCLUSION: Critical care nurses are exposed to significant occupational stressors that may impair their health and wellbeing. The removal or reduction of QRs from rostering schedules may have substantial benefits for nurses and the safety and quality of patient care.

[Lien vers l'article](#)

### The night shift.

Body R. *Emerg Med J.* 2025 Nov 21;42(12):843.

[Lien vers l'article](#)

### Activités physiques

Aucun article dans ce bulletin.

### Autres pathologies

#### A Critical Review of Occupational Asthma in the 21st Century Work Environment.

Galván CA, Durán R, Quirce S. *J Investig Allergol Clin Immunol.* 2025 Nov 5:0.

BACKGROUND AND OBJECTIVES: Occupational asthma (OA) is an increasingly relevant respiratory disease in modern workplaces. Epidemiological evidence highlights its considerable prevalence among the global working population, with recent increases following an initial decline in the early 21st century. To critically review the pathophysiological mechanisms, risk factors, clinical presentations, and emerging challenges associated with OA, focusing on novel exposures, biomarker development, and translation of scientific findings into preventive and clinical practice. METHODS: A literature review was conducted through a bibliographic search in PubMed (MEDLINE) and Web of Science. Articles were selected and analyzed using the Rayyan collaborative platform. Empirical studies on prevalence, risk factors, diagnosis, and management of OA were included. RESULTS: OA is primarily categorized as sensitizer- or irritant-induced, each exhibiting unique molecular pathways and clinical courses. Transcriptomic research has identified specific microRNA profiles as innovative biomarkers with significant diagnostic capacity. Studies document risks in traditionally non-high-risk sectors, such as offices and educational environments. Factors such as work chronobiology (night shifts), sex, and socioeconomic status influence the development and prognosis of OA, potentially leading to loss of productivity and employment. CONCLUSION: OA is a significant challenge in occupational health, with complex epidemiological patterns. While advances in molecular characterization and identification of emerging risk factors have improved our understanding of the condition, diagnostic and management challenges persist. Future research should focus on developing specific biomarkers and accessible diagnostic tools for primary care, along with evidence-based preventive strategies for emerging labor sectors.

[Lien vers l'article](#)

**Increased risk of asthma in female night shift workers.**

Maidstone RJ, Ray DW, Liu J, Bowden J, Rutter MK, Durrington HJ. *ERJ Open Res.* 2025 Nov;11(6).

**RATIONALE:** Asthma is more common in females and more common in night shift workers. Since increasing numbers of females are becoming shift workers, it is important to determine if the risk of shift work-associated asthma is higher in females. The objective of the present study was to determine if increasing frequency of shift work is more strongly related to prevalent asthma in females than in males. **METHOD:** We used cross-sectional data from >280 000 UK Biobank participants and logistic regression models adjusted for demographic and lifestyle factors to describe sex differences in prevalent asthma phenotypes related to shift work frequency. To obtain mechanistic insights, we explored associations with chronotype, sex hormones and menopause. **RESULTS:** Female permanent night shift workers had higher covariate-adjusted odds of moderate-severe asthma (odds ratio (OR) 1.50, 95% confidence interval (CI) 1.18-1.91) than female dayworkers, but there was no corresponding relationship among males (OR 0.95, 95% CI 0.72-1.26; sex interaction p-value=0.01). Similar relationships were observed for "all asthma" and for "wheeze or whistling in the chest". Female shift work-related asthma was driven by relationships in postmenopausal women not using hormone replacement therapy (HRT) (adjusted OR 1.89 (95% CI 1.24-2.87) for moderate-severe asthma; sex interaction p-value=0.02 in permanent night shift workers, compared with dayworkers), but these relationships attenuated to the null in postmenopausal women using HRT. **CONCLUSION:** Our finding that increasing shift work frequency is more strongly related to asthma in females than in males could have public health implications. Intervention studies should determine if modifying shift work schedules or using HRT can reduce asthma risk in females.

[Lien vers l'article](#)

**Association Between Shift Work and Auditory-Cognitive Processing in Middle-Aged Healthcare Workers.**

Roque M, Marques T, Serrano M. *Audiol Res.* 2025 Oct 25;15(6).

**BACKGROUND/OBJECTIVES:** Shift work in healthcare professionals affects performance in high cognitive processing, especially in complex environments. However, the beneficial effects that working in complex environments may have on auditory-cognitive processing remain unknown. These professionals face increased challenges in decision-making due to factors such as noise exposure and sleep disturbances, which may lead to the development of enhanced auditory-cognitive resources. This study aims to investigate the associations between shift work and auditory-cognitive processing in middle-aged healthcare workers. **METHODS:** Thirty middle-aged healthcare workers were equally allocated to a shift worker (SW) or a fixed-schedule worker (FSW) group. Performance on a cognitive test, and in pure-tone audiometry, speech in quiet and noise, and listening effort were used to explore whether correlations were specific to shift work. **RESULTS:** Exploratory analyses indicated that shift workers tended to perform better in visuospatial/executive function, memory recall, memory index, orientation, and total MoCA score domains compared to fixed-schedule workers. In the SW group, hearing thresholds correlated with memory recall and memory index. In the FSW group, hearing thresholds correlated with orientation, memory index, and total MoCA score, while listening effort correlated with naming, and speech intelligibility in quiet correlated with total MoCA scores. **CONCLUSIONS:** These exploratory findings suggest that shift work may be linked to distinct auditory-cognitive patterns, with potential compensatory mechanisms in visuospatial/executive functions and memory among middle-aged healthcare workers. Larger, longitudinal studies are warranted to confirm whether these patterns reflect true adaptive mechanisms.

[Lien vers l'article](#)

**A Randomized Controlled Crossover Lifestyle Intervention to Improve Metabolic and Mental Health in Female Healthcare Night-Shift Workers.**

Robinson LA, Lennon S, Pegel AR, Strickland KP, Feeley CA, Watts SO, et al. *Nutrients*. 2025 Oct 24;17(21).

Background: Circadian rhythm disruption caused by shift work alters metabolic and hormonal pathways, which accelerates chronic disease onset, leading to decreased quality and quantity of life. This study aimed to determine whether a practical lifestyle intervention emphasizing nutrition timing and recovery habits could mitigate the metabolic and psychological effects of night-shift work. We conducted a randomized, open-label, crossover trial with two 8-week periods. Methods: Female healthcare workers (n = 13) aged 18-50 years with a body mass index (BMI) between 27 and 40 kg/m<sup>2</sup> and working predominantly night shifts (≥30 h/week for ≥6 months) were randomized. During the 8-week intervention phase, participants received daily text messages with guidance on food, sleep/rest, and physical activity and were provided with whey protein isolate powder and grain-based snack bars to consume during work shifts. The program targeted improved nutrient timing, adequate protein intake, and structured rest without formal exercise training, allowing evaluation of dietary and behavioral effects feasible for this population. Total caloric (~30 kcal/kg lean mass) and protein (2 g/kg lean mass) needs were measured, along with sleep/rest goals of 6-8 h/24 h. Primary outcome measures were change in visceral fat percentage (VF%) by DXA and mental/physical quality of life (RAND SF-12). Secondary outcomes included fasting triglycerides, ALT, blood glucose, LDL, actigraphy, and fecal microbiome. Mixed-design two-way ANOVA was conducted to assess the effects of group (immediate [IG] and delayed [DG]), time (baseline, 8-week crossover, and week 16), and Group × Time (GxT) interactions, and Bonferroni correction was applied to post hoc t-tests. Results: Eleven participants completed the study. Both groups increased dietary protein intake (p < 0.001), and a GxT interaction for VF% (p = 0.039) indicated DG reduced VF% to a greater extent (-0.335 ± 0.114% (p = 0.003) vs. 0.279 ± 0.543% (p = 0.158)). Mental and physical QOL, objectively measured physical activity and sleep, serum lipids and inflammatory markers, and fecal microbiota remained unchanged (p > 0.05 for all GxT). Conclusions: The findings suggest that targeted nutrition and recovery strategies can modestly improve dietary intake and visceral fat; however, consistent with prior work, interventions without structured exercise may be insufficient to reverse broader metabolic effects of circadian disruption. This trial was registered at ClinicalTrials.gov, identifier: NCT06158204, first registered: 28 November 2023.

[Lien vers l'article](#)

**Temporal Patterns of Eating and Diet Composition of Night Shift Workers Are Influenced More by Shift Type than by Chronotype.**

Phoi YY, Dorrian J, Rogers M, Leung GKW, Davis R, Clark AB, et al. *Nutrients*. 2025 Nov 14;17(22).

Background/Objectives: Shift work and chronotype influence timing and type of food consumed, yet their combined influence is unclear. This study determined differences between temporal patterns of eating (times of first (FEO), last (LEO), and largest eating occasions (LarEO), duration of eating window (DEW), eating frequency) and nutrient intake of night shift workers on and off shift and the additional influence of chronotype. Methods: Participants (46.6 ± 10.2 years, BMI: 33.9 ± 5.6 kg/m<sup>2</sup>, male/female: 57/72) completed work/sleep/food diaries, and the Composite Scale of Morningness. Dietary profiles were characterized by day type as follows: morning shift (MS), 1st night shift (1stNS), subsequent night shifts (SNS), 1st day off after night shifts (1stDONS), or other days off (DO). Results: Across day types, there were significant differences in FEO (p < 0.001), LEO (p < 0.001), LarEO (p = 0.025), DEW (p < 0.001), eating frequency (p = 0.003), total energy (p = 0.022), and fibre intake (p < 0.001). Compared to MS, all night shifts had later FEO, LEO, and LarEO; 1stNS had longer DEW and higher fibre but no differences in frequency, energy, and macronutrient intake. Greater morningness

was associated with earlier FEO, LEO, LarEO, and lower %energy from fat and saturated fat. Effect of chronotype on temporal eating patterns was not different across day types; there was a significant, positive relationship between morningness and %energy from carbohydrate (%Energy(CHO)) on MS ( $p = 0.004$ ) and 1stDONS ( $p = 0.040$ ). Conclusions: Dietary habits of night shift workers vary by shift schedule and degree of morningness. Further studies will confirm if shift schedule is more influential than chronotype on shift workers' dietary habits.

[Lien vers l'article](#)

### **High prevalence of disorders of irritable bowel syndrome and functional dyspepsia in night shift workers: a cross-sectional study in Australia and the UK.**

Pennaneach C, Bonham MP, Kelly T, Gibson R, Biesiekierski JR. *Clin Gastroenterol Hepatol*. 2025 Nov 25.

**BACKGROUND AND AIMS:** Night shift work disrupts circadian rhythms and may contribute to gastrointestinal (GI) symptoms. The aims were to assess the prevalence of irritable bowel syndrome (IBS) and functional dyspepsia (FD) in night shift workers, evaluate their impact on quality of life, and examine associated dietary patterns and intake. **METHODS:** We conducted a cross-sectional study of night shift workers ( $\geq 8$  shifts/month between 11pm-3am) in Australia and the UK from March-July 2024. Participants completed validated questionnaires including Rome IV criteria for IBS and FD, IBS Severity Score System (IBS-SSS), Leuven Postprandial Distress Scale (LPDS), IBS Quality of Life (IBS-QoL), Visceral Sensitivity Index (VSI), Depression Anxiety Stress Scale-21 (DASS-21), and Comprehensive Nutrition Assessment Questionnaire (CNAQ). **RESULTS:** Among 392 participants (69.9% female, median age 48 years), 21.3% met Rome IV criteria for IBS, 30.4% for FD, and 24.5% for both conditions. Significantly more females met criteria for both disorders ( $p < 0.05$ ). Participants with IBS and/or FD reported significantly higher IBS-SSS, LPDS, VSI, and DASS-21 scores compared to those without (all  $p < 0.001$ ). Most participants (59.9%) reported night shifts negatively affected their GI symptoms, and 16.3% considered changing jobs due to symptoms. Medication use was higher in those with IBS/FD (41% vs 17%,  $p < 0.01$ ). No significant differences in dietary patterns were observed between groups. **CONCLUSION:** Night shift workers have a substantially higher prevalence of IBS and FD compared to reported general population rates, with significant impacts on IBS-specific quality of life and mental health. These findings highlight the need for targeted interventions to support gastrointestinal and mental health in this vulnerable working population.

[Lien vers l'article](#)

### **Past shift work, melatonin receptor gene polymorphisms, and hyperhomocysteinemia among retired workers: The Dongfeng-Tongji cohort study.**

Mo T, Zhang W, Wang Y, Gao H, Li W, Peng R, et al. *Sleep Health*. 2025 Nov 4.

**OBJECTIVES:** This study aims to investigate the associations between past shift work and hyperhomocysteinemia and further explore the modification effects of MTNR1A rs12506228 and MTNR1B rs10830963 (2 single-nucleotide polymorphisms in melatonin receptor genes) on this association. **METHODS:** Based on the data of 14,043 retirees from the Dongfeng-Tongji cohort, multivariate logistic regression was used to analyze the association between past shift work duration and hyperhomocysteinemia, and gene-environment interaction analysis was performed. **RESULTS:** Among 14,043 retirees from the Dongfeng-Tongji cohort, we found that retirees with longer durations of past shift work were significantly associated with higher odds of hyperhomocysteinemia (odds ratio and 95% confidence interval for per 5-year increase: 1.04 [1.02-1.06],  $P < .001$ ). Furthermore, MTNR1B rs10830963 significantly exacerbated the effect of long-duration past shift work on hyperhomocysteinemia odds ( $P$ -trend $<.001$ ,  $P$ -interaction=.01), and MTNR1A rs12506228 had a joint effect with past shift work on hyperhomocysteinemia odds ( $P$ -trend $<.001$ ,  $P$ -interaction=.89).

CONCLUSIONS: The long-term hazard of shift work on hyperhomocysteinemia persisted from past to post retirement, and such association could be modified by MTNR1B rs10830963.

[Lien vers l'article](#)

**Comment on "Associations of Long-Term Night Shift Work With Incident Irritable Bowel Syndrome: A Population-Based Cohort Study".**

Yao YH, Li SN, Yin Q, Liu L. *J Gastroenterol Hepatol*. 2025 Dec;40(12):3065-6.

[Lien vers l'article](#)

**Comment on "Associations of Long-Term Night Shift Work With Incident Irritable Bowel Syndrome: A Population-Based Cohort Study".**

Du Y, Fan H. *J Gastroenterol Hepatol*. 2025 Dec;40(12):3041-2.

[Lien vers l'article](#)

**Night shift work increases the risk of developing irritable bowel syndrome: a prospective cohort study in the UK Biobank.**

Lu S, Li L, Zhuang Y, Ye F, Zhang X, Chen J, et al. *Front Public Health*. 2025;13:1651752.

BACKGROUND: Irritable bowel syndrome (IBS) is a functional gastrointestinal disorder associated with a substantial disease burden. Night shift work has become increasingly common and is related to various human diseases. This study investigates the relationship between night shift work and the risk of incident IBS. METHODS: 266,605 participants from the UK Biobank were included in our analysis. Data on shift work patterns, IBS incidence, and relevant covariates were obtained from the UK Biobank. Cox proportional hazard regression models were employed to assess the association between night shift work and IBS risk. Sensitivity analysis and subgroup analysis stratified by specific covariates were conducted to evaluate the robustness of the findings. RESULTS: During a median follow-up of 9.03 years, 5,218 new incident IBS cases were identified. Compared to individuals who never/rarely engaged in night shift work, those who always worked the night shift were associated with an elevated risk of IBS across all models. Specifically, the hazard ratio and 95% confidence interval were 1.41 (1.23-1.60) for Model 1, 1.53 (1.35-1.76) for Model 2, and 1.36 (1.19-1.56) for the fully adjusted Model 3. These results remained consistent in the sensitivity analysis. Subgroup analysis revealed that the increased risk of IBS associated with always night shifts persisted across different genders, age groups, sleep durations, and mental health statuses. However, this association was only observed in individuals with a body mass index (BMI)  $\geq 25$  kg/m<sup>2</sup>. CONCLUSION: Individuals who always worked night shifts exhibited a higher risk of developing IBS compared to those who never/rarely engaged in night shift work.

[Lien vers l'article](#)

**Dietary patterns and quality of life among night-shift nurses in tertiary hospitals in Hangzhou: a cross-sectional analysis.**

Liang G, Hua R, Yang F. *Front Public Health*. 2025;13:1638082.

OBJECTIVE: This study aimed to examine the dietary patterns of nurses working night shifts in tertiary hospitals in Hangzhou and to assess the association between these patterns and quality of life. The objective is to provide evidence from a nutritional standpoint to inform health promotion strategies within the nursing workforce. METHOD: A cross-sectional design was employed. A total of 1,024 valid questionnaires of dietary intake data were collected using the simplified Food Frequency

Questionnaire (FFQ25), and quality of life was assessed via the 36-Item Short Form Survey (SF-36). Factor analysis was utilized to identify major dietary patterns. One-way analysis of variance was conducted to explore differences in quality-of-life scores across dietary pattern groups. RESULTS: Three primary dietary patterns were identified: Traditional, Western, and Balanced. The traditional and balanced dietary patterns were associated with higher SF-36 scores across most dimensions compared to the western dietary pattern, with the exception of the general health dimension. Statistically significant differences were observed between the Traditional and Western patterns in physical functioning, emotional state, health transition, and general health ( $p < 0.05$ ). Comparisons between the Balanced and Western patterns revealed significant differences in general health and health transition ( $p < 0.05$ ), with no significant differences in other domains. CONCLUSION: Distinct dietary patterns were observed among nurses engaged in night-shift work, with associations noted between specific patterns and quality-of-life outcomes. These findings suggest that dietary behavior may serve as a proxy for broader health-related behaviors. Interventions targeting nutritional habits may contribute to enhanced quality of life and support comprehensive health promotion strategies among nursing personnel.

[Lien vers l'article](#)

### **Association between shift work and insulin resistance in women: Implications for metabolic health.**

Choi YJ, Cho SH, Leigh JH, Jeong SH. *PLoS One*. 2025;20(11):e0337057.

Shift work has been associated with circadian rhythm disruption and related metabolic disturbances, with women potentially being more vulnerable due to physiological and hormonal characteristics. Research on the correlation between shift work and insulin resistance in women outside hospital nursing settings remains scarce. Therefore, this study investigated the relationship between shift work and insulin resistance in working-age women, using the triglyceride-glucose (TyG) index as a surrogate marker. Data from 3,780 female participants aged 19-64 years were collected from the 2019-2021 Korea National Health and Nutrition Examination Survey. Participants were classified as day or shift workers, and insulin resistance was categorized as high or low based on the TyG index. The association between work schedule and insulin resistance was evaluated after adjusting for potential confounders. Shift workers had 1.30 times higher odds of elevated insulin resistance than day workers. Stronger associations were observed among women aged 40-50 years, those in pink-collar occupations, and individuals with adverse lifestyle factors, including overweight status, physical inactivity, alcohol consumption, and smoking. These findings underscore the importance of tailored workplace health interventions and the adoption of personalized, circadian rhythm-aligned strategies to reduce metabolic risk among female shift workers, thereby supporting occupational health policy and preventive care.

[Lien vers l'article](#)

### **Caffeine consumption as a potential risk factor of osteoporosis development among night shift workers: epidemiological evidences and hypothesis.**

Bukowska-Damska A, Jurewicz J, Jabłońska E. *Int J Occup Med Environ Health*. 2025 Nov 12;38(5):474-94.

Night workers have demonstrated an increased risk of bone fracture. The mechanisms underlying the observed bone changes among night workers remain unclear. They have been attributed to hormonal changes resulting from exposure to light during nighttime, sleep restrictions and disturbances in expression of circadian rhythms genes. An additional factor that may contribute to increased bone loss among night workers is the consumption of caffeinated products. The aim of the work was to review the epidemiological evidence on the association between caffeine consumption and bone density or fracture risk and to sum up the current knowledge on the association between night shift work and

osteoporosis among workers. A search of the literature was conducted in order to identify proper studies using PubMed, Scopus, Elsevier, and Springer databases. A total of 31 articles were identified. The articles were divided to 2 groups of papers assessing the bone fracture risk and osteoporosis among caffeinated beverages drinkers (24 studies) and assessing bone strength in night shifts workers (7 studies). Findings from studies assessing the relationship between caffeine consumption and bone strength appear inconsistent. However, the results of the some presented studies highlight that high caffeine intake increases bone loss. Thus development of osteoporosis among night workers exposed to light during nighttime might be accelerated by high caffeine consumption. No epidemiological study has examined the effect of caffeine intake on the bone fracture risk among night shifts workers yet. There is a great need to better understand the etiology of osteoporosis among workers. *Int J Occup Med Environ Health*. 2025;38(5):474-94.

[Lien vers l'article](#)

### **Association between work shifts, occupational stress, and abdominal obesity in female workers in Southern Brazil.**

Arruda HC, Garcez A, da Silva JC, Kohl IS, Theodoro H, Canuto R, et al. *Front Public Health*. 2025;13:1705335.

**BACKGROUND:** Night work and occupational stress contribute to weight gain and abdominal fat accumulation through behavioral and metabolic changes. This study investigated the relationship between occupational stress, work shifts, and abdominal obesity among female workers in Southern Brazil. **METHODS:** This repeated cross-sectional study included two samples collected in 2017 and 2022, each comprising 400 female workers from two factories located in Southern Brazil. Abdominal obesity was measured by waist circumference ( $WC \geq 88$  cm), and occupational stress was assessed using the Job Stress Scale - short version. Data on demographic, socioeconomic, occupational, reproductive, and health variables were collected. Poisson regression with robust variance was used for multivariate analysis, stratified by occupational stress (absence vs. presence) and adjusted for potential confounders. **RESULTS:** The workers' mean ages were  $35.8 \pm 9.0$  years (2017) and  $34.2 \pm 9.9$  years (2022). The prevalence of abdominal obesity was 45.1% (95% confidence interval [CI]; 40.2-50.0) in 2017 and 43.0% (95% CI, 38.1-47.9) in 2022, while occupational stress was observed in 22.9% (95% CI, 18.8-27.1) and 21.0% (95% CI, 17.0-25.0) of the workers, respectively. Among workers with occupational stress, nightshift workers were twice more likely to have abdominal obesity compared to daytime workers (2017; prevalence ratio [PR] = 2.23, 95% CI; 1.47-3.38,  $p < 0.001$ ; 2022; PR = 1.80, 95% CI; 1.06-3.06,  $p = 0.029$ ). No significant association was observed between work shifts and abdominal obesity among workers without occupational stress. **CONCLUSION:** Occupational stress significantly modified the relationship between nighttime work and abdominal obesity. This study found a high prevalence of abdominal obesity, especially among female night shift workers, with no significant changes in prevalence rates between 2017 and 2022.

[Lien vers l'article](#)

## Cancers

### **Night shift work and breast cancer: from etiopathology to precision risk analysis.**

Vivarelli S, Formica T, Puliatti Y, Spataro G, Fenga C. *NPJ Breast Cancer*. 2025 Dec 4.

The increasing prevalence of night shift work (NSW) in our current professional landscape has raised significant public health concerns, particularly regarding its potential role in breast cancer (BC) development among women. Recognized by the International Agency for Research on Cancer (IARC) as a probable human carcinogen, NSW is believed to contribute to carcinogenesis primarily through

circadian disruption induced by exposure to light at night. This review explores three key areas: (1) the biological mechanisms potentially linking NSW to BC, including melatonin suppression, oxidative stress, immune dysregulation, chronic inflammation, clock gene alterations, epigenetic modifications, telomere shortening, estrogen signaling disruption, vitamin D deficiency, and gut microbiome imbalance; (2) the emergence of novel putative biomarkers with might be relevant to early detection and precision risk analysis; and (3) the latest epidemiological evidence from case-control and cohort studies evaluating BC risk in female night shift workers, while considering the heterogeneity caused by exposure misclassification and other confounding factors. Altogether, these insights underscore the importance of integrating mechanistic, molecular, and epidemiological data, not only to deepen our understanding of the strength and nature of the relationship between NSW and BC, but also to support a precision medicine framework. This integrated approach is essential for improving individual risk stratification, guiding occupational health policies, and developing targeted preventive strategies for high-risk workers.

[Lien vers l'article](#)

### Risque routier, accidentologie

#### **Unpredictable work schedule changes and occupational accidents: A comparative analysis of Korean and European working conditions surveys.**

Park MY, Ahn J. *J Occup Environ Med.* 2025 Nov 24.

**OBJECTIVE:** To examine whether unpredictable work schedule changes are associated with occupational accidents, comparing South Korea and the European Union. **METHODS:** This cross-sectional study used data from the 2017 Korean Working Conditions Survey and 2015 European Working Conditions Survey, focusing on blue-collar wage workers aged 18-64 years. Weighted logistic regression was applied, adjusting for confounders. **RESULTS:** In Korea, unpredictable schedule changes significantly increased accident risk (adjusted odds ratio [OR] = 2.733; 95% confidence interval [CI]: 1.859-4.018), with stronger effects among shift workers. In Europe, associations were weaker and nonsignificant (adjusted OR = 1.142; 95% CI: 0.811-1.610). A dose-response trend by notification timing was observed in Korea but not Europe. **CONCLUSIONS:** Schedule predictability is an independent occupational safety factor, underscoring the need for organizational and policy measures, particularly in vulnerable work settings.

[Lien vers l'article](#)

#### **Are Needlestick and Sharp Injuries Associated with Shift Work and Sleep Problems in Nurses? A Systematic Review.**

Fernández-Puerta L, Prados G, Mendoza-Vinces Á. *West J Nurs Res.* 2025 Dec;47(12):1225-36.

**BACKGROUND:** Needlestick and sharp injuries (NSIs) are common in nurses. Although sleep-related factors such as shift work have been associated with occupational accidents, to date no reviews have synthesized all the current knowledge about shift work, sleep quality, and NSIs. **OBJECTIVE:** We aimed to explore the relationship between shift work and sleep-related problems and NSIs in nurses. **METHOD:** A systematic literature review was conducted using PubMed, Embase, Scopus, CINAHL, and PsycINFO. All studies analyzing the association between NSIs alone or jointly with other occupational injuries and sleep problems or sleep-related problems were included. Sleep factors were coded into different groups: shift work, sleepiness, sleep quality, hypnotic use, and other personal and work-related factors. **FINDINGS:** Twenty-four articles met the inclusion criteria. Shift work and poor sleep quality were generally associated with a higher risk of having NSIs, while evidence regarding sleepiness and hypnotic use was limited and inconclusive. Additionally, other factors such as nurses' workload

and unsafe practices (eg, needle recapping) were identified as relevant contributors to NSIs. CONCLUSION: Sleep-related variables and workload in nurses are associated with the occurrence of NSIs. Implementing reasonable shift systems and reducing workload should be priorities for institutions to protect the health of their workers. Safety education interventions and protocols should also be developed to decrease NSI incidence. PROSPERO ID: CRD42023434443.

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### RPS et QVT

#### **Nurses' Perception and Practice of Night Shift Napping: Qualitative Research at Different Medical Settings.**

Shalaby Khalaf Mahran G, Mohamed Abd Elhamed Ahmed S, Adel Mohammed A, Mohamed Ahmed H. *Crit Care Nurs Q.* 2026 Jan-Mar 01;49(1):E1-e9.

BACKGROUND: Nurses working night shifts face the risk of sleep deprivation, posing threats to patient and nurse safety. There has been limited nursing research on napping, which is recognized as an effective strategy to enhance performance, reduce fatigue, and increase alertness. OBJECTIVES: This study aims to investigate nurses' practices and perceptions regarding the benefits and drawbacks associated with napping during night shifts. METHODS: Qualitative research methods were utilized with a targeted sample of critical care nurses working in intensive care units or emergency departments at Assiut University Hospitals in Egypt. Nurses participated in semi-structured interviews using a questionnaire. Analysis involved constant comparison of transcripts to identify categories and themes. RESULTS: Most participants (65.6%) acknowledged the benefits of napping. Reported positive effects included clearer communication (98.09%), enhanced efficiency during shift changes (59.04%), wakefulness during charting (89.52%), increased energy levels (95.23%), and confidence in task completion (87.61%). Additionally, napping was found to improve nurses' psychological adjustment (100%) and enhance safety for both nurses and patients (100%). However, a minority of respondents (34.4%) cited drawbacks such as understaffing associated with napping and patients worry. CONCLUSION: This study provides evidence of the positive impact of napping on various aspects of nursing care and safety for patients and nurses.

[Lien vers l'article](#)

#### **'I just didn't find time to exercise': Co-designed physical activity resources for young Australian shiftworkers.**

Sprajcer M, Shriane AE, Ferguson SA, Gupta CC, Smith RG, Kim JJ, et al. *Health Promot Int.* 2025 Oct 30;40(6).

Shiftworkers are vital to essential industries yet often experience adverse health impacts, including barriers to regular physical activity. Young shiftworkers face additional challenges due to the transitional life stage and the increase of unhealthy behaviours. This study aimed to co-design tailored, evidence-based physical activity resources to support the health and wellbeing of young shiftworkers. A participatory co-design approach was undertaken, involving 48 co-designers, including young, experienced, and former shiftworkers, workplace health and safety professionals, science communicators, and academic experts. Participants attended 1-2 of eight online workshops. Data from the recorded and transcribed workshops informed resource development and included the identification of key physical activity topics and effective communication strategies. A combined inductive and deductive thematic analysis identified 22 unique codes, which were synthesized into five major themes: physical activity basics, impacts of insufficient physical activity, physical activity for shiftworkers, strategies and actions for shiftworkers, and recommendations for workplaces. These

themes guided the development of a public-facing website containing evidence-based, context-relevant physical activity resources tailored specifically for young shiftworkers. A motivational and positive framing was consistently endorsed to enhance engagement and support behaviour change. The final resources reflect the diverse perspectives of co-designers and offer a scalable and practical tool to promote physical activity in this priority population. Further research should investigate resource uptake, usability, and behavioural outcomes over time.

[Lien vers l'article](#)

### **Data-driven insights into predictors of stress and sleep health among Pakistani healthcare workers under rotational shifts.**

Shahzad S, Sattar MA, Malik FN, Aqib M, Sattar A. *Sci Rep.* 2025 Nov 22;15(1):41468.

Healthcare professionals in low- and middle-income countries often deal with persistent stress at work, driven by heavy workloads, irregular shift schedules, and limited institutional support. This cross-sectional study explored levels of stress, emotional well-being, sleep issues, and shift work-related challenges among healthcare workers in Pakistan. Overall, participants reported moderate levels of stress and sleep disturbances. Interestingly, positive emotions outweighed negative ones. Age stood out as the strongest predictor of stress; those in their mid to late careers experienced significantly higher stress levels. While female participants tended to report more stress than males, the difference wasn't statistically significant. Marital status and exposure to secondhand smoke were linked to higher stress in univariate analyses, and higher body weight showed a slight association in adjusted models. However, factors like shift type and the number of weekly working hours didn't significantly predict stress. Notably, perceived stress was a strong independent predictor of negative emotional states, even after accounting for past mental health issues and work-related injuries. Age emerged as the strongest predictor of stress, with mid- and late-career professionals reporting significantly higher levels than younger colleagues. These findings emphasize the need for age-sensitive mental health interventions and stress management strategies in healthcare settings.

[Lien vers l'article](#)

### **Aligning Nursing Clinicals With Night Shift Workforce Needs.**

Segura V. *Nurse Educ.* 2025 Nov 5.

[Lien vers l'article](#)

### **High risk, low rest: a new framework for monitoring sleep vulnerability in emergency medicine.**

Schmidt L, Trousselard M, Perez C, Reynaud E, Valero B, Schlatter S, et al. *Front Public Health.* 2025;13:1679296.

**BACKGROUND:** Shift work in emergency care settings disrupts circadian rhythms and sleep, increasing health risks and performance. A key aspect of addressing these challenges lies in predicting the burden of shift work to develop safer schedules. This study introduces the Shift Load Index (SLI) as an advanced and sensitive metric for quantifying recovery constraints and examined its association with objective sleep outcomes in emergency healthcare professionals. **METHODS:** A two-phase observational field study was conducted with 72 nurses and physicians from two French emergency departments. In the theoretical validation phase, 140 work shifts were analyzed using the SLI and compared to validated FAID Quantum fatigue scores. In the behavioral validation phase, weekly actigraphy data from 35 participants were analysed to assess time in bed, total sleep time, and Sleep Regularity Index (SRI). We employed generalized linear mixed-effects models to assess the association of SLI with sleep outcomes. **RESULTS:** SLI scores significantly predicted FAID Quantum scores (all  $p < 0.001$ ). Emergency

healthcare professionals obtained on average 6h 09 min of sleep for 8h09min in bed, with irregular sleep patterns (mean SRI = 52%). Higher SLI scores were associated with reduced time in bed ( $\beta = -33.19$ ,  $p < 0.001$ ), shorter sleep ( $\beta = -18.30$ ,  $p < 0.001$ ), and lower SRI ( $\beta = -1.06$ ,  $p < 0.001$ ). SRI and total sleep time, as independent factors, together explained 48% of SLI variance (including random effects, 18% by fixed effects only). DISCUSSION: Higher shift load is associated with both reduced sleep quantity and regularity. The SLI provides a useful tool to assess recovery burden, with potential applications in optimizing shift schedules and informing fatigue risk management strategies for emergency healthcare professionals.

[Lien vers l'article](#)

### **An exploration of after-hours workloads of trainee medical officers in a South Australian tertiary hospital.**

Ryan LM, Gluck S, Thomas J, Cohen M, Wislang K, Maddison J, et al. *Intern Med J.* 2025 Nov 11.

BACKGROUND: In Australia, after-hours medical care is primarily delivered by a small number of Trainee Medical Officers (TMOs), but little is known about their workloads. With increasing care demands on hospitals, this needs to be understood to improve health service delivery, resource allocation and patient and TMO safety. AIM: The aim of the study was to describe and quantify after-hours workloads of TMOs in a South Australian tertiary hospital. METHODS: An observational time-and-motion study was undertaken to capture work activities, multitasking and interruptions. The proportion of the total observation time TMOs spent on tasks, multitasking and interruptions was analyzed using descriptive statistics. RESULTS: During the observation period of 120.65 h, 3454 tasks were recorded. TMOs spent most of their time (72%) on indirect care, direct care and professional communication, mainly reviewing patient notes, performing a procedure or having discussions with other staff members. Time spent by TMOs on education or supervision activities was very low (less than 27 min of total observation time) and multitasking time was small (9 h out of 120 h observed). Interruption rates were also low (one per hour). CONCLUSION: This study shows that TMOs are mostly spending their time on night shifts in three task areas - time on indirect care, direct care and professional communication. During night shifts, TMOs spent limited supervision/education and social activity tasks, were less interrupted and undertook less multitasking than TMOs undertaking day shifts. This study can inform decisions about workloads to ensure the safety of patients and TMOs and improve health service delivery.

[Lien vers l'article](#)

### **Work-related stress in intensive care unit night shift nurses: A cross-sectional analysis of prevalence and determinants.**

Reshia FAA, Abo Seada AI, Salameh B, Abdallah J, Alruwaili EMR, Salama ESS, et al. *PLoS One.* 2025;20(11):e0336041.

BACKGROUND: Night-shift ICU nurses are highly vulnerable to work-related stress, impacting performance, patient safety, and burnout risk. AIM: To assess the prevalence and sources of work-related stress among ICU nurses working night shifts and to explore the relationships between stress levels and selected demographic and professional variables. METHOD: A descriptive cross-sectional study was conducted with a convenience sample of 362 ICU nurses working at Mansoura University Hospitals. Participants completed a two-part questionnaire comprising a nurses' demographic data sheet and a validated Arabic version of the Revised Nursing Stress Scale (RNSS). Data were collected via a Google Form between January 10, 2025, and April 30, 2025, and analyzed using SPSS version 21.0, employing descriptive statistics, t-tests, ANOVA, and reliability testing. RESULTS: Nearly 60% of participants reported moderate to high levels of stress. The highest stress scores were associated with workload, interactions with patients and their families, and supervisory issues. Female nurses reported

significantly higher stress levels related to death and dying, patient-family interactions, and discrimination ( $p < 0.05$ ). Nurses with less than five years of experience reported significantly greater stress concerning uncertainty about treatment. No significant associations were found between overall stress levels and variables such as age, marital status, educational level, or frequency of night shifts. **CONCLUSION:** Work-related stress is highly prevalent among ICU nurses working night shifts, primarily driven by heavy workloads and interpersonal challenges. Stress levels vary significantly by gender and years of experience, underscoring the need for organizational interventions, such as staff support programs, training, and effective shift management, to mitigate stress and improve the quality of care. Future research is warranted to conduct longitudinal assessments of stress and to evaluate the effectiveness of interventions across diverse healthcare settings.

[Lien vers l'article](#)

### **Unexplored dimension of shift work: the effects of late-early shifts on nurses and their wellbeing - a qualitative study.**

Karki U, Dafny HA. *BMC Nurs.* 2025 Dec 6.

**AIM:** To investigate nurses' perceptions of the effects of late-early shifts on their overall wellbeing including physical and mental health. **BACKGROUND:** Nurses work long hour shifts with short breaks in between to provide 24-hour care in a healthcare setting. Little is known about nurses' perception of counterclockwise (CCW) rotating shifts, mainly the late-early shift. This study delves into nurses' views on late-early shifts in three South Australian private hospitals. **DESIGN:** An exploratory, qualitative design. **METHODS:** Four focus group interviews, each with five nurses from three private hospitals in South Australia, were conducted post-ethical approval. Qualitative data underwent manual thematic analysis using an inductive approach. **RESULTS:** Participants reported impacts on physical and mental health, unhealthy food habits, and social and work environment challenges associated with late-early shifts. These effects may be mitigated through interventions like extended breaks between shifts, reduced workload, and additional support. **CONCLUSIONS:** The late-early shift has detrimental effects on nurses' wellbeing. This led nurses to opt for casual work, practice "quiet quitting," or pursue nursing roles that accommodate their preferred shift schedules. **IMPLICATIONS FOR NURSING MANAGEMENT:** Research indicates that well-rested nurses provide quality patient care and improve health outcomes. Optimal scheduling and incentives play a vital role in enhancing nurses' health and retention of the nursing workforce. **NO PATIENT OR PUBLIC CONTRIBUTION:** This paper explicitly explores the experience of nurses working late-early shifts in private hospitals in South Australia. **CLINICAL TRIAL NUMBER:** Not applicable.

[Lien vers l'article](#)

### **Organizational Silence and Related Factors Among Shift Work Nurses in Korea: A Cross-Sectional Study.**

Eon Sim S, Jang HY. *J Nurs Manag.* 2025;2025:1256556.

**AIM:** This study aimed to explore factors contributing to organizational silence, drawing upon the framework of the choice to remain silent by Milliken, Morrison, and Hewlin. **BACKGROUND:** The promotion of open communication and the enabling of open discourse amongst nursing professionals are essential for the enhancement of health service quality and the assurance of patient safety. **METHODS:** A cross-sectional descriptive survey was conducted from August 14, 2023, to September 15, 2023. Data were collected from 170 rotating shift nurses at a tertiary hospital in South Korea. The hypotheses were tested using multiple regression and the PROCESS macro, Version 4.2, Model 4. **RESULTS:** Leader-member exchange not only had a direct effect on organizational silence but also had a significant indirect effect mediated by workplace bullying ( $\beta = -0.03$ , 95% CI: [-0.074, -0.001]). The total effect was confirmed to be  $\beta = -0.23$  (95% CI: [-0.345, -0.129]). **CONCLUSION:** Organizational

silence is shaped by both individual characteristics and organizational conditions. Workplace bullying not only has a direct effect on organizational silence but also mediates the relationship between leader-member exchange and organizational silence. IMPLICATIONS FOR NURSING MANAGEMENT: Nurse managers should be sensitive to negative cultures such as bullying and actively promote leader-member and team-member exchange. When nurse managers actively maintain and support relationships with members, members are more likely to disclose issues and express their opinions.

[Lien vers l'article](#)

### **Nighttime surgery increases complication risk in chronic subdural hematoma: a population-based cohort study.**

Clementsson S, Buwaidar A, Bartek J, Fletcher-Sandersjö A. *Acta Neurochir (Wien)*. 2025 Dec 3;167(1):311.

**BACKGROUND:** Surgeries performed at night may carry higher risk due to provider fatigue and reduced staffing, but data from neurosurgical populations are limited. We evaluated whether nighttime evacuation of chronic subdural hematoma (CSDH) was associated with increased complications or recurrence. **METHODS:** We conducted a retrospective cohort study of adults undergoing CSDH surgery at a tertiary neurosurgical center between 2006 and 2023. The primary exposure was nighttime surgery, defined by procedure start time. Primary outcomes were moderate-to-severe complications (Landriel-Ibáñez grade II-IV within 30 days) and CSDH recurrence (reoperation within 6 months). Multivariable logistic regression was used to adjust for confounders. **RESULTS:** Of 2860 patients, 709 (25%) underwent nighttime surgery. Nighttime surgery was independently associated with an increased risk of moderate-to-severe complications (OR 1.58, 95% CI 1.04-2.37;  $p = 0.028$ ). This risk peaked during the final hours of the night shift. Although CSDH recurrence was more common after nighttime surgery in unadjusted analysis (13% vs. 10%), this difference was not significant after confounder adjustment. **CONCLUSION:** Nighttime surgery for CSDH was associated with an increased risk of moderate-to-severe complications. When feasible, surgery should be performed during daytime hours.

[Lien vers l'article](#)

### **Association between work shifts, occupational stress, and abdominal obesity in female workers in Southern Brazil.**

Arruda HC, Garcez A, da Silva JC, Kohl IS, Theodoro H, Canuto R, et al. *Front Public Health*. 2025;13:1705335.

**BACKGROUND:** Night work and occupational stress contribute to weight gain and abdominal fat accumulation through behavioral and metabolic changes. This study investigated the relationship between occupational stress, work shifts, and abdominal obesity among female workers in Southern Brazil. **METHODS:** This repeated cross-sectional study included two samples collected in 2017 and 2022, each comprising 400 female workers from two factories located in Southern Brazil. Abdominal obesity was measured by waist circumference ( $WC \geq 88$  cm), and occupational stress was assessed using the Job Stress Scale - short version. Data on demographic, socioeconomic, occupational, reproductive, and health variables were collected. Poisson regression with robust variance was used for multivariate analysis, stratified by occupational stress (absence vs. presence) and adjusted for potential confounders. **RESULTS:** The workers' mean ages were  $35.8 \pm 9.0$  years (2017) and  $34.2 \pm 9.9$  years (2022). The prevalence of abdominal obesity was 45.1% (95% confidence interval [CI]; 40.2-50.0) in 2017 and 43.0% (95% CI, 38.1-47.9) in 2022, while occupational stress was observed in 22.9% (95% CI, 18.8-27.1) and 21.0% (95% CI, 17.0-25.0) of the workers, respectively. Among workers with occupational stress, nightshift workers were twice more likely to have abdominal obesity compared to daytime workers (2017; prevalence ratio [PR] = 2.23, 95% CI; 1.47-3.38,  $p < 0.001$ ; 2022;

PR = 1.80, 95% CI; 1.06-3.06,  $p = 0.029$ ). No significant association was observed between work shifts and abdominal obesity among workers without occupational stress. **CONCLUSION:** Occupational stress significantly modified the relationship between nighttime work and abdominal obesity. This study found a high prevalence of abdominal obesity, especially among female night shift workers, with no significant changes in prevalence rates between 2017 and 2022.

[Lien vers l'article](#)

### Santé psychique

#### **The relationship between sleep-related worry and insomnia among shift-working nurses: the serial mediation of depression and anxiety.**

Xie L, Wu A, Yuan Z, Shu T, Jiang M, Liu D, et al. *Psychol Health Med.* 2025 Nov 26:1-17.

Shift-working nurses frequently experience insomnia as a consequence of irregular work schedules. This study aimed to examine the psychological mechanisms through which sleep-related worry contributes to insomnia, focusing on the roles of depressive and anxious emotions. Using convenience sampling, data on demographics, sleep-related worry, depression, anxiety, and insomnia were collected from 611 shift-working nurses. Mediation analyses were then performed with SPSS 27.0 and the PROCESS macro. Results indicated that the total effect of sleep-related worry on insomnia was 0.255 (bias-corrected 95% CI [[0.227, 0.283]], and the direct effect was 0.188 (bias-corrected 95% CI [0.155, 0.221]), accounting for 73.73% of the total effect. The independent indirect effect through depression was statistically significant ( $b = 0.045$ , bias-corrected 95% CI [0.015, 0.075]). The serial mediation effect through depression followed by anxiety was also statistically significant ( $b = 0.019$ , bias-corrected 95% CI [0.001, 0.039]), jointly accounting for 26.27% of the total effect. In contrast, the independent indirect effect of anxiety was not significant ( $b = 0.003$ , bias-corrected 95% CI [0.000, 0.009]). These findings suggest that depression serves as a key mediator between sleep-related worry and insomnia. Anxiety, although not independently significant, contributes additively to insomnia when combined with depression. Interventions that prioritize reducing sleep-related worry and strengthening emotional regulation could improve sleep quality and overall health, ultimately supporting both physical and psychological well-being.

[Lien vers l'article](#)

#### **Working Against the Clock: Depression and Hormonal Imbalance in Shift-Working Men.**

Parikh N, Oppenheimer A, Alexander JM, Hinojosa-Gonzalez D, Saffati G, Bazzi M, et al. *Urology.* 2025 Nov 17.

**OBJECTIVES:** To assess the relationship between depression, testosterone levels, and shift work in men presenting to a single-center, tertiary urology clinic with symptoms of hypogonadism. **METHODS:** A retrospective chart review and survey were conducted on 766 men presenting to a single-center academic urology clinic between 2014 and 2017. Participants completed the Patient Health Questionnaire-9 (PHQ-9) and Shift Work Sleep Disorder (SWSD) Questionnaire at intake. Serum testosterone levels, medication history (testosterone therapy, clomiphene citrate, and PDE5 inhibitors) were collected. Data was analyzed using linear regression and nonparametric testing. **RESULTS:** The mean testosterone level in this cohort was 611 ng/dL with a mean PHQ-9 of 5.28 (mild depression). A significant inverse relationship was found: each 1 ng/dL increase in testosterone corresponded to a 0.18-point decrease in PHQ-9 score ( $p < 0.05$ ). Men at low risk for sleep work disorder had lower PHQ-9 scores than those at high risk (median 2 vs 9,  $p = 0.001$ ) and were less likely to report suicidal ideation ( $p = 0.00098$ ). No significant differences were noted in PHQ-9 between patients on testosterone and clomiphene citrate. A difference in total PHQ-9 was seen between

eugonadal and hypogonadal men not on medication therapy ( $p < 0.020$ ). **CONCLUSIONS:** This study demonstrates the significant impact and association between testosterone levels, shift work, and depressive symptoms. These findings highlight the importance of routine depression screening and counseling for men presenting with hypogonadal symptoms, particularly those engaged in shift work.

[Lien vers l'article](#)

### **The Hidden Cost of Long Working Hours: Occupational Anxiety and Argumentativeness in Emergency Nurses.**

Özden G, Ceviz A, Aslan B, Gönültaş M. *J Emerg Nurs.* 2025 Nov 4.

**INTRODUCTION:** Emergency nurses face significant occupational challenges that affect workplace interactions. This study examined whether weekly working hours mediate the relationship between occupational anxiety and argumentativeness among emergency nurses. It was hypothesized that increased levels of both occupational anxiety and argumentativeness were associated with longer working hours. **METHODS:** A cross-sectional correlational study was conducted in a full-service public hospital located in an urban area in eastern Turkey. A total of 114 emergency nurses participated in the study. The inclusion criteria required current emergency department employment and consent; nurses on long-term leave were excluded. Occupational anxiety and argumentativeness were measured using validated scales, with weekly working hours as a potential mediator of this relationship. The analysis included correlation, regression, mediation analysis, and structural equation modeling. **RESULTS:** Nurses reported high occupational anxiety (mean = 101.83; SD = 9.74) and slightly above-average argumentativeness (mean = 31.69; SD = 4.15). Strong positive correlations were found among weekly working hours, occupational anxiety, and argumentativeness ( $r = 0.58-0.74$ ;  $P < .001$ ). Male sex ( $\beta = 3.75$ ;  $P = .033$ ) and longer working hours ( $\beta = 4.52$ ;  $P < .001$ ) were significant predictors of higher occupational anxiety. Mediation analysis confirmed that working hours partially mediated the anxiety-argumentativeness relationship, verified by structural equation modeling with good fit indices ( $\chi^2/df = 2.01$ ; comparative fit index = 0.952; root mean square error of approximation = 0.056). **DISCUSSION:** Emergency nurses experience heightened occupational anxiety directly related to argumentativeness, with weekly working hours serving as a partial mediator. The results emphasize the need for psychosocial workload management and communication training programs in demanding health care environments.

[Lien vers l'article](#)

### **Neural correlates of shift work in nurses: Alterations in cortical gyrification and functional connectivity.**

Lu L, Zhu L, Jiang N, Xia Y, Zhang Y, Li J, et al. *Sleep Med.* 2025 Dec;136:106836.

**OBJECTIVES:** Shift work among nurses is an indispensable part of healthcare. However, it may be accompanied by circadian rhythm disruption. This disruption has been associated with alterations in brain structure and function, and has often been observed to co-occur with sleep disorders and psychological problems. This study aimed to elucidate the neurobiological mechanisms underlying the clinical symptoms observed in night-shift nurses, with a focus on cortical morphology and functional connectivity. **METHODS:** Sixty-two night-shift nurses and fifty-nine day-shift nurses were included in this study. Their cognitive function, sleep quality and psychological states were systematically evaluated. Surface-based morphometric (SBM) analysis and seed-based functional connectivity (FC) analysis were conducted based on multimodal MRI data to assess brain structural and functional differences between the two groups. **RESULTS:** Compared to day-shift nurses, night-shift nurses exhibited poorer sleep quality and higher levels of anxiety and depression. They also showed increased local gyrification index (LGI) in the right superior temporal gyrus (STG) extending to the superior temporal sulcus (STS), along with altered functional connectivity (FC): reduced STG-posterior

cerebellum (PC) and increased STG-precuneus/cuneus connectivity. In the pooled data, higher LGI correlated with poorer sleep quality; decreased STG-PC connectivity with lower depression scores; and increased STG-precuneus/cuneus connectivity with higher anxiety scores and poorer sleep quality. CONCLUSIONS: Night-shift nurses exhibited distinct alterations in cortical gyrification and functional connectivity, highlighting the potential neural correlates of shift work. These findings elucidate the neurobiological mechanisms underlying the clinical symptoms observed in night-shift nurses, from both structural and functional aspects of the brain.

[Lien vers l'article](#)

### **Depression and daytime dysfunction centralize the fatigue-sleep cascade in island firefighters: a symptom network and Bayesian DAG study.**

Liu Y, Li Z, Xiang Q, Zhang X, Bai R, Sun C, et al. *Front Psychiatry*. 2025;16:1663957.

BACKGROUND: Sleep disturbances, fatigue, and psychological distress are prevalent among island-based firefighters, a high-risk occupational group. However, the interactions and mechanisms underlying these factors remain unclear. This study investigated relationships among fatigue, sleep disturbances, psychological distress, and psychological resilience using symptom network analysis and exploratory Bayesian Directed Acyclic Graph (DAG) modeling. METHODS: We surveyed 570 male island-based firefighters in China (cross-sectional). The PSQI, FSS, SCL-90, and CD-RISC were administered. Variables were residualized for demographic/behavioral covariates and z-standardized. We estimated an EBICglasso Gaussian Graphical Model ( $\gamma = 0.50$ ) to quantify centrality (Strength, expected influence) and predictability ( $R^2$ ). Robustness was assessed via  $\gamma = 0.25-0.75$  sensitivity, bootstrapping, and Network Comparison Tests across sleep status (sleep-disturbed [SD] vs sleep-normal [SN]) and work type (shift work [SW] vs non-shift [NS]). Exploratory Bayesian DAG modeling was conducted in SD using parallel Tabu/Hill-Climbing with BIC scoring and bootstrapped aggregation to derive a CPDAG. RESULTS: Sleep disturbance prevalence was 46.0% (262/570). In the full network, depression (S4) and daytime dysfunction (P7) were among the most central nodes (EI = 1.938 and 1.613), and the fatigue total (F0) showed the highest predictability ( $R^2 = 0.176$ ). In SD, hostility (S6, EI = 1.913) and anxiety (S5, EI = 1.462) emerged as potential affective hubs; tenacity (C1) was positioned upstream (Strength = 1.961; EI = -1.315) in relation to sleep and depression. Compared with SN, SD showed lower density and global strength (both  $P < 0.01$ ). Between SW and NS, overall network structure differed ( $P = 0.014$ ) whereas global strength did not ( $P = 0.694$ ). Sensitivity analyses indicated high agreement of non-zero edges and minimal fluctuations in density/global strength across  $\gamma = 0.25-0.75$ . The DAG/CPDAG suggested a potential path from subjective sleep quality  $\rightarrow$  fatigue  $\rightarrow$  depression  $\rightarrow$  hostility  $\rightarrow$  somatization, with C1 potentially influencing sleep and depression; directionality warrants further longitudinal validation. CONCLUSION: Depression (S4) and daytime dysfunction (P7) may serve as key nodes linking sleep and affective processes; fatigue may relate to psychological distress via sleep; and tenacity (C1) could play an upstream protective role. Sleep status and shift work may reorganize network structure without necessarily altering global connectivity. Targeted interventions may consider subjective sleep perception and psychological resilience in island-based firefighters.

[Lien vers l'article](#)

### **Corrigendum to "The Impact of Rotating Shift Work on Nurse Burnout: A Systematic Review of Contributing Factors and Organizational Strategies".**

*SAGE Open Nurs*. 2025 Jan-Dec;11:23779608251400824.

[This corrects the article DOI: 10.1177/17483026241256093.].

[Lien vers l'article](#)

### Troubles cognitifs et de la vigilance

#### **Nurses' Perception and Practice of Night Shift Napping: Qualitative Research at Different Medical Settings.**

Shalaby Khalaf Mahran G, Mohamed Abd Elhamed Ahmed S, Adel Mohammed A, Mohamed Ahmed H. *Crit Care Nurs Q.* 2026 Jan-Mar 01;49(1):E1-e9.

**BACKGROUND:** Nurses working night shifts face the risk of sleep deprivation, posing threats to patient and nurse safety. There has been limited nursing research on napping, which is recognized as an effective strategy to enhance performance, reduce fatigue, and increase alertness. **OBJECTIVES:** This study aims to investigate nurses' practices and perceptions regarding the benefits and drawbacks associated with napping during night shifts. **METHODS:** Qualitative research methods were utilized with a targeted sample of critical care nurses working in intensive care units or emergency departments at Assiut University Hospitals in Egypt. Nurses participated in semi-structured interviews using a questionnaire. Analysis involved constant comparison of transcripts to identify categories and themes. **RESULTS:** Most participants (65.6%) acknowledged the benefits of napping. Reported positive effects included clearer communication (98.09%), enhanced efficiency during shift changes (59.04%), wakefulness during charting (89.52%), increased energy levels (95.23%), and confidence in task completion (87.61%). Additionally, napping was found to improve nurses' psychological adjustment (100%) and enhance safety for both nurses and patients (100%). However, a minority of respondents (34.4%) cited drawbacks such as understaffing associated with napping and patients worry. **CONCLUSION:** This study provides evidence of the positive impact of napping on various aspects of nursing care and safety for patients and nurses.

[Lien vers l'article](#)

#### **Glymphatic dysfunction mediates altered regional neural abilities in night-shift nurses: A multimodal neuroimaging and transcriptomic study.**

Deng L, Jiang N, Yuan S, Jiang D, Zhu L, Zhang Y. *J Affect Disord.* 2026 Feb 1;394(Pt A):120427.

**BACKGROUND:** Frequent night shifts in nurses disrupt circadian rhythms, contributing to sleep disturbances, cognitive decline, and neuroinflammation. However, the neural mechanisms underlying such clinical phenotypes are largely unknown. **OBJECTIVE:** This study aimed to investigate the glymphatic alterations and its related changes in regional neural activity in night-shift nurses. **METHODS:** A total of 67 female nurses were included, which were further divided into day-shift ( $n = 36$ ) and night-shift ( $n = 31$ ) groups. Diffusion tensor image analysis along the perivascular space (DTI-ALPS index) and amplitude of low-frequency fluctuations (ALFF) were used to assess the glymphatic function and regional brain activity. Neuroimaging-transcriptional analyses on the between-group regional ALPS-ALFF changes were also performed. **RESULTS:** Compared to day-shift nurses, night-shift nurses exhibited poor sleep qualities ( $p < 0.001$ ), lower DTI-ALPS indices in the left hemisphere ( $p < 0.05$ ) and across the whole-brain ( $p < 0.05$ ). The lower DTI-ALPS indices were related to lower ALFF values in the left inferior parietal gyrus/angular gyrus (IPG/AG). In the night-shift nurses, all ALPS indices were negatively correlated with Pittsburgh Sleep Quality Index (PSQI) scores ( $p < 0.001$ ). Further mediation analysis revealed that DTI-ALPS index mediated the relationship between PSQI scores and ALFF changes in the left IPG/AG ( $p < 0.05$ ). Neuroimaging-transcriptional analyses revealed key biological processes and pathways linked to circadian rhythm regulation, synaptic plasticity, neuroinflammation, protein modification, and ubiquitination. **CONCLUSION:** We concluded that the impaired glymphatic function and disrupted regional neural activity may be the neural substrates underlying the poor sleep qualities and cognitive declines in night-shift nurses.

[Lien vers l'article](#)

**The relationship between sleep-related worry and insomnia among shift-working nurses: the serial mediation of depression and anxiety.**

Xie L, Wu A, Yuan Z, Shu T, Jiang M, Liu D, et al. *Psychol Health Med*. 2025 Nov 26:1-17.

Shift-working nurses frequently experience insomnia as a consequence of irregular work schedules. This study aimed to examine the psychological mechanisms through which sleep-related worry contributes to insomnia, focusing on the roles of depressive and anxious emotions. Using convenience sampling, data on demographics, sleep-related worry, depression, anxiety, and insomnia were collected from 611 shift-working nurses. Mediation analyses were then performed with SPSS 27.0 and the PROCESS macro. Results indicated that the total effect of sleep-related worry on insomnia was 0.255 (bias-corrected 95% CI [[0.227, 0.283]], and the direct effect was 0.188 (bias-corrected 95% CI [0.155, 0.221]), accounting for 73.73% of the total effect. The independent indirect effect through depression was statistically significant ( $b = 0.045$ , bias-corrected 95% CI [0.015, 0.075]). The serial mediation effect through depression followed by anxiety was also statistically significant ( $b = 0.019$ , bias-corrected 95% CI [0.001, 0.039]), jointly accounting for 26.27% of the total effect. In contrast, the independent indirect effect of anxiety was not significant ( $b = 0.003$ , bias-corrected 95% CI [0.000, 0.009]). These findings suggest that depression serves as a key mediator between sleep-related worry and insomnia. Anxiety, although not independently significant, contributes additively to insomnia when combined with depression. Interventions that prioritize reducing sleep-related worry and strengthening emotional regulation could improve sleep quality and overall health, ultimately supporting both physical and psychological well-being.

[Lien vers l'article](#)

**Transient Psychotic Symptoms Induced by Acute Sleep Deprivation in a Factory Worker: A Case Report.**

Gassull A. *Cureus*. 2025 Oct;17(10):e95575.

Shift work sleep disorder and acute sleep deprivation are increasingly recognized occupational hazards, particularly among factory workers on rotating schedules, with potential for severe neuropsychiatric manifestations, including transient psychosis. We report the case of a 37-year-old male factory worker with no psychiatric history who developed vivid auditory hallucinations and intense anxiety following consecutive night shifts and daytime overtime, resulting in profound sleep restriction. Presentation to occupational health revealed an exhausted, oriented patient with mild psychomotor agitation but no neurological deficits or substance intoxication. Comprehensive evaluation excluded organic causes through normal laboratory tests and clinical examination. Management consisted of enforced rest and temporary removal from night duties, leading to complete symptom resolution within three days without pharmacotherapy. No recurrence occurred over a three-month follow-up. This case underscores the vulnerability of shift workers to sleep deprivation-induced psychosis, a reversible condition often overlooked in occupational settings. Early recognition and non-pharmacologic intervention can prevent escalation, highlighting the need for sleep hygiene protocols and shift scheduling reforms in industrial environments to mitigate such risks.

[Lien vers l'article](#)

**Sleep disorders mediate the relationship between work family conflict and burnout in shift nurses.**

Zheng D, Chen Y, Cao J, Li H, Chu W, Yan C. *Sci Rep*. 2025 Nov 24;15(1):41708.

To examine the prevalence of sleep disorders, work-family conflict, and job burnout among shift-working nurses and to analyse the mediating role of shift-related sleep disorders in the relationship between work-family conflict and job burnout within this population. A convenience sampling method

was used to select 401 registered on-duty shift nurses from a tertiary grade A hospital in China for a questionnaire survey. The survey utilized a general information questionnaire, the Pittsburgh Sleep Quality Index (PSQI), the Maslach Burnout Inventory - General Survey (MBI-GS), and the Work-family Conflict Scale (WFC). Multiple hierarchical linear regression analysis was conducted to explore the mediating role of sleep disorders in the relationship between work-family conflict and job burnout. Ultimately, 363 shift nurses participated in the survey, and the average sleep quality score was  $9.29 \pm 3.68$ . The average score for work-family conflict was  $70.19 \pm 17.62$ . The average score for burnout was  $2.32 \pm 0.57$ . Work-family conflict was positively correlated with sleep disorders and burnout, and sleep disorders played a mediating role in the relationship between work-family conflict and burnout, with a mediating effect of 0.0566, accounting for 15.77% of the total effect. Nursing managers should pay close attention to the hazards of sleep disorders caused by shift work. By reasonably allocating nursing human resources and improving shift schedules, managers can ensure that nurses get adequate rest after night shifts. Nursing managers should also focus on providing psychological support to reduce the occurrence of sleep disorders among shift nurses. Nurses themselves should actively seek family support, develop good sleep habits and improve sleep quality to enhance their professional health and ensure patient safety and care quality.

[Lien vers l'article](#)

### **Effects of a 24/48 to 48/96 Shift Schedule Change on Firefighter Sleep and Health: Short-Term Improvements and Six-Month Stability.**

Billings JM, Jahnke SA. *Int J Environ Res Public Health*. 2025 Nov 5;22(11).

This study examined the impact of a shift schedule change on firefighter sleep and health outcomes ( $n = 24$ ). Firefighters from a U.S. department transitioned from a 24 h on, 48 h off (24/48) schedule to a 48 h on, 96 h off (48/96) schedule. Wrist actigraphy and self-reported health outcomes were assessed at three time points: baseline (24/48), 3 months post-transition, and 6 months post-transition. Objective sleep measures included total sleep time (TST), sleep efficiency (SE), sleep onset latency (SOL), and wake after sleep onset (WASO). Self-reported health outcomes included the Insomnia Severity Index (ISI), Beck Depression Inventory-II (BDI-II), Beck Anxiety Inventory (BAI), Multidimensional Assessment of Fatigue (MAF), and the Alcohol Use Disorders Identification Test (AUDIT). Linear mixed-effects models (LMMs) with random intercepts were used to evaluate changes over time, adjusting for age, years of service, and individual night-time call volume. Results showed significant improvements in TST, SE, SOL, and WASO at the 3-month follow-up, which were sustained but did not further increase at 6 months. ISI and BDI-II scores also improved, while BAI, MAF, and AUDIT remained stable. These findings suggest that the 48/96 schedule may provide short-term improvements in sleep and psychological health for firefighters in low call-volume settings. Additional research is needed in higher-volume departments and over longer timeframes.

[Lien vers l'article](#)

### **Relationship between Circadian Rhythms and Subjective Sleep Quality in Shift Workers.**

Tanaka S, Matsunaga D, Tanaka Y, Tajima T, Inoue H, Muraoka S, et al. *Annu Int Conf IEEE Eng Med Biol Soc*. 2025 Jul;2025:1-4.

The phase shift of circadian rhythm by night shift work has caused concern since it may lead to mental and physical disorders. In this study, we estimated the circadian rhythm phase of core body temperature (CBT) in nurses working night shifts and verified whether phase shift occurred after night shift work. We also investigated the relationship between circadian rhythm phase shift and subjective sleep quality. The results showed that the circadian rhythm phase was delayed  $46 \pm 33$  minutes and subjective sleep quality worsened after night shift work. Our findings suggest an association between delayed circadian phase and poorer subjective sleep quality. We hope that our study will contribute to

improving the sleep of shift workers. Clinical Relevance This study suggests that a relationship exists between delay of circadian rhythm and decline of subjective sleep quality. Understanding this relationship may reduce sleep problems caused by night shift work.

[Lien vers l'article](#)

#### **Sleep regularity in shiftwork: A missing metric for fatigue risk management?**

Sprajcer M, Laycock AE, Fauveau AM, Ferguson SA, Vincent GE. *Sleep Med Rev.* 2025 Dec;84:102200.

[Lien vers l'article](#)

#### **Data-driven insights into predictors of stress and sleep health among Pakistani healthcare workers under rotational shifts.**

Shahzad S, Sattar MA, Malik FN, Aqib M, Sattar A. *Sci Rep.* 2025 Nov 22;15(1):41468.

Healthcare professionals in low- and middle-income countries often deal with persistent stress at work, driven by heavy workloads, irregular shift schedules, and limited institutional support. This cross-sectional study explored levels of stress, emotional well-being, sleep issues, and shift work-related challenges among healthcare workers in Pakistan. Overall, participants reported moderate levels of stress and sleep disturbances. Interestingly, positive emotions outweighed negative ones. Age stood out as the strongest predictor of stress; those in their mid to late careers experienced significantly higher stress levels. While female participants tended to report more stress than males, the difference wasn't statistically significant. Marital status and exposure to secondhand smoke were linked to higher stress in univariate analyses, and higher body weight showed a slight association in adjusted models. However, factors like shift type and the number of weekly working hours didn't significantly predict stress. Notably, perceived stress was a strong independent predictor of negative emotional states, even after accounting for past mental health issues and work-related injuries. Age emerged as the strongest predictor of stress, with mid- and late-career professionals reporting significantly higher levels than younger colleagues. These findings emphasize the need for age-sensitive mental health interventions and stress management strategies in healthcare settings.

[Lien vers l'article](#)

#### **Effect of sleep quality on alarm fatigue among emergency nurses.**

Şener A, Çınarlı T, Köse D. *Int Emerg Nurs.* 2025 Dec;83:101706.

**BACKGROUND:** Considering that patient care is provided for 24 h without interruption in the emergency service, the work roles in this service require a state of full wakefulness. Alarm fatigue is defined as the main cause of clinical alarm management problems. Alarm fatigue, that cannot be managed in a full sense, may make desensitize emergency nurses and may endanger patient safety. **AIM:** The aim of the study was to determine the effect of sleep quality on alarm fatigue of emergency nurses. **METHODS:** This research used the descriptive, cross-sectional and correlational study pattern. The study was completed with 183 emergency nurses from May-November 2023. Data were collected using the Descriptive Information Form, Pittsburgh Sleep Quality Index (PSQI) and the Nurses' Alarm Fatigue Scale. Data were analyzed using IBM SPSS V26 program. **RESULTS:** Of nurses, 96.2 % worked shifts and 38.8 % stated their monthly working hours were more than 240 h. Of those working shifts, 77.6 % slept after their shift, 56.8 % experienced sleep problems and 43.3 % stated they required support to be able to easily fall asleep. The mean scores on the Nurses' Alarm Fatigue Scale were  $24.98 \pm 6.16$ , while mean scores for the PSQI were  $9.08 \pm 3.48$ . There was a statistically significant, low level positive correlation between PSQI scores and Alarm Fatigue Scale scores ( $r = 0.178$ ). Additionally, the simple linear regression model created with the aim of investigating the effect of PSQI scores on

Alarm Fatigue Scale scores was identified to be statistically significant ( $F = 5.897$ ;  $p = 0.016$ ). CONCLUSION: With the aim of empowering nurses working irregular night shifts in institutions providing health services, offering education and teaching programs should be considered. In conclusion, our research will help to create a safer, more effective and encouraging hospital environment for both patients and emergency service nurses.

[Lien vers l'article](#)

### **High risk, low rest: a new framework for monitoring sleep vulnerability in emergency medicine.**

Schmidt L, Trousselard M, Perez C, Reynaud E, Valero B, Schlatter S, et al. *Front Public Health*. 2025;13:1679296.

BACKGROUND: Shift work in emergency care settings disrupts circadian rhythms and sleep, increasing health risks and performance. A key aspect of addressing these challenges lies in predicting the burden of shift work to develop safer schedules. This study introduces the Shift Load Index (SLI) as an advanced and sensitive metric for quantifying recovery constraints and examined its association with objective sleep outcomes in emergency healthcare professionals. METHODS: A two-phase observational field study was conducted with 72 nurses and physicians from two French emergency departments. In the theoretical validation phase, 140 work shifts were analyzed using the SLI and compared to validated FAID Quantum fatigue scores. In the behavioral validation phase, weekly actigraphy data from 35 participants were analysed to assess time in bed, total sleep time, and Sleep Regularity Index (SRI). We employed generalized linear mixed-effects models to assess the association of SLI with sleep outcomes. RESULTS: SLI scores significantly predicted FAID Quantum scores (all  $p < 0.001$ ). Emergency healthcare professionals obtained on average 6h 09 min of sleep for 8h09min in bed, with irregular sleep patterns (mean SRI = 52%). Higher SLI scores were associated with reduced time in bed ( $\beta = -33.19$ ,  $p < 0.001$ ), shorter sleep ( $\beta = -18.30$ ,  $p < 0.001$ ), and lower SRI ( $\beta = -1.06$ ,  $p < 0.001$ ). SRI and total sleep time, as independent factors, together explained 48% of SLI variance (including random effects, 18% by fixed effects only). DISCUSSION: Higher shift load is associated with both reduced sleep quantity and regularity. The SLI provides a useful tool to assess recovery burden, with potential applications in optimizing shift schedules and informing fatigue risk management strategies for emergency healthcare professionals.

[Lien vers l'article](#)

### **Association Between Shift Work and Auditory-Cognitive Processing in Middle-Aged Healthcare Workers.**

Roque M, Marques T, Serrano M. *Audiol Res*. 2025 Oct 25;15(6).

BACKGROUND/OBJECTIVES: Shift work in healthcare professionals affects performance in high cognitive processing, especially in complex environments. However, the beneficial effects that working in complex environments may have on auditory-cognitive processing remain unknown. These professionals face increased challenges in decision-making due to factors such as noise exposure and sleep disturbances, which may lead to the development of enhanced auditory-cognitive resources. This study aims to investigate the associations between shift work and auditory-cognitive processing in middle-aged healthcare workers. METHODS: Thirty middle-aged healthcare workers were equally allocated to a shift worker (SW) or a fixed-schedule worker (FSW) group. Performance on a cognitive test, and in pure-tone audiometry, speech in quiet and noise, and listening effort were used to explore whether correlations were specific to shift work. RESULTS: Exploratory analyses indicated that shift workers tended to perform better in visuospatial/executive function, memory recall, memory index, orientation, and total MoCA score domains compared to fixed-schedule workers. In the SW group, hearing thresholds correlated with memory recall and memory index. In the FSW group, hearing thresholds correlated with orientation, memory index, and total MoCA score, while listening effort

correlated with naming, and speech intelligibility in quiet correlated with total MoCA scores. CONCLUSIONS: These exploratory findings suggest that shift work may be linked to distinct auditory-cognitive patterns, with potential compensatory mechanisms in visuospatial/executive functions and memory among middle-aged healthcare workers. Larger, longitudinal studies are warranted to confirm whether these patterns reflect true adaptive mechanisms.

[Lien vers l'article](#)

**Changes in sleep timing and duration during and after rotating shifts can be explained without the assumptions of the shifts of the circadian phase of sleep and loss of its circadian control.**

Putilov AA, Verevkin EG. *Sleep Breath*. 2025 Nov 5;29(6):342.

PURPOSE: Morning and night rotating shifts cause misalignment of the sleep-wake cycle in relation to the biological night. We examined whether, to explain sleep timing and duration during and after these rotating shifts, it is necessary to propose the shifts of the circadian phase of sleep and disruption of its circadian control. METHODS: A model of sleep-wake regulation was applied to simulate sleep times reported by German shiftworkers for 6 phases of the cycle of rotating shiftwork (days on and off for morning, evening, and night shifts). RESULTS: To simulate these sleep times, the assumptions of circadian phase shifts and loss of the permanent control of the circadian clocks over the sleep-wake cycle were not required. The simulations additionally predicted sleep times recently reported by Uruguayan and Norwegian shiftworkers for these 6 phases of shiftwork. CONCLUSIONS: Sleep deprivation during night shifts and irrecoverable loss of sleep prior to morning shifts can be responsible for the adverse health effects of rotating shiftwork. The extensions of the wake phase of the sleep-wake cycle before morning shifts and during night shifts can directly compromise the chronophysiological organization of the organism via disturbing the peripheral rather than central circadian clocks governing the sleep-wake cycle.

[Lien vers l'article](#)

**The association between circadian rhythm and sleep disorder on neurodegenerative parameters in shift-working healthcare workers.**

Özkan K, Barut D, Çelik H. *Chronobiol Int*. 2025 Nov 3:1-9.

Sleep quality plays a critical role in maintaining both mental and physical health. Circadian rhythm and sleep disorders involve disruptions in the alignment between internal biological rhythms and environmental or social cues. This study aims to investigate the relationship between circadian rhythm/sleep disturbances and neurodegenerative markers in shift-working healthcare professionals. This study was conducted at Harran University Medical Faculty Hospital and included 30 night-shift healthcare workers (subject group) and 29 daytime workers (control group). Data were collected via a 25-item questionnaire on sociodemographic characteristics and work conditions, administered through face-to-face interviews. Participants also completed the Pittsburgh Sleep Quality Index (PSQI) and the Morningness-Eveningness Questionnaire (MEQ). Single morning blood samples were analyzed for neurodegenerative biomarkers (a calcium-binding protein called S100B and neuron-specific enolase, NSE), and melatonin levels were assessed from a single morning blood plasma sample. Between-group comparisons were made for questionnaire scores and biomarker levels. In the subject group, pre- and post-shift biomarker levels were also compared. The relationship between sleep quality and biomarker levels was examined. The subject group included 14 females (46.7%) and 16 males (53.3%); the control group included 15 females (51.7%) and 14 males (48.3%). The median duration of shift work was 12 h (range: 8-24). Compared to the control group, the shift workers had significantly higher PSQI scores ( $p = 0.002$ ), lower MEQ scores ( $p = 0.003$ ), elevated S100B levels ( $p = 0.003$ ), and reduced melatonin levels ( $p = 0.037$ ). Within the subject group, NSE levels were significantly higher after the shift compared to pre-shift values ( $p = 0.010$ ). This study suggests that

post-shift insomnia in night-shift healthcare workers is associated with elevated NSE levels, while chronic shift work is linked to increased S100B and decreased melatonin. These findings support a potential association between circadian rhythm/sleep disturbances and neurodegenerative markers.

[Lien vers l'article](#)

### **Effectiveness of light intervention on daytime sleepiness, fatigue, and sleep quality among female shift-working nurses - A randomized control trail.**

Niu SF, Lu YY, Lin YC, Liu KF. *Appl Nurs Res.* 2025 Dec;86:152017.

**BACKGROUND:** Sleep disturbances and fatigue are prevalent among female shift-working nurses, adversely affecting their health and job performance. **OBJECTIVES:** This study aimed to evaluate the effectiveness of light intervention in reducing daytime sleepiness, fatigue, and improving sleep quality among female shift-working nurses. **METHODS:** A randomized controlled trial was conducted at a medical center in northern Taiwan with 80 female nurses assigned to either an experimental or control group. Baseline assessments included demographics, work characteristics, and measures using the Epworth Sleepiness Scale (ESS), Brief Fatigue Inventory (BFI), and Pittsburgh Sleep Quality Index (PSQI). The experimental group used a wearable light device (Re-Timer®) for 30-40 min daily over four weeks, while the control group continued their usual routines. Follow-up assessments occurred on day 14 (T1) and day 28 (T2). **RESULTS:** Results from Generalized Estimating Equations (GEEs) analysis showed significant reductions in sleepiness (ESS) at T2 and improvements in sleep quality (PSQI) at T1 and T2 in the experimental group compared to the control ( $p < .05$ ). No significant changes were found in fatigue (BFI). **CONCLUSIONS:** The study supports light intervention as a safe, low-cost, and non-pharmacological approach to reduce daytime sleepiness and enhance sleep in shift-working nurses, suggesting its integration into occupational health programs for healthcare providers.

[Lien vers l'article](#)

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[Lien vers l'article](#)

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[Lien vers l'article](#)

**Depression and daytime dysfunction centralize the fatigue-sleep cascade in island firefighters: a symptom network and Bayesian DAG study.**

Liu Y, Li Z, Xiang Q, Zhang X, Bai R, Sun C, et al. *Front Psychiatry.* 2025;16:1663957.

**BACKGROUND:** Sleep disturbances, fatigue, and psychological distress are prevalent among island-based firefighters, a high-risk occupational group. However, the interactions and mechanisms underlying these factors remain unclear. This study investigated relationships among fatigue, sleep disturbances, psychological distress, and psychological resilience using symptom network analysis and exploratory Bayesian Directed Acyclic Graph (DAG) modeling. **METHODS:** We surveyed 570 male island-based firefighters in China (cross-sectional). The PSQI, FSS, SCL-90, and CD-RISC were administered. Variables were residualized for demographic/behavioral covariates and z-standardized. We estimated an EBICglasso Gaussian Graphical Model ( $\gamma = 0.50$ ) to quantify centrality (Strength, expected influence) and predictability ( $R^2$ ). Robustness was assessed via  $\gamma = 0.25-0.75$  sensitivity, bootstrapping, and Network Comparison Tests across sleep status (sleep-disturbed [SD] vs sleep-normal [SN]) and work type (shift work [SW] vs non-shift [NS]). Exploratory Bayesian DAG modeling was conducted in SD using parallel Tabu/Hill-Climbing with BIC scoring and bootstrapped aggregation to derive a CPDAG. **RESULTS:** Sleep disturbance prevalence was 46.0% (262/570). In the full network, depression (S4) and daytime dysfunction (P7) were among the most central nodes (EI = 1.938 and 1.613), and the fatigue total (F0) showed the highest predictability ( $R^2 = 0.176$ ). In SD, hostility (S6, EI = 1.913) and anxiety (S5, EI = 1.462) emerged as potential affective hubs; tenacity (C1) was positioned upstream (Strength = 1.961; EI = -1.315) in relation to sleep and depression. Compared with SN, SD showed lower density and global strength (both  $P < 0.01$ ). Between SW and NS, overall network structure differed ( $P = 0.014$ ) whereas global strength did not ( $P = 0.694$ ). Sensitivity analyses indicated high agreement of non-zero edges and minimal fluctuations in density/global strength across  $\gamma = 0.25-0.75$ . The DAG/CPDAG suggested a potential path from subjective sleep quality  $\rightarrow$  fatigue  $\rightarrow$

depression → hostility → somatization, with C1 potentially influencing sleep and depression; directionality warrants further longitudinal validation. CONCLUSION: Depression (S4) and daytime dysfunction (P7) may serve as key nodes linking sleep and affective processes; fatigue may relate to psychological distress via sleep; and tenacity (C1) could play an upstream protective role. Sleep status and shift work may reorganize network structure without necessarily altering global connectivity. Targeted interventions may consider subjective sleep perception and psychological resilience in island-based firefighters.

[Lien vers l'article](#)

### **Neural correlates of shift work in nurses: Alterations in cortical gyrification and functional connectivity.**

Lu L, Zhu L, Jiang N, Xia Y, Zhang Y, Li J, et al. *Sleep Med.* 2025 Dec;136:106836.

OBJECTIVES: Shift work among nurses is an indispensable part of healthcare. However, it may be accompanied by circadian rhythm disruption. This disruption has been associated with alterations in brain structure and function, and has often been observed to co-occur with sleep disorders and psychological problems. This study aimed to elucidate the neurobiological mechanisms underlying the clinical symptoms observed in night-shift nurses, with a focus on cortical morphology and functional connectivity. METHODS: Sixty-two night-shift nurses and fifty-nine day-shift nurses were included in this study. Their cognitive function, sleep quality and psychological states were systematically evaluated. Surface-based morphometric (SBM) analysis and seed-based functional connectivity (FC) analysis were conducted based on multimodal MRI data to assess brain structural and functional differences between the two groups. RESULTS: Compared to day-shift nurses, night-shift nurses exhibited poorer sleep quality and higher levels of anxiety and depression. They also showed increased local gyrification index (LGI) in the right superior temporal gyrus (STG) extending to the superior temporal sulcus (STS), along with altered functional connectivity (FC): reduced STG-posterior cerebellum (PC) and increased STG-precuneus/cuneus connectivity. In the pooled data, higher LGI correlated with poorer sleep quality; decreased STG-PC connectivity with lower depression scores; and increased STG-precuneus/cuneus connectivity with higher anxiety scores and poorer sleep quality. CONCLUSIONS: Night-shift nurses exhibited distinct alterations in cortical gyrification and functional connectivity, highlighting the potential neural correlates of shift work. These findings elucidate the neurobiological mechanisms underlying the clinical symptoms observed in night-shift nurses, from both structural and functional aspects of the brain.

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### **The associations of shift work exposure and chronotype with sleep problems among Hong Kong nurses: results from the HKNight cohort baseline.**

Li B, Lee PMY, Huss A, Ma YTJ, Chan JW, Wing YK, et al. *BMC Nurs.* 2025 Nov 11;24(1):1386.

BACKGROUND: Shift work is often associated with poor sleep outcomes; however, findings vary among different individual chronotypes. This study aimed to investigate the associations between various shift work exposures, individual chronotypes, and scale-assessed sleep quality and insomnia among Hong Kong nurses. METHOD: The study was conducted between March 2022 and February 2023. The participants completed a self-reported online questionnaire. Sleep outcomes were assessed using the Pittsburgh Sleep Quality Index (PSQI score  $\geq 6$  indicates poor sleep quality) and the Insomnia Severity Index (ISI score  $\geq 8$  indicates insomnia). Chronotype was measured using the Munich Chronotype Questionnaire. Multivariate ordinal logistic regression models were used to estimate the associations. RESULTS: We recruited 718 full-time nurses and 208 daytime office workers. Compared with daytime office workers, night shift nurses had significantly greater odds of having a PSQI score  $\geq 6$  (adjusted odds ratio [aOR] = 3.38, 95% CI: 2.37–4.81) and an ISI score  $\geq 8$  (aOR = 1.69, 95% CI: 1.18–2.43).

Additionally, workers with an evening chronotype presented greater odds of having a PSQI score  $\geq 6$  compared with those with a morning type (aOR = 1.69, 95% CI: 1.17–2.44). Among shift nurses, the odds of a PSQI score  $\geq 6$  increased with the number of night shifts worked in the previous month (P(trend) = 0.028). Furthermore, the start time of afternoon shifts demonstrated a quadratic relationship with nurses whose PSQI score was  $\geq 6$  (P(trend) <0.001). Poor mental health significantly mediated the effect of night shift work on poor sleep. CONCLUSION: Night shift work and evening chronotype were significantly associated with poor sleep quality and insomnia among Hong Kong nurses, and this association was partially mediated by poor mental health. Optimizing shift schedules (particularly afternoon timing) and enhancing mental health support may mitigate these effects. Chronotype-aligned scheduling may not improve sleep quality among nurses. SUPPLEMENTARY INFORMATION: The online version contains supplementary material available at 10.1186/s12912-025-03990-1.

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### **Altered cortical myelination based on gray-to-white matter signal intensity contrast in shift workers.**

Lee J, Kim Y, Lee J, Choi JY, Lee W. *Brain Struct Funct.* 2025 Nov 20;230(9):179.

Shift work has been associated with various adverse health outcomes, particularly those involving cognitive function and mental health. However, the neurobiological mechanisms linking shift work to these outcomes remain poorly understood. This pilot study aimed to examine the effects of shift work on cortical gray-to-white matter signal intensity contrast (GWC), an indirect marker of intracortical myelin content, through vertex-wise cortical analysis. Structural magnetic resonance imaging (MRI) data were obtained from 33 shift workers and 79 day workers. Vertex-wise cortical analysis was performed to identify regions with significant group differences in GWC, controlling for age and sex. Shift workers demonstrated significantly elevated GWC in several cortical regions implicated in cognitive function and emotional regulation, including the superior frontal gyrus, caudal middle frontal gyrus, inferior parietal lobule, lingual gyrus, and cuneus. Elevated GWC was also identified in regions strongly linked to certain psychiatric disorders. These findings offer preliminary evidence of structural brain alterations associated with shift work, suggesting potential neural pathways underlying the cognitive and mental health challenges experienced by shift workers. Further longitudinal research is warranted to validate these results and inform targeted interventions aimed at mitigating neurological and psychological risks related to shift work.

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### **Association between daily long working hours and actigraphic sleep, vigilance, blood pressure and psychological responses: a 10-day observational study among Japanese daytime workers.**

Ikeda H, Kubo T, Matsumoto S, Izawa S, Nishimura Y, Liu X. *Occup Environ Med.* 2025 Dec 3;82(10):476-84.

OBJECTIVES: This study examined the association between daily long working hours (LWHs) and diverse health-related outcomes, using objective and subjective measures. It further evaluated the specific durations of daily LWHs that may be considered inappropriate in cases with adverse health effects. METHODS: 98 employees participated in a 10-day observational study. Participants self-reported their daily working hours, subjective states and performed the measurement of blood pressure (BP) and psychomotor vigilance test (PVT) immediately on waking and before bedtime. Objective sleep was recorded nightly using actigraphy. Linear mixed model (LMM) analysis was performed. RESULTS: LWHs were significantly associated with higher systolic BP ( $\beta=0.65$ ), greater fatigue ( $\beta=1.79$ ) before bedtime, shorter total sleep time (TST;  $\beta=-0.09$ ) and higher systolic BP ( $\beta=0.76$ ) on waking (all  $p<0.05$ ). Reduced TST was significantly linked to slower PVT reciprocal response time ( $\beta=0.03$ ), higher lapse ( $\beta=-1.10$ ) and greater sleepiness ( $\beta=-0.20$ ) after waking (all  $p<0.05$ ). Categorical

LMM analysis revealed that working >12 hours was significantly associated with increased fatigue before bedtime, whereas working >13 hours significantly reduced TST compared to working ≤9 hours. Sleeping <6 hours caused significantly poorer PVT outcomes, and sleeping <5 hours caused significantly stronger sleepiness after waking than sleeping ≥7 hours. CONCLUSIONS: Daily LWHs and consequent reductions in sleep duration were associated with adverse outcomes. These findings underscore the importance of daily management of work hours and adequate sleep duration to prevent excessive workload and promote recovery from occupational demands.

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### **Letter to the Editor: Prefrontal cortex hypoactivation in response to sleep-related pictures in shift workers.**

Hassan ST, Rizvi A, Haider F. *Brain Struct Funct.* 2025 Nov 22;230(9):181.

[Lien vers l'article](#)

### **Sleep-Related Factors in Shift Workers: A Cross-Sectional Cohort Pilot Study to Inform Online Group Therapy for Insomnia.**

Grünberger T, Höhn C, Schabus M, Laireiter AR. *Int J Environ Res Public Health.* 2025 Nov 6;22(11).

Shift workers face a heightened risk of insomnia. Recent research has yielded promising insights, but further progress is necessary to better treat insomnia in this group. The present pilot study evaluates how different characteristics impact sleep in shift workers to develop an innovative therapeutic approach. An online survey was administered to an ad hoc sample of N = 225 (112 shift workers), and correlations were calculated between sleep variables and specific characteristics (e.g., psychological impairment, personality traits, sleep-related behavior, attitudes towards sleep and shift work). Group differences between good/poor sleepers and day/shift work were determined using Mann-Whitney U-tests and Kruskal-Wallis H-tests. Regression was used to identify appropriate predictors. All factors (except perfectionism, chronotype, and importance of sleep) yielded significant results in both correlations and group differences (good/poor sleepers). The two groups of day/shift workers showed only minor differences. Dysfunctional beliefs about sleep, pre-sleep arousal, and depression were identified as predictors of poorer sleep. We conclude that interventions on psychological constraints (anxiety and depression), personality traits (anxiety, concern, emotional instability, and tension), social integration, sleep-related factors (dysfunctional beliefs, especially cognitive pre-sleep-arousal, sleep hygiene) and the attitude toward shiftwork, can replace those on regularity and will build an innovative therapy for shift workers on this basis. Once the newly developed treatment manual is finalized, its efficacy will be assessed through a randomized controlled trial.

[Lien vers l'article](#)

### **Fatigue and Associated Factors Among Intern Doctors in Bangladesh: A Cross-Sectional Study.**

Dey S, Kairi TK, Khan MH, Rahman S, Hossain I. *Health Sci Rep.* 2025 Dec;8(12):e71620.

BACKGROUND AND AIMS: Fatigue among health professionals can induce medical errors and adversely affect patient safety and well-being. This cross-sectional study assessed fatigue and its associated factors among intern physicians in Bangladesh. METHODS: This cross-sectional study was conducted among 350 intern physicians of three medical college hospitals in Bangladesh. A self-administered questionnaire consisting of socio-demographic details, work-related questions, and the Chalder Fatigue Scale was used. RESULTS: Among the participants, 61.1% were female, and the mean age was  $24.86 \pm 1.03$  years. Most (53.1%) interns resided in a hostel, and 18.6% were married. According to the Chalder Fatigue Scale mean fatigue score was  $11.39 \pm 6.86$ . Mean physical and mental fatigue was

7.58 ± 4.57 and 3.78 ± 2.85, respectively. In bimodal scoring, the prevalence of fatigue was 39.1%. Fatigue was significantly associated with department posted ( $p = 0.015$ ), work hours ( $p = 0.008$ ), night shifts in the last 1 month ( $p = 0.014$ ), sleep duration ( $p < 0.001$ ), relaxation time ( $p < 0.001$ ), and involvement in academic activity ( $p = 0.041$ ). CONCLUSIONS: Fatigue prevalence was high among intern physicians in Bangladesh, and it was multifactorial in origin. The high prevalence of fatigue among intern physicians in Bangladesh underscores an urgent need for institutional interventions. Practical strategies such as regulating work hours, ensuring mandatory rest periods, providing fatigue management training, and promoting better sleep and relaxation environments could substantially mitigate fatigue.

[Lien vers l'article](#)

### **The Effect of Nurse-Led Self-Management Program on Psychomotor Vigilance and Sleep of Nurses Working Night Shifts: A Randomised Controlled Trial.**

Çolak M, Esin MN. *Int J Nurs Pract.* 2025 Dec;31(6):e70076.

AIM: The aim of this study was to examine the effect of a nurse-led self-management program on psychomotor vigilance and sleep of nurses working on the night shift. BACKGROUND: Psychomotor performance and sleep quality of nurses working night shifts deteriorate due to disruption in the sleep-wake cycle. This situation negatively affects employee health and patient safety due to errors in medical practices. METHODS: This randomised controlled trial was conducted between October 2021 and April 2022. The study sample consisted of 52 nurses. Within the scope of the nurse-led self-management program, the nurses in the experimental group underwent an 8-week intervention that included health training, incentives, individual consultancy and reminders. Data were collected before the intervention, after the intervention and at the third month using the Descriptive Characteristics Form, Psychomotor Vigilance Test, Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS). RESULTS: After an 8-week intervention, there was a statistically significant decrease in the mean number of lapses, PSQI total and subjective sleep quality, sleep duration, sleep latency, daytime dysfunction subscale scores and ESS total scores in the intervention group compared to the control group. CONCLUSIONS: Nurse-led self-management program can improve the psychomotor performance and sleep of nurses working night shifts. TRIAL REGISTRATION: The study protocol has been registered at ClinicalTrials.gov (Identifier Code: NCT05185466; January 2021).

[Lien vers l'article](#)

### **Improving sailor's amount and efficiency of sleep in two-section watchkeeping schedules: a cluster randomized trial study.**

Abendroth J, Röttger S, Giesche M, Jacobsen T, Matsangas P, Shattuck NL. *Sleep.* 2025 Nov 4.

STUDY OBJECTIVES: The present study aimed at comparing sailors' amount and efficiency of sleep in two two-section watchkeeping schedules, i.e., the traditional 6/6 and the 7-5-5-7. Intention for the latter schedule was to align the major sleep episodes with biologically driven nocturnal sleep patterns. METHODS: Using a parallel cross-over design with cluster randomized trials, forty-eight crew members from two vessels of the German Navy participated in a field trial with two one-week underway periods varying the watchkeeping schedule in randomized order. Sleep minutes and sleep efficiency were assessed on the participant level using wrist-worn actigraphs and analyzed for sleep episodes occurring during the day (i.e., between 10 a.m. and 10 p.m.) and during the night (i.e., between 10 p.m. and 10 a.m.). RESULTS: Nighttime sleep duration was 14 minutes longer and with 10% higher sleep efficiency in the 7-5-5-7 schedule compared to the 6/6. In contrast, daytime sleep duration was 40 minutes longer in the 6/6 with no statistically significant differences in sleep efficiency between the two watchkeeping schedules. CONCLUSIONS: Our results suggest that amount and efficiency of nighttime sleep can be enhanced with the 7-5-5-7. Hence, even in shift schedules with restricted

periods for rest, recuperation can be improved by more closely aligning watchkeeping schedules to the innate human diurnal circadian cycles.

[Lien vers l'article](#)

**How many monthly nighttime-sleep opportunities are optimal for recovery from fatigue among shift-working nurses? A 1-month sleep log observational study to test anchor nighttime sleep in Japan.**

Kubo T, Ikeda H, Izawa S, Nishimura Y. *BMJ Public Health*. 2024 Dec;2(2):e001438.

**BACKGROUND:** Given that nighttime sleep has more recuperative power than daytime sleep, ensuring the former is important to recovery from work, especially for shift-working nurses. In this 1-month sleep log study, we preliminarily examined how the number of monthly nighttime-sleep opportunities relates to fatigue-related outcomes among shift-working nurses. **METHODS:** 526 nurses were required to record their daily sleep duration immediately after waking from sleep for 1 month. We analysed the associations among the four sleep groups (ie,  $\leq 12$ , 13-19, 20-24 and  $\geq 24$  nighttime-sleep opportunities per month) and fatigue-related outcomes. A one-way analysis of covariance or generalised linear mixed model (factor: sleep group) was conducted using R (version 4.2.2.) to test the association. **RESULTS:** Significant differences among the four sleep groups were obtained using the excessive fatigue symptom inventory (EFSI), Pittsburgh sleep quality index (PSQI) and the numbers of near-miss incidents. Moreover, significant linear trends were observed in the EFSI and PSQI scores. **CONCLUSIONS:** Shift-working nurses who experienced 12 or fewer monthly nighttime-sleep opportunities showed worse fatigue-related outcomes than those who had sufficient monthly nighttime-sleep opportunities. Therefore, more attention should be paid to ensuring monthly nighttime-sleep opportunities when creating a shift schedule.

[Lien vers l'article](#)

### HA comme facteur de risque

#### Généralités et prévention

#### Clinician's Health?

Agrawal R. *J Assoc Physicians India*. 2025 Nov;73(11):84-6.

Usually, people are under stress because of their own health issues, but clinicians are under stress because of others' (patients') health, and for them, they put their own health at stake. Here, by clinician, we mean every specialty of healthcare professionals (HCPs), physicians and surgeons. Clinicians are precious and their health is equally important. Unfortunately, most of the clinicians are not in good health because of the challenging and demanding needs of the profession, such as reading a lot while dealing with difficult cases and competition to cope with others. Most of the clinicians have a false belief that they are doing well, so they will not get any problem, or they themselves will take care of their health, and another very important fact is that most of them have little faith in their own colleagues, and this bitter truth must be accepted. Doctors need their own clinicians because despite their medical knowledge, they face a unique set of challenges such as exposure to high-stress, long working hours, altered sleep due to shift duties and irregular eating habits and non-nutritious diet, less time for self-care, and imbalance between family, professional and social life as well as stigma around mental health and treatment are sufficient to neglect their own health. They must have a sensitive physician to manage their health, like their patients, as family members of the doctors do not know whom to contact in case of emergency or the doctor's ill health. Doctors are not immune to health issues such as mental health, physical strain, burnout or infectious diseases, and various chronic diseases. Having their own doctor helps ensure they receive the unbiased healthcare they need, allowing them to continue caring for others effectively. Doctors play an essential role in maintaining the health of society, yet their own health is often compromised due to the stress of the demanding profession. Chronic conditions such as obesity, diabetes, hypertension (HT), coronary artery disease (CAD), thyroid disorders, and cancer are highly prevalent among HCPs, and the reasons are long working hours, sleep deprivation, emotional strain, and lack of time for self-care. By prioritizing regular health check-ups, stress management, physical activity, and a healthy working environment, and a balance between social, familial, and professional life, doctors can improve their own health. The key takeaway is adopting a holistic approach to doctors' well-being, which includes physical, mental, and emotional support, combining individual responsibility with institutional backing. Doctors should be empowered with the tools, resources, and cultural support they need to prioritize their own health to make society healthy. Large-scale surveys are required to find out the exact prevalence of various acute and chronic conditions among HCPs and how they are tackling them. Note: By clinician, we mean every specialty of doctors (HCPs), physicians, and surgeons. Terms such as physician, clinicians, doctors, and HCPs are used synonymously in this write-up.

[Lien vers l'article](#)

#### **Adverse health outcomes among migrant workers and transnational families in the Asia-Pacific: a systematic review and meta-analysis.**

Chia-Yin Lin R, Lau K, Mackey K, Matthews NR, Selvamani M, Beatriz M, et al. *Lancet Reg Health West Pac*. 2025 Nov;64:101720.

**BACKGROUND:** Labour migration is a growing global phenomenon, with migrant workers known to be more likely to experience exploitative and precarious work, impacting their health. Despite hosting over 27 million international migrant workers, the Asia-Pacific region remains underrepresented in global health evidence, limiting the development of targeted, region-specific health interventions. This study aims to investigate the health status of migrant workers and their transnational families in the Asia-Pacific region. **METHODS:** We conducted a systematic review and meta-analysis (PROSPERO: CRD42024528561) of primary studies published between Jan 1, 2013, and April 1, 2024. We searched

MEDLINE, Embase, PsycINFO, and Ovid Global Health for studies reporting work-related morbidity and mortality among international migrant workers and their transnational families in the Asia-Pacific region. A narrative synthesis identified occupational risks; a meta-analysis estimated pooled prevalence of morbidity among migrant workers and relative risks compared to local workers. FINDINGS: Of 2877 studies identified, 54 met inclusion criteria, including 38 eligible for meta-analysis, encompassing 86,620 individuals across 17 Asia-Pacific countries. Among migrant workers (n = 64,172), 88.4% experienced occupational injuries and illnesses including work-related injuries, pesticide poisoning symptoms and respiratory diseases (n = 45,661), with 75% of migrant workers in this large dataset working in high-risk sectors such as manufacturing, construction, and services (including drivers and restaurant workers). 3.8% reported symptoms of mental health disorders such as anxiety and depression (n = 1975), and 3.8% had musculoskeletal disorders (n = 1973). The pooled prevalence of at least one work-related morbidity was 37% (95% CI: 27-47; I (2) = 99.0%), with a pooled relative risk of 1.29 (95% CI: 1.10-1.52; I (2) = 47.4%) compared with local workers. Among transnational families left behind in the migrant worker's country of origin (n = 22,448), 50.1% reported mental health issues (n = 1520), and 31.4% experienced undernutrition (n = 954). Key contributing factors to poor health outcomes of migrant workers included long working hours, workplace hazards, precarious working conditions, and healthcare access barriers. INTERPRETATION: Migrant workers in the Asia-Pacific face substantial risks of a wide range of occupational injuries and illnesses. Although some studies support the "healthy migrant effect," this advantage clearly diminishes over time due to cumulative exposure to occupational and structural stressors. Strengthening occupational safety, regulating working hours, and improving healthcare access, are urgent priorities for countries hosting large migrant worker populations and employers of migrant workers. FUNDING: Ministry of Education, Taiwan; Wellcome Trust (318501/Z/24/Z and 335954/Z/25/Z); UK Medical Research Council (MR/W006677/1); UK National Health Institute for Health and Care Research (NIHR209895); the 'la Caixa' Foundation (LCF/PR/SP21/52930003).

[Lien vers l'article](#)

### **Evaluation of occupational safety and influencing factors among nurses working in internal medicine clinics.**

Kocatepe V, Yildirim D, Türkmenoğlu A. *BMC Nurs.* 2025 Nov 27.

BACKGROUND: Healthcare workers, particularly nurses in internal medicine clinics, are exposed to specific occupational hazards such as infection risk, long working hours, and musculoskeletal problems. This study aims to evaluate the occupational safety of nurses working in internal medicine clinics and the factors influencing it. METHODS: The descriptive and analytical cross-sectional study was conducted with 300 nurses working in internal medicine clinics at a hospital in İzmir. The data were collected using a Participant Information Form and the Occupational Safety Scale (OSS) for Healthcare Personnel Working in Hospitals. The prediction of the OSS for Healthcare Workers in Hospitals Total Score among nurses, as well as the factors of Verbal Violence, Working Environment Equipment and Design, Quality of Personal Protective Equipment (PPE), and Equipment Used, were evaluated using multiple linear regression analysis. RESULTS: The nurses' mean age was  $29.6 \pm 4.7$  years. A total of 55.3% (n = 166) of the nurses reported either that they had not read the regulation on ensuring patient and worker safety in healthcare institutions or that they were unaware of the regulation itself (6%, n = 18). The variables of Working Environment Equipment and Design, Quality of PPE, and Equipment Used were found to be statistically significant, explaining 29.8% of the variance in the OSS for Healthcare Workers in Hospitals total scores ( $p < 0.05$ ). CONCLUSION: Nurses perceived occupational health and safety as moderately adequate. Among the examined variables, Working Environment Equipment and Design, Quality of PPE, and Equipment Used were found to significantly influence nurses' occupational health and safety. These findings underscore the need for targeted interventions to improve clinical workspace design, ensure high-quality PPE, and optimize equipment use, thereby enhancing nurses' safety and well-being. [Lien vers l'article](#)

### Activités physiques

#### Risk factors and interaction effects in recurrent low back pain.

Wang L, Mao Z, Huang H, Zhao Y, Qiu X, Lan B, et al. *Am J Transl Res*. 2025;17(10):7700-16.

**OBJECTIVES:** To identify risk factors for low back pain (LBP) recurrence and develop a clinically applicable predictive model, with emphasis on interactions between key factors. **METHODS:** A retrospective cohort study was conducted, including 216 patients with newly-diagnosed LBP as the derivation cohort (January 2023-June 2024) and 46 as the external validation cohort (July-December 2024). Independent risk factors were screened through univariate, least absolute shrinkage and selection operator (Lasso), and multivariate logistic regression. Interaction effects were evaluated. A nomogram was constructed and validated. **RESULTS:** The 1-month recurrence rate was 33.8%. Independent risk factors for recurrence included elevated white blood cell (WBC) count (OR=4.555,  $P<0.001$ ), anxiety (OR=25.256,  $P<0.001$ ), working  $>8$  h/day (OR=8.748,  $P<0.001$ ), and elevated interleukin-1 $\beta$  (IL-1 $\beta$ ) (OR=3.356,  $P=0.008$ ). Significant multiplicative interactions were observed between body mass index (BMI) and working hours, WBC and anxiety, and anxiety and working hours (all  $P<0.05$ ). A positive additive interaction between WBC and anxiety was identified (RERI)=3.928). The nomogram demonstrated excellent discrimination (area under the receiver operating characteristic curve (AUC)=0.906 in the derivation cohort; 0.902 in the validation cohort), good calibration (Hosmer-Lemeshow  $P=0.06$ , 0.61), and optimal net benefit. **CONCLUSION:** Elevated WBC, IL-1 $\beta$ , anxiety, and prolonged working hours predict LBP recurrence, with notable interactions among these factors. The proposed nomogram aids personalized risk stratification and informs work-related and psychological interventions.

[Lien vers l'article](#)

#### Synergy and Attenuation of Work-Related Factors in Musculoskeletal Disorders: The Combined Risk Based on Data from the Korean Working Conditions Survey.

Lee ES, Kim MH, Kang D, Lee YH, Kim YJ, Kim SY, et al. *Medicina (Kaunas)*. 2025 Nov 2;61(11).

**Background and objectives:** Musculoskeletal disorders (MSDs) account for more than 60% of compensated occupational diseases in Korea. Despite this burden, benchmarks of standardized ergonomic exposure and evidence on the combined effects of risk factors remain limited. This study aimed to construct a body part-specific ergonomic job exposure matrix (JEM) and evaluate the independent and interactive effects of ergonomic, demographic, and work-related factors. **Materials and Methods:** We analyzed the data of 210,500 workers from the 2nd-6th Korean Working Conditions Survey (2009-2020). A JEM for arms/neck, back, and legs was developed and validated ( $\kappa \geq 0.79$ ). Logistic regression models estimated adjusted odds ratios (aORs), and additive interactions were assessed using relative excess risk due to interaction (RERI), attributable proportion (AP), and the synergy index (SI). **Results:** High ergonomic exposure was strongly associated with MSDs across all body regions (aORs 2.3-2.5). Age  $> 45$  years, long working hours ( $>52$  h), and high job strain also increased risks (aORs 1.4-2.3). On the additive scale, ergonomic risk combined with older age showed consistent synergy (RERI up to 1.5;  $SI > 1.5$ ), whereas combinations with long working hours or job strain showed attenuation (RERI  $< 0$ ;  $SI < 1$ ). Women reported higher crude prevalence but lower adjusted odds (aOR  $\approx 0.9$ ). **Conclusions:** This nationally representative study demonstrates that ergonomic risk, age, long working hours, and job strain are major determinants of MSDs. The validated Korean JEM provides a standardized tool for surveillance and compensation. However, the cross-sectional design limits causal inference. Future longitudinal research with objective exposure measures is needed to strengthen causal inference and guide tailored prevention.

[Lien vers l'article](#)

### Autres pathologies

Aucun article dans ce bulletin.

### Cancers

Aucun article dans ce bulletin.

### Risque routier, accidentologie

#### **"I'm Not Right to Drive, but I Drove out the Gate": Personal and Contextual Factors Affecting Truck Driver Fatigue Compliance.**

Casey GJ, Miles-Johnson T, Stevens GJ. *Int J Environ Res Public Health*. 2025 Nov 14;22(11).

Truck drivers experience an elevated risk of being involved in a fatigue-related crash or incident. In Australia, approximately one third of fatal truck crashes are fatigue-related. Various contextual factors are known to increase truck crash risk, including long working hours, irregular schedules, delays while loading and unloading and limited access to suitable rest areas. Studies investigating personal factors affecting Australian truck drivers' attitudes and compliance with fatigue-management requirements, however, are lacking. Semi-structured interviews were conducted with Australian truck drivers and transport managers (N = 44) to determine how personal and contextual factors influence their intention to comply with fatigue regulation. The findings indicate that personal factors such as familial pressure, financial viability as well as inflexible enforcement and its personal consequences may influence fatigue-related health risks and compliance behaviours. This includes contextual factors such as work scheduling, training and new risk monitoring technologies. It is argued that government, transport industry peak bodies, managers, unions and truck drivers should work together to co-develop fatigue management strategies that account for personal factors likely to influence truck drivers' intentions regarding fatigue compliance. This will support them to engage in safer and healthier fatigue management practices.

[Lien vers l'article](#)

### RPS et QVT

#### **Association between occupational health literacy and occupational stress among workers in metal mining, metallurgy and non-metallic manufacturing in Gansu, China.**

Zhang H, Zhao W, He Y, Wu J. *BMC Public Health*. 2025 Nov 25.

Background: Occupational stress has become a significant public health concern, and health literacy (HL) is increasingly recognized as a potential influencing factor. However, most existing studies focus on knowledge-intensive occupational groups such as healthcare and education, while research on the relationship between occupational health literacy (OHL) and occupational stress in traditional industrial settings, such as factories and mines, remains limited. Methods: The study sample comprised 3,772 employees from the metal mining, metallurgy, and non-metallic mineral products industries located in Gansu Province. OHL was evaluated using the Individual Questionnaire of the National Key Population Occupational Health Literacy Monitoring Survey (IQ-NKPOHLMS), while occupational stress was measured via the Core Occupational Stress Scale (COSS). The analytical methods employed

encompassed logistic regression modeling, restricted cubic spline (RCS) analyses, and subgroup analyses. These approaches were utilized to evaluate the association between occupational health literacy (OHL) and occupational stress, investigate potential dose-response relationships, and assess interaction effects. Results: Among participants, 55.6% exhibited adequate levels of occupational health literacy. Logistic regression analyses indicated that each one-point increment in OHL (continuous variable) was associated with a 2% reduction in the odds of experiencing occupational stress (OR = 0.981, 95% CI: 0.976–0.985). Furthermore, workers classified as having adequate OHL demonstrated a 31.6% lower likelihood of occupational stress compared to those with inadequate OHL (OR = 0.684, 95% CI: 0.589–0.793). The RCS analysis substantiated a significant linear dose-response relationship between OHL and occupational stress ( $p$  for nonlinearity = 0.2715). Subgroup analyses revealed that weekly working hours significantly moderated this association, with the protective effect of OHL being more pronounced among workers with shorter working hours; this interaction was statistically significant ( $p$  for interaction < 0.001). Conclusion: Adequate occupational health literacy is strongly linked to a lower risk of occupational stress, especially among employees who work fewer hours. This indicates that improving occupational health literacy should be a key part of workplace health initiatives, particularly for those involved in prolonged, demanding jobs. Additionally, strategies such as encouraging reasonable work hours, minimizing excessive overtime, and implementing focused occupational health literacy programs are advised to comprehensively enhance workers' mental well-being.

[Lien vers l'article](#)

#### **Motivations and barriers to choosing an interventional cardiology path in Latin American women.**

Corna G, Albanez-Lopes AM, Cataldo P, Cisneros P, Villalba L, Manavella B, et al. *Arch Cardiol Mex.* 2025 Dec 3.

**OBJECTIVE:** To investigate the motivations and barriers to choosing interventional cardiology (IC) among women from Latin America. **METHOD:** A questionnaire from the European association of Percutaneous Cardiovascular Interventions Women's Committee was distributed to Latin American cardiologists from March to April 2024, inquiring about social and professional profiles, and reasons for choosing or not IC. **RESULTS:** Three hundred and seven individuals (134 [44%] women and 173 [56%] men) from 17 different Latin American countries responded to the survey. Compared to men, women were younger (46 vs. 29% between 18 and 35 years old,  $p < 0.0001$ ), less frequently married (48 vs. 50%,  $p = 0.03$ ), and more frequently childless (68 vs. 32%,  $p < 0.001$ ). One hundred and fifty (49%) respondents were interventional cardiologists, 51 (34%) women, and 99 (66%) men ( $p = 0.008$ ). The main reason for choosing IC was "because it is my passion" (88 vs. 91%,  $p = 0.48$ , respectively). The three most frequent reasons for not choosing IC in women were, in order: concerns about radiation, on-calls, long working hours, and personal preference. **CONCLUSION:** The primary motivation for women choosing IC is their passion for the field. Several barriers deter many of them from choosing it as a career path, including concerns about radiation exposure and on-calls with long working hours, emphasizing on the necessity of enhancing education on radiation safety and developing new strategies to preclude and support women in IC in Latin America.

[Lien vers l'article](#)

#### **Burnout, anxiety, and resilience among nurses during wartime: evidence from a cross-sectional study.**

Shalom T, Ogni L, Freud T, Bashkin O. *BMC Nurs.* 2025 Nov 21;24(1):1424.

**BACKGROUND:** The Iron Swords War that began in October 2023 created unprecedented challenges for Israeli healthcare workers. Nurses, who are particularly vulnerable to occupational stressors, face heightened risks of burnout and psychological distress during wartime. This study examined the

relationship between personal resilience and burnout among hospital nurses working during the Iron Swords War in Israel and assessed the prevalence of burnout, anxiety, and stress while identifying factors associated with lower burnout. **METHODS:** In this cross-sectional study, an electronic questionnaire was distributed to hospital nurses working in Israeli hospitals to measure demographic characteristics; resilience, the Connor-Davidson 10-item Resilience Scale (CD-RISC-10); anxiety and stress, the Depression, Anxiety, and Stress Scale (DASS-21); and burnout, the Copenhagen Burnout Inventory (CBI). Mediation analysis was conducted via the PROCESS macro to examine the relationships among anxiety, stress, resilience, and burnout. **RESULTS:** Of the 465 nurses who completed the survey, 80.6% reported extremely severe anxiety, whereas 35.4% reported extremely severe stress. While 53.3% reported moderate burnout levels, only 7.7% reported high burnout. The mean  $\pm$  standard deviation resilience score was  $20.4 \pm 8.2$ . Factors associated with elevated anxiety and stress included night shift work, working  $> 180$  h/month, and having family members in military service during the war. The results of the mediation analysis revealed that stress partially mediated the relationship between anxiety and burnout ( $B = 0.3210$ ,  $p < 0.001$ ). Resilience was significantly and negatively correlated with burnout ( $r = -0.282$ ,  $p < 0.01$ ), suggesting an inverse association. Multiple regression revealed that sex, resilience, anxiety, and stress were significantly associated with burnout, explaining 48.1% of the variance. The 8.6% response rate represents a major limitation affecting generalizability, and findings should be interpreted as preliminary insights rather than definitive population estimates. **CONCLUSIONS:** Despite extremely high levels of anxiety and stress, nurses maintained moderate burnout and resilience levels during wartime. The role of resilience and the mediating role of stress highlight the importance of targeted interventions focused on stress management and resilience building, particularly for high-risk groups. **CLINICAL TRIAL NUMBER:** Not applicable.

[Lien vers l'article](#)

### **Association of work-family conflict with psychological distress and mental disorder among Japanese working women.**

Chamnanchang S, Ishimaru T, Ohkubo N, Okawara M, Hirashima K, Eguchi H, et al. *J Occup Health*. 2025 Jan 7;67(1).

**OBJECTIVES:** The current study aimed (1) to examine the associations between bidirectional work-family conflict, comprising work-to-family conflict (WFC) and family-to-work conflict (FWC), and two mental health outcomes: psychological distress and mental disorder; and (2) to examine the associations between demographic variables and work-family conflict among Japanese working women. **METHODS:** A cross-sectional online survey was conducted among 19 652 Japanese working women in June 2024. Psychological distress was assessed using the Kessler Psychological Distress Scale, and mental disorder was identified using a screening question about medical consultation or treatment. Work-family conflict was measured using the Work and Family Conflict Scale. Multivariable logistic regression analyzed associations between work-family conflict and mental health outcomes, whereas univariate linear logistic regression examined the associations between demographic variables and work-family conflict. **RESULTS:** Among participants, 9.5% reported psychological distress, and 5.3% reported receiving consultation or treatment for mental disorder. Severe WFC and FWC were significantly associated with psychological distress (WFC: odds ratio [OR] 4.94, 95% CI, 4.19-5.81; FWC: OR 3.44, 95% CI, 2.94-4.01; both  $P < .001$ ) and mental disorder (WFC: OR 1.76, 95% CI, 1.46-2.12; FWC: OR 1.69, 95% CI, 1.40-2.04; both  $P < .001$ ). Long working hours and caregiving responsibilities were strongly associated with WFC and FWC. **CONCLUSIONS:** Work-family conflict is significantly associated with adverse mental health among Japanese working women. Organizations need to address this issue in the workplace, particularly regarding flexible work arrangements and caregiving support, to promote the mental well-being of working women.

[Lien vers l'article](#)

## Santé psychique

### Occupational burnout among obstetrics and gynaecology residents: a systematic review.

Szcześniewska S, Zaręba K, Zgliczyński WS, Ciebiera M, Feduniw S. *Front Public Health*. 2025;13:1666659.

**INTRODUCTION:** Occupational burnout, a complex condition frequently affecting highly committed individuals, is characterized by persistent emotional, mental, and physical exhaustion. The demanding nature of specialization in obstetrics and gynaecology makes residents particularly vulnerable to burnout. This study aimed to evaluate the mental and emotional well-being of residents during their specialization in obstetrics and gynaecology, as well as their susceptibility to stressors and the resulting burnout. **MATERIALS AND METHODS:** A systematic literature review was conducted in accordance with PRISMA guidelines. The PubMed, Web of Science, and Cochrane Library databases were searched to identify peer-reviewed articles examining the mental and emotional well-being of physicians during their residency in obstetrics and gynaecology their exposure to stressors and associated risk of burnout. Studies published before 30 August 2024 were included in the review. **RESULTS:** A total of 16 studies were analysed, revealing that the prevalence of burnout among obstetrics and gynaecology residents ranges from 46 to 86%. The studies indicate that residency in obstetrics and gynaecology significantly increases the risk of burnout, driven by factors such as psychological stress, young age, long working hours, female gender, and lack of support. **CONCLUSION:** The persistently high incidence of burnout among obstetrics and gynaecology residents underscores the urgent need for targeted preventive measures and enhanced mental health support within this field. Immediate action is required to address these issues by challenging stigma, reforming residency structures, improving both workplace and personal environments, and implementing comprehensive strategies to support residents' mental well-being, with particular attention to emotional exhaustion, depression, and suicidal ideation. **SYSTEMATIC REVIEW REGISTRATION:** <https://www.crd.york.ac.uk/PROSPERO/view/CRD420251067594>, identifier CRD420251067594.

[Lien vers l'article](#)

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the relationship between anxiety and burnout ( $B = 0.3210$ ,  $p < 0.001$ ). Resilience was significantly and negatively correlated with burnout ( $r = -0.282$ ,  $p < 0.01$ ), suggesting an inverse association. Multiple regression revealed that sex, resilience, anxiety, and stress were significantly associated with burnout, explaining 48.1% of the variance. The 8.6% response rate represents a major limitation affecting generalizability, and findings should be interpreted as preliminary insights rather than definitive population estimates. CONCLUSIONS: Despite extremely high levels of anxiety and stress, nurses maintained moderate burnout and resilience levels during wartime. The role of resilience and the mediating role of stress highlight the importance of targeted interventions focused on stress management and resilience building, particularly for high-risk groups. CLINICAL TRIAL NUMBER: Not applicable.

[Lien vers l'article](#)

### **Association of work-family conflict with psychological distress and mental disorder among Japanese working women.**

Chamnanchang S, Ishimaru T, Ohkubo N, Okawara M, Hirashima K, Eguchi H, et al. *J Occup Health*. 2025 Jan 7;67(1).

OBJECTIVES: The current study aimed (1) to examine the associations between bidirectional work-family conflict, comprising work-to-family conflict (WFC) and family-to-work conflict (FWC), and two mental health outcomes: psychological distress and mental disorder; and (2) to examine the associations between demographic variables and work-family conflict among Japanese working women. METHODS: A cross-sectional online survey was conducted among 19 652 Japanese working women in June 2024. Psychological distress was assessed using the Kessler Psychological Distress Scale, and mental disorder was identified using a screening question about medical consultation or treatment. Work-family conflict was measured using the Work and Family Conflict Scale. Multivariable logistic regression analyzed associations between work-family conflict and mental health outcomes, whereas univariate linear logistic regression examined the associations between demographic variables and work-family conflict. RESULTS: Among participants, 9.5% reported psychological distress, and 5.3% reported receiving consultation or treatment for mental disorder. Severe WFC and FWC were significantly associated with psychological distress (WFC: odds ratio [OR] 4.94, 95% CI, 4.19-5.81; FWC: OR 3.44, 95% CI, 2.94-4.01; both  $P < .001$ ) and mental disorder (WFC: OR 1.76, 95% CI, 1.46-2.12; FWC: OR 1.69, 95% CI, 1.40-2.04; both  $P < .001$ ). Long working hours and caregiving responsibilities were strongly associated with WFC and FWC. CONCLUSIONS: Work-family conflict is significantly associated with adverse mental health among Japanese working women. Organizations need to address this issue in the workplace, particularly regarding flexible work arrangements and caregiving support, to promote the mental well-being of working women.

[Lien vers l'article](#)

### **Troubles cognitifs et de la vigilance**

Aucun article dans ce bulletin.

## Travail posté et de nuit facteur de risque

### Généralités et prévention

#### **The effects of taxi drivers' chronotype characteristics on daily life: Daytime sleepiness, stress, fatigue, social relationships, traffic accident experience, and general health.**

Kocoglu-Tanyer D, Bardak F, Koc E. *Chronobiol Int.* 2025 Dec 2:1-10.

This study focused on taxi drivers to investigate the relationship between chronotype characteristics and daytime sleepiness, stress, fatigue, social relationships, car accidents, and general health. This cross-sectional study was conducted between September 2024 and January 2025. The sample comprised 229 taxi drivers from two bordering provincial centers in Türkiye. Data were analyzed using one-way ANOVA (with partial eta-squared), chi-square, multiple regression, and logistic regression analyses. One in five participants (20.5%) had an evening chronotype. Participants with evening chronotypes experienced more daytime sleepiness ( $\eta(2) = .096$ ), stress ( $\eta(2) = .182$ ), fatigue ( $\eta(2) = .068$ ), and were involved in more car accidents (Cramer's  $V = .19$ ). They were also more disadvantaged in terms of social relations and overall health perception. The results showed that, when confounding factors were controlled, chronotype had an impact on daytime sleepiness, stress, fatigue, and social relationships. It was also found that work status and shift work were associated with increased fatigue and a higher incidence of car accidents. At the same time, work status was also related to high daytime sleepiness and negative social engagement. Chronotype characteristics have an impact on various variables related to traffic safety. Taxi drivers with an evening chronotype are particularly disadvantaged. The development of a chronotype-based work schedule can be considered a means to reduce levels of sleepiness, stress, and fatigue among taxi drivers, thereby improving their overall health and social relationships, and potentially preventing traffic accidents.

[Lien vers l'article](#)

#### **Occupational and Environmental Health Screening Cohort of Yangsan Korea (OEC-YK): 2012-2023.**

Kang D, Lee ES, Kim SY, Kim Y, Lee YH, Kim YJ. *Ann Occup Environ Med.* 2025 Nov;37:e32.

The Occupational and Environmental Health Screening Cohort of Yangsan Korea (OEC-YK) was established to monitor long-term health outcomes in workers and environmental high-risk citizens through systematic periodic health examinations. The cohort integrates 623,402 examination instances from 105,768 participants at Pusan National University Yangsan Hospital (2012-2023), encompassing general health checkups, occupational exposure surveillance, cancer screenings, and others including asbestos-related surveillance. Examination types included general health examination (32.4%), cancer screening (20.6%), special health examination (16.2%), night-shift work examination (16.0%), chronic disease screening (4.8%), pre-placement examinations (2.1%), and asbestos-related surveillance (3.6%). At baseline, 59.0% were male and 75.5% were aged between 20 and 59 years. Follow-up rates reached 35.0% at 1 year, 31.9% at 2 years, and 3.2% at 11 years. Notably, the inclusion of systematic asbestos examinations, combined with a national asbestos job exposure matrix, allows detailed study of long-latency occupational diseases. This large-scale longitudinal dataset supports exposure-disease linkage analysis, job-exposure integration, and time-series modeling of worker health trajectories in Korea.

[Lien vers l'article](#)

### Activités physiques

#### **Exploring the challenges and impact of work-related shoulder disorders on North American firefighters: an interpretive description.**

Osifeso TA, MacDermid JC, Berinyuy D, Szekeres M, Parikh P, Faber KJ. *Discov Public Health*. 2025;22(1):726.

**RATIONALE:** Firefighters (FFs) are exposed to physically demanding tasks that increase their risk of work-related shoulder disorders (WSDs). Despite the critical nature of their work, qualitative research remains limited in exploring the impact of WSDs on their well-being, as well as the challenges they encounter within the workplace and healthcare system. **OBJECTIVES:** To explore: (1) The impact of WSDs on the well-being and job performance of FFs, (2) The occupational health challenges encountered by FFs with WSDs during recovery. **METHODS:** A total of 14 FFs (Males = 9, Females = 5) between 26 and 63 years old experiencing WSDs were purposefully sampled by sex and geographical location. Data was collected through virtual one-on-one semi-structured interviews and transcribed verbatim. Interpretive description methodology was used, and data was analyzed using thematic analysis. **FINDINGS:** Firefighters with WSDs indicated that pain and mobility limitations significantly impaired their ability to perform critical job tasks such as lifting, reaching, and administering life-saving interventions. In their personal lives, WSDs disrupt routine activities, fitness, and family interactions. Sleep deprivation due to pain and shift work further exacerbates physical and cognitive strain, impacting their job performance. Occupationally, FFs reported lost work time, financial strain, and career setbacks due to modified duties, often leading to feelings of guilt, isolation, and diminished professional identity. Additionally, operational challenges related to poorly designed firefighting equipment and protective gear were reported to increase the risk of re-injury, particularly for female FFs and those with smaller statures. Lastly, healthcare challenges such as lack of tailored health care protocols and suboptimal intervention programs were reported. **CONCLUSION:** This study underscores the complex interplay of physical, occupational, and psychosocial factors in shaping firefighters' experiences with WSDs. This emphasizes the need for ergonomic improvements, better healthcare protocols, and psychosocial support to improve the well-being of FFs with WSDs. **SUPPLEMENTARY INFORMATION:** The online version contains supplementary material available at 10.1186/s12982-025-01131-2.

[Lien vers l'article](#)

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impacting their job performance. Occupationally, FFs reported lost work time, financial strain, and career setbacks due to modified duties, often leading to feelings of guilt, isolation, and diminished professional identity. Additionally, operational challenges related to poorly designed firefighting equipment and protective gear were reported to increase the risk of re-injury, particularly for female FFs and those with smaller statures. Lastly, healthcare challenges such as lack of tailored health care protocols and suboptimal intervention programs were reported. **CONCLUSION:** This study underscores the complex interplay of physical, occupational, and psychosocial factors in shaping firefighters' experiences with WSDs. This emphasizes the need for ergonomic improvements, better healthcare protocols, and psychosocial support to improve the well-being of FFs with WSDs. **SUPPLEMENTARY INFORMATION:** The online version contains supplementary material available at 10.1186/s12982-025-01131-2.

[Lien vers l'article](#)

### Autres pathologies

#### **Occupational consequences of osteoarthritis. A scoping review.**

Rat AC, Bazin O, Thaon I. *Joint Bone Spine*. 2025 Nov 24:106013.

**OBJECTIVE:** The objective of this scoping review was to identify the factors that are associated with the negative consequences of OA (hip, knee and hand OA) on employment. **METHODS:** The review included publications in English and French from 2000-2023. The selected articles were required to include an outcome criterion representing a negative effect of OA on employment, such as work loss, sick leave, disability pension (DP), loss of productivity, health at work, and work-life balance. **RESULTS:** The outcome criteria were grouped into 7 categories, including work participation, disability pensions (DPs), work loss or early retirement, absenteeism, productivity loss, changes in work, and expected work limitations. Factors associated with the negative consequences of OA can be categorized into characteristics of OA (symptoms, management), personal characteristics (sociodemographic and individual characteristics such as comorbidities, physical activity, representation of the disease, feelings of responsibility in its management), job characteristics (physical demands, night work, working hours, possibilities of adapting to work, and support from colleagues), environments (difficulties associated with transportation, demands of multiple roles in life, lack of information about adaptation possibilities), and adaptation strategies (e.g. changing the way in which tasks are performed, using technical aids, thinking about how to perform each movement, planning activities, receiving help, using cognitive techniques). **CONCLUSION:** Based on the results of this review, we present a framework describing the impact of factors associated with work-related difficulties in patients with OA. These factors will make it possible to develop interventions aimed at helping individuals with OA in maintaining employment.

[Lien vers l'article](#)

#### **Prevalence, incidence, and occupational risk markers of dyslipidemia in Peruvian workers.**

Ballena-Caicedo J, Zuzunaga-Montoya FE, Bustamante-Rodríguez JC, Sanchez-Tamay NM, Vásquez-Romero LEM, Loayza-Castro JA, et al. *Endocrinol Diabetes Nutr (Engl Ed)*. 2025 Dec 4:501672.

**INTRODUCTION:** Dyslipidemias are a significant risk factor for cardiovascular diseases. In Peru, nutritional transition and lifestyle changes may be contributing to an increase in the incidence of these metabolic disorders, particularly among the working population. **OBJECTIVE:** To determine the incidence of dyslipidemias and evaluate associated occupational factors in Peruvian workers. **METHODS:** A retrospective cohort study was conducted using electronic medical records from 4,200 workers attending an occupational health clinic between 2013 and 2022. Incidence rates of

hypertriglyceridemia, hypercholesterolemia, and combined dyslipidemia were calculated. Specific occupational factors (type of work, sitting time, and night shift work) were analyzed using Cox regression models adjusted for age (with splines) and sex. RESULTS: The incidence of hypercholesterolemia (87.22 cases per 1,000 person-years; 95% CI: 79.99-94.45) was significantly higher than that of hypertriglyceridemia (65.71 cases per 1,000 person-years; 95% CI: 59.71-71.72). Combined dyslipidemia showed an incidence of 48.28 cases per 1,000 person-years (95% CI: 43.60-52.97). Workers in social services had a higher risk of developing dyslipidemias (aHR: 1.78; 95% CI: 1.27-2.49) compared to office workers. Prolonged sitting time (>4 h) was significantly associated with an increased risk of hypertriglyceridemia (aHR: 1.28; 95% CI: 1.05-1.56) and combined dyslipidemia (aHR: 1.42; 95% CI: 1.15-1.76). CONCLUSIONS: The high incidence of dyslipidemias-particularly hypercholesterolemia-may reflect the increasing consumption of ultra-processed foods and the ongoing nutritional transition in the Peruvian population. Occupational factors play a crucial role in the development of these metabolic disorders, highlighting the need for specific preventive strategies in the workplace.

[Lien vers l'article](#)

### Cancers

Aucun article dans ce bulletin.

### Risque routier, accidentologie

Aucun article dans ce bulletin.

### RPS et QVT

#### **Characterizing potential subtypes and influencing factors of self-directed learning competence among clinical nurses in China by latent profile analysis.**

Zhisheng Z, Mingju C, Ruichu Z, Fang W, Shaona L, Anliu N, et al. *Belitung Nurs J.* 2025;11(6):684-91.

BACKGROUND: Nurses demonstrate varying levels of self-directed learning competence, which is influenced by multiple individual and contextual factors. Identifying profiles with varying levels of self-directed learning is essential for providing targeted support and training. However, there is limited research exploring the potential profiles of self-directed learning competence among nurses. OBJECTIVES: This study aimed to identify distinct latent profiles of self-directed learning competence among nurses and analyze the influencing factors. METHODS: A cross-sectional study design was used. Nurses were recruited using a convenience sampling from four tertiary hospitals in Guangzhou, China, between August 2024 and February 2025. The Self-Directed Learning Competence Scale for Nurses was used to assess the self-directed learning Competence of nurses. Latent profile analysis was performed to identify different potential profiles. Pearson's chi-square test and multinomial logistic regression were used to explore the factors influencing self-directed learning competence. RESULTS: A total of 740 nurses participated. Three latent profiles of self-directed learning competence were identified: low (n = 356, 48.1%), medium (n = 291, 39.3%), and high (n = 93, 12.5%). The self-directed learning competence of nurses was influenced by various factors, including Junior college and below (OR = 0.555, p= 0.043); Monthly number of night shifts = 3~4 (OR = 2.859, p = 0.029); Learning atmosphere = neutral (OR = 0.342, p = 0.018) and good (OR = 0.412, p = 0.038); Learning willingness (OR = 1.425, p <0.001), Difficulty of title promotion = difficult (OR = 2.628, p = 0.029) and Job stress (OR = 0.981, p <0.001). CONCLUSION: The study revealed diverse profiles of self-directed learning

competence among nurses. Nursing managers should design differentiated strategies based on these profiles. Enhancing organizational support and stimulating learning motivation can help improve nurses' self-directed learning competence, thereby promoting their professional development and improving the overall quality of clinical nursing care.

[Lien vers l'article](#)

### **Analysis of sleep patterns among clinical nurses: a latent profile and association rule mining approach.**

Wei N, Hu L, Li J, Chu J. *BMC Nurs.* 2025 Nov 17;24(1):1403.

**BACKGROUND:** Traditional approaches to assessing sleep quality in clinical nurses often overlook population heterogeneity and the complex interplay of influencing factors. This study employs Latent Profile Analysis (LPA) and Association Rule Mining (ARM) to identify distinct sleep quality subgroups and uncover key factor combinations, thereby informing targeted intervention strategies. **METHODS:** A total of 1,686 nurses from 123 hospitals in Shandong Province were recruited through multistage stratified sampling. LPA was used to classify participants based on seven sleep dimensions from the Pittsburgh Sleep Quality Index (PSQI), while ARM was applied to identify frequent itemsets of sleep disorder triggers. Key influencing factors were further examined using univariate analysis and multivariate logistic regression. **RESULTS:** Three latent sleep profiles were identified: high (63.11%), moderate (34.10%), and low (2.79%) sleep quality. The low-sleep subgroup was characterized by higher proportions of being unmarried/divorced (42.55%), low monthly income ( $\leq 3,000$  CNY, 42.55%), non-permanent employment (76.60%), and severe psychological distress (44.68%). In contrast, the high-sleep subgroup featured higher rates of being married (85.62%), moderate income (3,001–7,000 CNY, 73.03%), and low psychological distress (51.32%). Key determinants included marital status (OR = 2.153/2.252), income (OR = 9.098), employment type (OR = 1.475), and psychological state (OR = 0.060–0.555). ARM revealed distinct risk combinations: “low income + non-permanent employment” (lift = 3.895) for the low-sleep group; “married + moderate income + non-permanent employment + patient conflict” for the moderate group; and “high income + low psychological distress” buffering night-shift effects in the high-sleep group. **CONCLUSION:** By integrating LPA and ARM, this study reveals the multidimensional heterogeneity and interactive mechanisms underlying clinical nurses' sleep quality. The findings support a stratified intervention framework combining institutional safeguards with precision strategies to enhance sleep health management in nursing populations.

[Lien vers l'article](#)

### **Burnout, anxiety, and resilience among nurses during wartime: evidence from a cross-sectional study.**

Shalom T, Ogni L, Freud T, Bashkin O. *BMC Nurs.* 2025 Nov 21;24(1):1424.

**BACKGROUND:** The Iron Swords War that began in October 2023 created unprecedented challenges for Israeli healthcare workers. Nurses, who are particularly vulnerable to occupational stressors, face heightened risks of burnout and psychological distress during wartime. This study examined the relationship between personal resilience and burnout among hospital nurses working during the Iron Swords War in Israel and assessed the prevalence of burnout, anxiety, and stress while identifying factors associated with lower burnout. **METHODS:** In this cross-sectional study, an electronic questionnaire was distributed to hospital nurses working in Israeli hospitals to measure demographic characteristics; resilience, the Connor-Davidson 10-item Resilience Scale (CD-RISC-10); anxiety and stress, the Depression, Anxiety, and Stress Scale (DASS-21); and burnout, the Copenhagen Burnout Inventory (CBI). Mediation analysis was conducted via the PROCESS macro to examine the relationships among anxiety, stress, resilience, and burnout. **RESULTS:** Of the 465 nurses who

completed the survey, 80.6% reported extremely severe anxiety, whereas 35.4% reported extremely severe stress. While 53.3% reported moderate burnout levels, only 7.7% reported high burnout. The mean  $\pm$  standard deviation resilience score was  $20.4 \pm 8.2$ . Factors associated with elevated anxiety and stress included night shift work, working  $> 180$  h/month, and having family members in military service during the war. The results of the mediation analysis revealed that stress partially mediated the relationship between anxiety and burnout ( $B = 0.3210$ ,  $p < 0.001$ ). Resilience was significantly and negatively correlated with burnout ( $r = -0.282$ ,  $p < 0.01$ ), suggesting an inverse association. Multiple regression revealed that sex, resilience, anxiety, and stress were significantly associated with burnout, explaining 48.1% of the variance. The 8.6% response rate represents a major limitation affecting generalizability, and findings should be interpreted as preliminary insights rather than definitive population estimates. **CONCLUSIONS:** Despite extremely high levels of anxiety and stress, nurses maintained moderate burnout and resilience levels during wartime. The role of resilience and the mediating role of stress highlight the importance of targeted interventions focused on stress management and resilience building, particularly for high-risk groups. **CLINICAL TRIAL NUMBER:** Not applicable.

[Lien vers l'article](#)

#### **To enhance patient care ownership: A baseline cross-sectional study on pediatric training.**

Nakao H, Nomura O, Kubota M, Tonegawa N, Shoji K, Ishiguro A. *Pediatr Int.* 2025 Jan-Dec;67(1):e70278.

**BACKGROUND:** Patient care ownership (PCO) has become of great concern in worldwide physician training and the National Center for Child Health and Development (NCCHD) in Japan. There are only a few reports on PCO in Japan. We previously reported work time reduction and mental improvements in relation to implementing shiftwork and work style reform at the NCCHD. This study aimed to measure the baseline of PCO and explore the relationships between PCO and mental well-being and work conditions in pediatric training at the NCCHD. **METHODS:** We conducted questionnaire-based cross-sectional surveys of 15 pediatric trainees soon to complete their training in March 2024 and 42 ongoing pediatric trainees in September 2024. Data were obtained regarding demographics, work conditions, the Center for Epidemiologic Studies Depression Scale (CES-D), Maslach Burnout Inventory (MBI), and the Japanese version of the Patient Care Ownership Scale (J-PCOS). **RESULTS:** The response rate for each survey was 100% (15/15) in March 2024 and 81% (34/42) in September 2024. The mean J-PCOS scores were 5.4 in the former and 5.3 in the latter survey. The combined analyses of these data indicated that J-PCOS was significantly associated with compliance with daytime off before nightwork ( $\beta$ , 0.6-0.7) and the personal accomplishment subscale of MBI (correlation coefficient, -0.34;  $\beta$ , -0.1). **CONCLUSIONS:** Shiftwork, mental well-being, and PCO might be positively related to one another. A feeling of accomplishment, or a sense of meaning in work, can be a target of intervention to enhance PCO while promoting trainees' well-being.

[Lien vers l'article](#)

#### **Impact of burnout, job and life satisfaction, and life orientation on rationing of nursing care: a cross-sectional observational study.**

Milecka D, Homętowska H, Manulik S, Frydrysiak-Brzozowska A, Uchmanowicz I. *BMC Nurs.* 2025 Nov 28.

**BACKGROUND:** Rationing of nursing care leads to a decline in the quality of nursing care. With the current shortage of nursing staff being a major cause of care rationing, there is still a need for research to identify the factors influencing the level of care rationing. The aim was to evaluate the level of nursing care rationing among nursing staff, considering the type of rationed activities. **METHODS:** The study included 795 nurses employed in 2018 at the University Clinical Hospital in Wrocław, who were

directly responsible for patient care. Five standardized questionnaires were used to investigate the main variables - the Basel Extent of Rationing of Nursing Care (BERNCA-R), the Maslach Burnout Inventory (MBI), the Job Satisfaction Scale (JSS), the Satisfaction with Life Scale (SWLS), and the Life Orientation Test (LOT-R). RESULTS: The average BERNCA-R score was 1.65 points (SD = 0.81), indicating a frequency of rationing between "never" and "rarely." The most rationed activity was the administration of prescribed medication or intravenous infusion at the appropriate time. Higher BERNCA-R scores (more frequent rationing) were statistically influenced by variables: lack of postgraduate education, working in closed healthcare, shift work, and a higher number of patients under care. The study showed an impact of life and job satisfaction, burnout on the BERNCA-R score. Independent predictors of a higher BERNCA-R score (more frequent rationing) were specialization, having 16-25, 26-35, or > 35 patients under care, a less pessimistic life orientation, higher emotional exhaustion, and greater depersonalization. Independent predictors of a lower BERNCA-R score (less frequent rationing) were professional experience of more than 20 years, open healthcare as the primary workplace, and "other" as the main workplace. CONCLUSIONS: Higher life and job satisfaction reduce the level of nursing care rationing. Conversely, rationing is more frequent with higher burnout levels, among those working in closed healthcare and shift work. An increase in the number of patients under care during shifts leads to increased burnout and more frequent rationing of nursing care. CLINICAL TRIAL NUMBER: Not applicable.

[Lien vers l'article](#)

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[Lien vers l'article](#)

**Risk of adverse events from medication errors in general and tertiary hospitals: A cross-sectional design.**

Hong E, Kang Y. *Contemp Nurse*. 2025 Nov 25:1-16.

**BACKGROUND:** A thorough investigation of various medical errors to better understand their underlying causes is the first step toward preventing medication errors and improving patient safety. The causes, types, and rates of medication errors can evolve within the healthcare delivery system. In Korea, systematic data on patient safety incidents remains limited, although healthcare institutions are progressively developing comprehensive information sharing systems. **OBJECTIVE:** This study aimed to analyze factors influencing the risk of adverse events from medication errors in general and tertiary hospitals in Korea using national patient safety statistics (2018-2022). **METHODS:** A secondary analysis of 8,606 medication error reports was performed to identify risk factors related to hospital and patient characteristics. Firth penalized logistic regression was employed, and sensitivity analyses excluding pandemic years (2020-2021) were conducted. **RESULTS:** The risk of adverse events from medication errors was 1.5 times higher in general hospitals with  $\geq 500$  beds than in those with  $< 500$  beds. Emergency rooms and intensive care units demonstrated the highest risks across both hospital types. Day shifts showed protective effects compared to night shifts in both hospital types. Temporal analysis revealed significantly higher risks in earlier years (2018-2020) compared to 2022, suggesting improvements in medication safety systems. Sensitivity analyses confirmed that pandemic years amplified risks in high-acuity areas, and the protective effect of day shifts was particularly critical during this period. In general hospitals, adult age groups ( $\geq 20$  years) showed elevated risks, with pediatrics demonstrating 1.7 times higher risk than general surgery. **CONCLUSIONS:** These findings highlight the need for tailored interventions based on hospital type, location, temporal factors, and patient characteristics. Developing department-specific safety strategies for high-acuity care environments, optimizing staffing patterns particularly during night shifts, implementing age-specific medication management protocols, and continuously improving safety systems are essential to prevent medication errors, enhance patient safety, and improve healthcare outcomes.

[Lien vers l'article](#)

**Occupational determinants of anxiety, depression, and stress among community pharmacists in Jordan: a cross-sectional study.**

Jarab AS, Al-Qerem W, Al Meslamani AZ. *Psychol Health Med*. 2025 Nov 12:1-17.

Mental-health burdens among pharmacists are a growing concern worldwide. Data from Jordan, however, remain sparse. The study objective was to quantify anxiety, depression, and perceived stress among Jordanian community pharmacists and to identify modifiable occupational determinants of these outcomes. In this cross-sectional study, research pharmacists distributed a validated questionnaire in person by sharing a survey link via Google Forms with licensed community pharmacists in their residential areas using convenience sampling. Validated Arabic versions of the GAD-7, PHQ-9, and PSS-10 scales were used to assess anxiety, depression, and stress, respectively. Independent variables included demographic and occupational characteristics, as well as perceived stigma and benefits adequacy. A quantile regression analysis was conducted to explore the factors associated with the GAD-7, PHQ-9, and PSS-10 scores. Three hundred ninety-one pharmacists (73.4% female; median age 29 years) participated in the study. Median (IQR) scores were GAD-7 = 9 (6-11), PHQ-9 = 10 (8-13), PSS-10 = 17 (14-19). The most common conditions were mild anxiety (46.3%), moderate depression (40.4%), and moderate stress (77.7%). Higher unadjusted symptom ratings were linked to fixed overtime, night or rotating shifts, inadequate benefits, and doctorate (PhD) training (all  $p < 0.05$ ). On the other hand, all three scales showed an inverse relationship with higher patient throughput ( $\rho = -0.15$  to  $-0.21$ ,  $p < 0.01$ ). Each additional year of age raised median GAD-7 by 0.11 points ( $\beta = 0.113$ , 95% CI 0.035-0.192) in fully adjusted models, whereas each new patient decreased

median PHQ-9 by 0.011 and PSS-10 by 0.012 points (both  $p = 0.001$ ). In conclusion, Jordanian community pharmacists in this study experience mild-to moderate anxiety, depression, and stress. High patient flow may shield practitioners from financial instability and enhance professional engagement, while older age, nocturnal or rotational shifts, frequent overtime, inadequate benefits, and perceived stigma worsen symptoms.

[Lien vers l'article](#)

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Nakao H, Nomura O, Kubota M, Tonegawa N, Shoji K, Ishiguro A. *Pediatr Int.* 2025 Jan-Dec;67(1):e70278.

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[Lien vers l'article](#)

### **Emergency department overcrowding: first Swiss application of the Emergency Department Work Index and risk factors for overcrowding.**

Herzog A, Luster M, Keller Lang DI, Slankamenac K. *Front Public Health.* 2025;13:1691633.

**INTRODUCTION:** Emergency department (ED) overcrowding is associated with increased waiting time, reduced patient satisfaction, and decreased quality of care. Numerous validated scores are available for assessing ED overcrowding. The Emergency Department Work Index (EDWIN) is the most established score for quantifying ED overcrowding. We assessed the applicability of the EDWIN in a Swiss ED and investigated further predictors of ED overcrowding. **METHODS:** In this retrospective analysis, we included consecutive ED visits at a tertiary care hospital between 1st December and 31st December 2016. The median EDWIN per hour was defined as the first endpoint. To investigate predictors of overcrowding, we grouped ED visits with an EDWIN  $\leq 2$  as not overcrowded and those with an EDWIN  $> 2$  as overcrowded and performed multivariable regression analysis. **RESULTS:** The median EDWIN score per hour was 1.4 (IQR 1.0-1.9). In 394 calculations (53%), the ED was active; 189 calculations (25.4%) showed a very busy ED; and in 161 observations (21.6%), the ED was severely overcrowded. On average, the ED was severely overcrowded six times per day. The highest EDWIN score was reported on Saturdays [mean 2.1 (SD 1.2)] and Sundays [mean 1.7 (SD 1.0)]. During weekends, overcrowding occurred from 8 p.m. to 05 a.m., and the EDWIN score ranged from 2.2 to 3.1. During the week, the mean EDWIN score ranged from 1.3 to 1.6. A reduced number of emergency physicians during night shifts ( $p < 0.001$ ), an increased number of patients in the ED treatment area

( $p < 0.001$ ), patients waiting for admission to the ward ( $p < 0.001$ ), weekend periods ( $p = 0.001$ ), and a higher number of isolated ED patients due to infections ( $p < 0.001$ ) showed a highly significant association with overcrowding. In the case of overcrowding, the waiting time was prolonged ( $p = 0.034$ ). CONCLUSION: The EDWIN score was easily applicable in a tertiary care Swiss ED, objectively displayed severe overcrowding during weekend nights, and was strongly associated with the number of available attending emergency physicians, the number of patients in the ED treatment area, patients waiting for admission to the ward, weekend periods, and the number of patient isolations.

[Lien vers l'article](#)

### **Prevalence and factors associated with depression, anxiety and stress among nursing home caregivers in China: a multi-center cross-sectional study.**

Fan ZR, Chong MC, Xiaona Z, Jing M, You YL, Ma L, et al. *Front Public Health*. 2025;13:1690840.

BACKGROUND: This study aimed to investigate the prevalence of depression, anxiety, and perceived stress among nursing home caregivers in China and to examine the associated factors. METHODS: A multicenter cross-sectional study was conducted among 1,341 caregivers in nursing homes across Henan Province, China. Standardized instruments were applied, including the Self-Rating Depression Scale (SDS), Self-Rating Anxiety Scale (SAS), and the 10-item Perceived Stress Scale (PSS-10). Descriptive statistics, univariate analysis, and multivariable logistic regression were performed to identify independent predictors of psychological distress. RESULTS: The prevalence of depression and anxiety was 34.8 and 10.8%, respectively, while 49.6% of caregivers reported moderate-to-high levels of stress. Significant predictors included city region, type of nursing home, educational level, monthly income, working hours, night shifts, presence of chronic diseases, attention to mental health, and participation in psychological training. Higher education and moderate income were protective factors, whereas employment in rural private nursing homes, low engagement in mental health practices, and the presence of chronic diseases increased risks. Longer working hours and more frequent night shifts were unexpectedly associated with lower stress levels. CONCLUSION: Depression and stress represent the major psychological concerns among nursing home caregivers in China. Targeted interventions should prioritize routine mental health screening, workplace-based psychological support, and policy measures aimed at improving working conditions and access to training, thereby safeguarding caregiver well-being and supporting the sustainability of long-term care services.

[Lien vers l'article](#)

### **Sleep quality and associated factors among critical care nurses in Jordan: A cross-sectional study.**

Al-Nbabweh KE, Bkar RB, Al-Qaaneh AM, Alfarajat EM, Kraishan S. *Enferm Intensiva (Engl Ed)*. 2025 Oct-Dec;36(4):500562.

BACKGROUND: Sleep is an essential component of daily living, yet sleep disturbances are prevalent among nurses in critical care settings. Poor sleep quality is linked to adverse outcomes, including diminished cognitive and physical performance, mood disorders, and an increased risk of chronic diseases. This study aimed to evaluate the sleep quality of critical care nurses in Jordanian public hospitals and identify the associated factors. METHODS: A cross-sectional study was conducted in two major hospitals affiliated with Jordan's Ministry of Health. A convenience sample of 172 critical care nurses completed the Pittsburgh Sleep Quality Index (PSQI), the National Aeronautics and Space Administration Task Load Index (NASA-TLX), and the Depression Anxiety Stress Scale (DASS). Data were analyzed using multiple regression analysis in SPSS version 28. RESULTS: A total of 82.6% of nurses reported poor sleep quality, with an average global PSQI score of  $10.87 \pm 3.19$ . Workload ( $B=2.844$ ,  $p < 0.001$ ) and anxiety ( $B=1.087$ ,  $p < 0.001$ ) were the most significant predictors of poor sleep quality. Marital status ( $B=1.466$ ,  $p=0.017$ ) and working shifts ( $B=1.826$ ,  $p=0.022$ ) were also significantly

associated with poor sleep quality. CONCLUSION: Poor sleep quality level was found among the majority of critical care nurses, highlighting the need of implementing immediate interventions; including routine assessment of nurses sleep quality, ongoing support and counseling. Policymakers should prioritize initiatives such as workload management, disciplined shift scheduling, and stress reduction programs to improve nurses' well-being. Implementing these procedures may reduce fatigue-related medical errors and increase patient safety.

[Lien vers l'article](#)

### Santé psychique

#### **Melatonin and Cortisol Suppression and Circadian Rhythm Disruption in Burnout Among Healthcare Professionals: A Systematic Review.**

Ungurianu A, Marina V. *Clin Pract.* 2025 Oct 29;15(11).

Background: Burnout among healthcare professionals is increasingly recognized as a syndrome with biological correlations. Beyond psychosocial factors, circadian misalignment, sleep disturbances, and hormonal dysregulation-particularly involving melatonin and cortisol-are emerging as relevant mechanisms. Methods: We systematically reviewed studies published between 2015 and 2025 examining associations between burnout, melatonin, circadian disruption, sleep quality, and related biomarkers in healthcare workers. Results: Across 14 included studies, burnout was associated with suppressed melatonin secretion, cortisol dysregulation, and circadian misalignment, including social jet lag and poor sleep quality. Night-shift nurses consistently displayed greater circadian disruption and higher burnout scores than day-shift colleagues. Evidence also suggests that environmental and interventional approaches-such as optimizing daylight exposure and melatonin supplementation to improve sleep quality and cognitive performance-may mitigate circadian disruption and occupational fatigue. Conclusions: Burnout should be recognized as a biopsychosocial syndrome with measurable chronobiological correlates. Future research should integrate circadian biomarkers into occupational health assessments and evaluate preventive strategies aimed at preserving circadian health in healthcare professionals.

[Lien vers l'article](#)

#### **The Biological Clock Influenced by Burnout, Hormonal Dysregulation and Circadian Misalignment: A Systematic Review.**

Ungurianu A, Marina V. *Clocks Sleep.* 2025 Nov 3;7(4).

Burnout is increasingly recognized as both a psychosocial and a chronobiological disorder characterized by endocrine dysregulation and circadian disruption. It arises from chronic occupational stress and manifests through psychological, physical, and physiological symptoms. Although psychosocial determinants are well established, the biological and chronobiological mechanisms, particularly those involving cortisol and melatonin, remain less explored. This systematic review synthesizes current evidence on hormonal and circadian dysregulation in burnout and complements it with exploratory observational data from healthcare professionals. Peer-reviewed studies evaluating endocrine or circadian biomarkers in individuals with burnout were systematically reviewed. In addition, an exploratory observational analysis was carried out among 195 Romanian clinicians using an adapted Maslach Burnout Inventory. Morning salivary cortisol was measured once at 9 a.m. in a small subsample (n = 26) to provide preliminary physiological data. Because only a single time point was obtained, these values were interpreted as indicative of stress-related activation rather than circadian rhythm. Thirty-seven studies met the inclusion criteria. Across the literature, burnout was associated with altered HPA-axis activity, blunted diurnal cortisol variation, and irregular melatonin

secretion related to shift work and disrupted sleep-wake cycles. Complementary exploratory data from our Romanian cohort indicated strong correlations between burnout severity, physical symptoms, and higher morning cortisol values among shift-working clinicians. These findings are preliminary and not representative of full circadian profiles. Burnout should be considered both a psychosocial and a systemic disorder influenced by endocrine and circadian dysregulation. Recognizing alterations in cortisol and melatonin as objective indicators may facilitate earlier detection and inform chronobiological interventions such as optimized scheduling, light exposure management, or melatonin therapy. The observational data presented here is preliminary and intended to generate hypotheses; future research should employ repeated cortisol sampling under controlled Zeitgeber conditions to confirm circadian associations.

[Lien vers l'article](#)

**Burnout, anxiety, and resilience among nurses during wartime: evidence from a cross-sectional study.**

Shalom T, Ogni L, Freud T, Bashkin O. *BMC Nurs.* 2025 Nov 21;24(1):1424.

**BACKGROUND:** The Iron Swords War that began in October 2023 created unprecedented challenges for Israeli healthcare workers. Nurses, who are particularly vulnerable to occupational stressors, face heightened risks of burnout and psychological distress during wartime. This study examined the relationship between personal resilience and burnout among hospital nurses working during the Iron Swords War in Israel and assessed the prevalence of burnout, anxiety, and stress while identifying factors associated with lower burnout. **METHODS:** In this cross-sectional study, an electronic questionnaire was distributed to hospital nurses working in Israeli hospitals to measure demographic characteristics; resilience, the Connor-Davidson 10-item Resilience Scale (CD-RISC-10); anxiety and stress, the Depression, Anxiety, and Stress Scale (DASS-21); and burnout, the Copenhagen Burnout Inventory (CBI). Mediation analysis was conducted via the PROCESS macro to examine the relationships among anxiety, stress, resilience, and burnout. **RESULTS:** Of the 465 nurses who completed the survey, 80.6% reported extremely severe anxiety, whereas 35.4% reported extremely severe stress. While 53.3% reported moderate burnout levels, only 7.7% reported high burnout. The mean  $\pm$  standard deviation resilience score was  $20.4 \pm 8.2$ . Factors associated with elevated anxiety and stress included night shift work, working  $> 180$  h/month, and having family members in military service during the war. The results of the mediation analysis revealed that stress partially mediated the relationship between anxiety and burnout ( $B = 0.3210$ ,  $p < 0.001$ ). Resilience was significantly and negatively correlated with burnout ( $r = -0.282$ ,  $p < 0.01$ ), suggesting an inverse association. Multiple regression revealed that sex, resilience, anxiety, and stress were significantly associated with burnout, explaining 48.1% of the variance. The 8.6% response rate represents a major limitation affecting generalizability, and findings should be interpreted as preliminary insights rather than definitive population estimates. **CONCLUSIONS:** Despite extremely high levels of anxiety and stress, nurses maintained moderate burnout and resilience levels during wartime. The role of resilience and the mediating role of stress highlight the importance of targeted interventions focused on stress management and resilience building, particularly for high-risk groups. **CLINICAL TRIAL NUMBER:** Not applicable.

[Lien vers l'article](#)

**The weight of words: a scoping review of depression and suicidal ideation among 911 call takers and dispatchers.**

Rani D, Foley G, Lynn C, Johnson D, William T, Cassiano MS. *Health Justice.* 2025 Nov 7;13(1):66.

**BACKGROUND:** Communicators in public safety, such as 911 telecommunicators, emergency medical dispatchers, and police and fire dispatchers, frequently deal with distressing calls, traumatic narratives,

and high-stakes decisions. Despite not being physically present at crisis scenes, these experts endure psychological stress on par with first responders. This scoping review examines the prevalence and determinants of depression and suicidal ideation among public safety communicators and their co-occurrence, summarizes the occupational and personal risk factors contributing to these outcomes, and evaluates proposed mitigation strategies. **RESULTS:** The research indicates that depression is reported at elevated rates in this workforce, ranging from 8.4% to 73%, depending on the population and the sensitivity of the instrument, based on 11 quantitative studies published between 1995 and 2025. Although less studied, suicidal ideation appears to be significantly higher in this group compared to the general population. Contributing factors include indirect trauma exposure, shift work, emotional suppression, organizational neglect, and a history of trauma. The frequent co-occurrence of depression and suicidal ideation supports the Interpersonal Theory of Suicide as a relevant explanatory framework. **CONCLUSIONS:** Despite accumulating evidence, research is methodologically limited due to cross-sectional designs, inconsistent screening tools, and sample homogeneity. Existing interventions, such as peer support, debriefing, and trauma-informed training, are inconsistently applied and under-evaluated. The findings highlight a pressing need for longitudinal research, targeted interventions, and workplace reforms that take into account the unique psychological burdens associated with communicator roles. Addressing depression and suicide risk among these professionals is critical to ensuring both workforce well-being and the continued effectiveness of public safety systems.

[Lien vers l'article](#)

#### **Occupational determinants of anxiety, depression, and stress among community pharmacists in Jordan: a cross-sectional study.**

Jarab AS, Al-Qerem W, Al Meslamani AZ. *Psychol Health Med.* 2025 Nov 12:1-17.

Mental-health burdens among pharmacists are a growing concern worldwide. Data from Jordan, however, remain sparse. The study objective was to quantify anxiety, depression, and perceived stress among Jordanian community pharmacists and to identify modifiable occupational determinants of these outcomes. In this cross-sectional study, research pharmacists distributed a validated questionnaire in person by sharing a survey link via Google Forms with licensed community pharmacists in their residential areas using convenience sampling. Validated Arabic versions of the GAD-7, PHQ-9, and PSS-10 scales were used to assess anxiety, depression, and stress, respectively. Independent variables included demographic and occupational characteristics, as well as perceived stigma and benefits adequacy. A quantile regression analysis was conducted to explore the factors associated with the GAD-7, PHQ-9, and PSS-10 scores. Three hundred ninety-one pharmacists (73.4% female; median age 29 years) participated in the study. Median (IQR) scores were GAD-7 = 9 (6-11), PHQ-9 = 10 (8-13), PSS-10 = 17 (14-19). The most common conditions were mild anxiety (46.3%), moderate depression (40.4%), and moderate stress (77.7%). Higher unadjusted symptom ratings were linked to fixed overtime, night or rotating shifts, inadequate benefits, and doctorate (PhD) training (all  $p < 0.05$ ). On the other hand, all three scales showed an inverse relationship with higher patient throughput ( $\rho = -0.15$  to  $-0.21$ ,  $p < 0.01$ ). Each additional year of age raised median GAD-7 by 0.11 points ( $\beta = 0.113$ , 95% CI 0.035-0.192) in fully adjusted models, whereas each new patient decreased median PHQ-9 by 0.011 and PSS-10 by 0.012 points (both  $p = 0.001$ ). In conclusion, Jordanian community pharmacists in this study experience mild-to moderate anxiety, depression, and stress. High patient flow may shield practitioners from financial instability and enhance professional engagement, while older age, nocturnal or rotational shifts, frequent overtime, inadequate benefits, and perceived stigma worsen symptoms.

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Fan ZR, Chong MC, Xiaona Z, Jing M, You YL, Ma L, et al. *Front Public Health*. 2025;13:1690840.

**BACKGROUND:** This study aimed to investigate the prevalence of depression, anxiety, and perceived stress among nursing home caregivers in China and to examine the associated factors. **METHODS:** A multicenter cross-sectional study was conducted among 1,341 caregivers in nursing homes across Henan Province, China. Standardized instruments were applied, including the Self-Rating Depression Scale (SDS), Self-Rating Anxiety Scale (SAS), and the 10-item Perceived Stress Scale (PSS-10). Descriptive statistics, univariate analysis, and multivariable logistic regression were performed to identify independent predictors of psychological distress. **RESULTS:** The prevalence of depression and anxiety was 34.8 and 10.8%, respectively, while 49.6% of caregivers reported moderate-to-high levels of stress. Significant predictors included city region, type of nursing home, educational level, monthly income, working hours, night shifts, presence of chronic diseases, attention to mental health, and participation in psychological training. Higher education and moderate income were protective factors, whereas employment in rural private nursing homes, low engagement in mental health practices, and the presence of chronic diseases increased risks. Longer working hours and more frequent night shifts were unexpectedly associated with lower stress levels. **CONCLUSION:** Depression and stress represent the major psychological concerns among nursing home caregivers in China. Targeted interventions should prioritize routine mental health screening, workplace-based psychological support, and policy measures aimed at improving working conditions and access to training, thereby safeguarding caregiver well-being and supporting the sustainability of long-term care services.

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**Troubles cognitifs et de la vigilance**

**A narrative review on in-flight use of consumer sleep technologies for aviation research.**

Devine JK, Hursh SR. *Sleep Adv*. 2025;6(4):zpaf076.

Aviation is a global safety-sensitive industry that employs strict guidance about the monitoring and management of fatigue. Ecological sleep data is routinely collected to assess fatigue risk in flight crew during long-haul operations for safety and regulatory purposes. There is a growing body of scientific literature that supports the evaluation and use of consumer sleep technologies (CSTs) for ecological research. CSTs have the potential to facilitate longitudinal monitoring of sleep and fatigue in the aviation context and thus improve not only the health and well-being of flight crew but the safety of their passengers as well. However, CSTs have not been robustly studied for the measurement of in-flight sleep. Flight crew regularly take in-flight rest opportunities to mitigate fatigue when the opportunity arises and it is legally permitted. Technologies that cannot accurately capture in-flight sleep are not a reliable method to use for aviation research. The goal of this narrative review is to describe how CSTs could potentially be used to collect sleep data, specifically in the in-flight environment, based on existing guidance from the scientific and regulatory literature on fatigue risk management. Aviation stakeholders and the sleep science community should work together to develop criteria for the appropriate testing and use of CSTs as part of appropriate fatigue risk management systems (FRMS). This article is part of the Consumer Sleep Technology Special Collection.

[Lien vers l'article](#)

**Analysis of factors influencing empathy fatigue among emergency nurses based on the Conservation of Resources theory.**

Dai M, Li N, Gao Y, Yuan Z. *Appl Nurs Res.* 2025 Dec;86:152030.

**AIM:** The present study, grounded in the Conservation of Resources theory, aimed to investigate the levels of empathy fatigue among emergency department nurses. **BACKGROUND:** Empathy fatigue is prevalent among emergency department nurses and is largely attributed to external factors, such as stress. However, the underlying psychological mechanisms of these factors remain underexplored. **METHODS:** Using a cross-sectional survey design, data were collected from emergency department nurses across 22 general tertiary care hospitals. The survey included a general demographic questionnaire, the Chinese version of the Professional Quality of Life Scale, the Ruminative Thinking Scale, Pittsburgh Sleep Quality Index, and the Mental Capital Scale. Empathy fatigue was assessed using a specialized quality-of-life scale, with high scores indicating high levels of empathy fatigue. **RESULTS:** The overall empathy fatigue score among emergency department nurses was  $86.35 \pm 20.34$ , with an average score of  $2.87 \pm 0.68$ . The mean scores for the dimensions, ranked in descending order, were as follows: burnout ( $3.01 \pm 0.70$ ), empathy satisfaction ( $2.92 \pm 0.87$ ), and secondary traumatic stress ( $2.70 \pm 0.74$ ). Univariate analysis indicated that marital status, residence, education, work area, job title, position, rotating shifts, and night shifts significantly influenced empathy fatigue scores. Multiple linear regression analysis identified ruminative thinking, sleep quality, educational level, work area, and position as significant predictors of empathy fatigue. **CONCLUSION:** This study confirms a high incidence of empathy fatigue among emergency department nurses. Nursing administrators should focus on high-risk individuals and develop targeted prevention strategies.

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## Chronobiologie

### Animal

#### **Impact of high sugar intake on neurobehavioral, oxidative, and hepatic integrity in mice exposed to simulated chronic jetlag/shiftwork.**

Mishra M, Gupta R, Pillai V, Singaravel M. *Physiol Behav.* 2026 Jan 1;303:115149.

Circadian misalignment, frequently encountered in shiftwork and trans-meridian travel, disrupts the temporal coordination of physiological processes and increases susceptibility to metabolic, neurobehavioral, and inflammatory disorders. Concurrently, it has been established that high dietary intake of refined sugars poses additional risks to systemic homeostasis. This study investigates the interactive effects of prolonged circadian disruption and sustained high-sucrose intake on neurobehavioral outcomes, metabolic parameters, redox homeostasis, and hepatic integrity in adult male mice. Animals were maintained under either a stable 12 h light:12 h dark cycle or exposed to a 24-day protocol of alternating 8 h phase advances and delays that simulated chronic jetlag/shiftwork. Within each lighting condition, mice consumed either tap water or a 30 % sucrose solution, yielding four experimental groups. Behavioral assays revealed that combined exposure to circadian disruption and sucrose elicited pronounced anxiety-like phenotypes and significant increases in body weight and blood glucose levels. Histological and lipid-specific analyses revealed progressive hepatic steatosis, vacuolization, and lipid accumulation, with pathology most pronounced under combined circadian disruption and sucrose intake. Biochemical analyses showed reduced antioxidant enzyme activities, elevated blood glucose and triglyceride levels, and increased hepatic enzymes, indicating oxidative stress, metabolic disruption, and liver dysfunction. Notably, chronic jetlag alone impaired neurobehavior, redox balance, and liver health, while high sugar intake further amplified these effects. These findings underscore the translational significance of addressing both circadian disruption and dietary excess to mitigate metabolic and psychological risks in individuals exposed to irregular light schedules and high-sugar diets.

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dietary excess to mitigate metabolic and psychological risks in individuals exposed to irregular light schedules and high-sugar diets.

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**A Novel Cell-Type Specific Circadian Reporter Mouse Reveals Self-Sustained Food Entrainable Nature in Enteric Neurons.**

Magaña I, Taufique SKT, Shan Y, Shen M, Ehichioya DE, Takahashi JS, et al. *bioRxiv*. 2025 Nov 17.

Global luciferase reporter gene technology is an important real-time readout for the analysis of circadian oscillations. However, because nearly all cells in the body possess cell-autonomous circadian oscillators, developing cell-type-specific reporter systems is essential to dissect how these oscillators interact within complex multicellular tissues and are modulated by brain-body circadian signals. The intestine is a complex organ composed of diverse cell types with distinct origins and functions, and it exhibits robust daily rhythms in physiological activities driven by intrinsic circadian clocks. While the circadian regulation of the mucosal compartment, including the intestinal epithelium, has been relatively well characterized, the mechanisms governing the circadian rhythms in the cells of the muscularis externa remain largely unexplored. Here, we report a novel Cre-dependent Per2-luciferase reporter mouse that enables precise measurement of circadian oscillations in specific peripheral cell populations *ex vivo* and demonstrate its utility in revealing the hierarchical circadian chronoarchitecture within the intestine. *Ex vivo* gut explants from mice expressing the reporter in one of five major cell types of the muscularis externa-enteric neurons (ENs), enteric glial cells (EGCs), interstitial cells of Cajal (ICCs), smooth muscle cells (SMCs), and muscularis macrophages (MMs)-exhibited robust, self-sustained circadian bioluminescence rhythms, indicating that all of these cell types possess cell-autonomous circadian oscillators. Notably, ENs in the small intestine entrained more rapidly to feeding schedules than did those in the colon, revealing regional differences in food entrainment among the gut clocks. Moreover, the clocks of ENs, SMCs, and MMs shifted their phase in response to daytime-restricted feeding, whereas ICC clocks remained unaffected even after three weeks of restricted feeding. These findings demonstrate that distinct intestinal cell types possess unique entrainment properties and that feeding rhythms can induce heterogeneous phase shifts within the gut clocks. Given that circadian disruption, such as that caused by shift work, contributes to intestinal disorders, this reporter system could provide a powerful platform to dissect the mechanisms linking intercellular circadian desynchrony to intestinal homeostasis. **HIGHLIGHTS:** A cell-type-specific circadian reporter mouse enables dissection of the chronoarchitecture of complex multicellular organs (e.g., the intestine) All five major intestinal cell types contain autonomous circadian oscillators peaking at night Enteric neurons in small intestine entrain to feeding cycles faster than that in colon Interstitial cells of Cajal in both the small intestine and colon do not entrain to feeding cycles Chemogenetic activation of enteric neurons mimics food entrainment, shifting their circadian phase.

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#### **The role and implications of mammalian cellular circadian entrainment.**

Crosby P. *FEBS Lett.* 2025 Nov 20.

The ability to align circadian phase to specific cues, or 'entrainment', is a defining feature of a circadian rhythm. Entrainment is critical for useful circadian function, as it enables organisms to determine the specific time of day to perform temporally restricted behavioural and physiological activities, ranging from sleep to cell division. While mammals have long been known to entrain their circadian rhythm, recent work has shed light on how this is achieved in every single cell, all of which maintain their own individual circadian oscillation. Here I will highlight the current understanding of how the major entraining cues of light, feeding and temperature are communicated to cells to alter their phase. Knowledge of the mechanisms of cellular entrainment has the capacity to impact both fundamental understanding of circadian rhythms and our application of cellular circadian research to real-world problems, including shift work.

[Lien vers l'article](#)

#### **Circadian rhythms in sexual behavior and their influence on reproductive outcomes in mice.**

Aten S, Blake C, Keister E, Veith A, Fishbein E, Ramirez-Plascencia O, et al. *bioRxiv.* 2025 Nov 6.

Circadian clocks coordinate mammalian reproductive physiology, and circadian misalignment (resulting from shift work, jet lag, etc.) is known to impair fertility. Despite the well-established links between clock function and reproductive success, it remains unclear whether male and female mice maintained under standard *ad libitum* feeding conditions exhibit circadian rhythms in the propensity for sexual behavior, and to what degree such timing influences reproductive outcomes. Using standardized mating paradigms in C57BL/6J mice, we identified a circadian rhythm in sexual behavior in both sexes, with peak sexual activity most often occurring at circadian time (CT) 13-16 and a trough at CT4-7. To test the functional significance of these rhythms, we conducted 1-hour mating trials across

four cohorts of C57BL/6J mice with pairs of mice having either aligned (e.g. male CT16 peak and female CT16 peak) or misaligned (e.g. male CT16 peak and female CT4 nadir) sexual behavior phases and monitored mating outcomes via ultrasound. While pregnancies were almost as frequent across all four cohorts, the numbers of live offspring were significantly more frequent when both the male and female mated at their peak phases than when both mice mated at their troughs. Notably, mating specifically during the male's behavioral peak increased the likelihood of successful delivery of pups, suggesting that male circadian phase is a key determinant of miscarriage vs successful birth. These findings establish a circadian rhythm in the propensity for sexual behavior under standard feeding and housing conditions and indicate that mating time-particularly relative to the male's circadian peak-can influence reproductive success. This insight provides a foundation for translational studies that explore whether intercourse timed to the circadian rhythms of the couple might help to increase fertility chances.

[Lien vers l'article](#)

### Homme

#### **Circadian rhythm disturbance impairs intestinal mucus barrier and immune microenvironment via sebatic acid-mediated gut dysbiosis.**

Cheng L, Wang X, Wang Q, Yin K, Wang B, Wu B, et al. *Microbiol Res.* 2026 Feb;303:128375.

Circadian rhythm disturbance caused by shift work has become increasingly prevalent, emerging as a risk factor for digestive diseases. Both the host's and the microbial metabolic pathways and functions might be markedly altered by circadian disruption. However, metabolic changes in the gut during shift work are poorly reported. Here, we demonstrated intestinal metabolome signatures in individuals with shift work disorder and identified sebatic acid as a symptoms-related metabolite. Shift work-related circadian rhythm disturbance leads to enhanced hepatic fatty acid  $\omega$ -oxidation and a significant increase in dicarboxylic fatty acids in feces. Among these, the increased sebatic acid impaired the intestinal mucus barrier by regulating composition of mucus-related gut bacteria, characterized by an increase in Muribaculaceae and a decrease in Akkermansia abundance, along with activated immune system characterized by increased B cell responses, thereby driving the occurrence of intestinal inflammation. The application of the inhibitor for CYP4A, a key  $\omega$ -hydroxylase in fatty acid oxidation, effectively improved intestinal dysfunction caused by circadian rhythm disturbance. Our findings provide a deep insight into understanding the role of circadian rhythm in maintaining intestinal homeostasis.

[Lien vers l'article](#)

#### **Chronotype, Night Shift Work, and Diurnal Salivary Cortisol Rhythms Among Healthcare Professionals.**

Fusz K, Deák A, Závodi P, Suszter G, Böröcz K, Szinger D, et al. *J Clin Med.* 2025 Oct 28;14(21).

Background: Chronotype is a determinant of tolerance to shift work; however, its physiological and psychological correlates remain insufficiently explored in healthcare workers. This study investigated associations between chronotype, perceived stress, sleep quality, and health behaviours in a large cohort of shift-working nurses and physicians. Additionally, diurnal salivary cortisol patterns were characterised in a physiological subsample. Methods: A cross-sectional study was conducted with 451 participants (77% female; mean age  $42 \pm 11$  years) completing validated instruments, including the Perceived Stress Scale (PSS), Athens Insomnia Scale (AIS), Patient Health Questionnaire Somatic Symptom Scale (PHQ-15), and reduced Morningness-Eveningness Questionnaire (rMEQ). In addition, a prospective pilot substudy was performed in a physiological subsample of nurses ( $n = 40$ ), in which

salivary cortisol was measured at three time points during both day and night shifts. Results: Evening chronotype exhibited a higher prevalence of insomnia (70%) and elevated AIS scores ( $8.2 \pm 4.2$ ,  $p < 0.001$ ). In the physiological subsample, evening types demonstrated a significantly attenuated cortisol awakening response ( $6.5 \pm 5.1$  nmol/L,  $p = 0.02$ ) and a flatter diurnal cortisol slope during day shifts ( $p = 0.01$ ). Logistic regression indicated that increased age, somatic symptom burden, and perceived stress were significant risk factors for insomnia, whereas morningness was protective (OR = 0.89,  $p = 0.003$ ). Conclusions: Evening chronotype among healthcare professionals is associated with altered hypothalamic-pituitary-adrenal axis regulation and impaired sleep quality. These findings highlight the potential utility of chronotype-based scheduling and behavioural interventions targeting circadian misalignment to improve occupational health outcomes in shift-working populations.

[Lien vers l'article](#)

### **Bidirectional genetic associations between chronotype and shift work: A Mendelian randomization study.**

Kim Y, Lee J, Min J, Park MY, Lee SY, Lee S, et al. *Chronobiol Int.* 2025 Dec;42(12):1736-43.

Shift work, particularly night shifts, disrupts circadian rhythms and contributes to various adverse health outcomes. However, the degree of individual adaptability varies considerably, suggesting complex interactions between genetic factors, such as chronotype, and shift work exposure. To explore these interactions, we conducted a bidirectional Mendelian randomization (MR) analysis using genome-wide association study (GWAS) data from European populations. We examined causal associations between chronotype and shift work patterns (limited, intermittent, regular). A significant inverse causal effect was identified for intermittent shift work influencing morning chronotype (IVW:  $\beta = -0.0032$ , SE = 0.0013,  $p = 0.0114$ ; weighted median:  $\beta = -0.0041$ , SE = 0.0018,  $p = 0.0213$ ). This suggests that intermittent shift work may impact circadian preferences genetically linked to chronotype. Conversely, genetic predisposition toward morningness exhibited a notable but statistically non-significant inverse relationship with regular shift work. Our findings highlight that shift work and chronotype interact bidirectionally, potentially via circadian disruption and melatonin dysregulation. These insights could inform targeted health protection strategies for shift workers. Further studies should confirm these genetic interactions across diverse populations and clarify the underlying chronobiological mechanisms to enhance occupational health policies.

[Lien vers l'article](#)

### **Circadian Phase Estimation From Ambulatory Wearables With Particle Filtering: Accuracy Depends on Initialization, Recording Duration, and Light Exposure.**

Weed L, Jamgochian A, St Hilaire MA, Cheng P, Kochenderfer MJ, Zeitzer JM. *J Biol Rhythms.* 2025 Dec 4:7487304251392289.

While current mathematical models of human circadian rhythms accurately predict circadian phase responses to light in controlled laboratory experiments, they show reduced performance in the real world, especially among shift workers with irregular schedules and downstream erratic light diets. The source of the discrepancy between in-laboratory and ambulatory performance remains unclear. We evaluate the impact of initialization strategy, recording duration, and light exposure characteristics on model performance using wearable data from both individuals on regular schedules and shift workers. We implement a probabilistic initialization framework to account for unknown starting phase and assess model performance in prediction of phase from light input data against an in-lab measure of circadian phase (dim light melatonin onset). In participants with regular schedules, accuracy improved with longer recordings, while shift workers show no accuracy gains when having more nights of data. Light exposure patterns differed significantly between groups, with brighter and more regular day-to-day light exposure being weakly to moderately associated with improved model estimates, whereas

fragmented patterns of light exposure increased uncertainty. These findings suggest that current models require adaptation, particularly in light sensitivity, to generalize to free-living, irregular conditions and support robust, scalable circadian tracking in real-world populations.

[Lien vers l'article](#)

### **"Feeding the Rhythm"-Effects of Food and Nutrients on Daily Cortisol Secretion: From Molecular Mechanisms to Clinical Impact.**

Paragliola RM, Marchetti M, Montagna C, Corsello SM, Peluso G. *Int J Mol Sci.* 2025 Nov 20;26(22).

Daily rhythms define physical, mental, and behavioral changes that the body experiences over a 24 h cycle. The light-dark cycle plays a crucial role in regulating daily rhythms, but other factors such as food intake, stress, and physical activity also affect them. Cortisol secretion exhibits one of the largest endocrine amplitudes, with an early morning peak and late-evening nadir driven by the suprachiasmatic nucleus and hypothalamus-pituitary-adrenal axis, representing the most robust endocrine output of the circadian system. Beyond photic cues, feeding is a potent non-photoc zeitgeber that entrains peripheral oscillators and dynamically shapes cortisol secretion. This narrative review aims to explore the effect of feeding in modulating cortisol secretion. The misalignment of the daily cortisol-secretion rhythm, with blunted cortisol awakening response and elevated evening levels, leads to metabolic syndrome, psychiatric disorders, shift work, and jet lag. In endogenous hypercortisolism, the loss of rhythmicity rather than absolute exposure best predicts risk. Therefore, we discuss practical nutritional tools as opportunities to partially restore rhythmic hypothalamus-pituitary-adrenal axis physiology.

[Lien vers l'article](#)

### **Exploratory development of biomarkers for neurobehavioral performance impairment during sleep loss: comparison across multiple types of sleep deprivation.**

Uyhelji HA, Nicholson SJ, Nesthus TE, Beckel JL, Klerman EB, Czeisler CA, et al. *BMC Genomics.* 2025 Nov 14;26(1):1043.

**BACKGROUND:** Inter-individual variation in response to insufficient or altered timing of sleep presents a challenge for the development of personalized approaches to fatigue monitoring and mitigation. Insufficient sleep has adverse health impacts, can result in impaired neurobehavioral performance, and can substantially increase the risk of injury and even mortality in safety-critical operations such as transportation. The present study provides a detailed exploration of physiological, neurobehavioral, and gene expression changes during sleep restriction, acute total sleep deprivation, and altered timing of sleep among 59 healthy volunteer participants who completed a 10-day inpatient study. **RESULTS:** Reducing the quantity or altering the timing of sleep significantly impacts self-reported estimates of sleep duration, polysomnography-recorded sleep stages, and neurobehavioral performance test results. Impaired neurobehavioral performance was associated with transcriptomic changes in gene expression. A comparison of current and prior research on total sleep deprivation indicated that reproducible candidate gene expression biomarkers exist for at least one metric of attention, specifically, Psychomotor Vigilance Test (PVT) lapses. **CONCLUSIONS:** Candidate biomarkers of fatigue-related impairment were identified that responded to single neurobehavioral performance endpoints, as well as those that responded to multiple types or metrics of performance. Reproducible identification of biomarker candidates for PVT lapses during total sleep deprivation increases confidence in the ability to develop a molecular approach to fatigue-related impairment detection, while novel discoveries expanded the list of candidate genes to other impairment metrics. Molecular biomarkers for neurobehavioral performance impairment represent a potentially valuable tool to more precisely monitor the neurobehavioral performance deficits resulting from sleep loss, and further research and validation could eventually augment fatigue risk management practices that

historically emphasize scheduling and rest opportunities. The data generated from self-assessment, polysomnography, neurobehavioral performance, and molecular investigations provide a wealth of information made publicly available for further data mining and scientific advancements. TRIAL REGISTRATION: ClinicalTrials.gov, TRN: NCT04211506, Registered 23 December 2019.

[Lien vers l'article](#)

### **Gut microbiota circadian rhythms: a key regulator of immunometabolic homeostasis.**

Zhao Z, Wu S, Wang T, Zhao Y. *Acta Biochim Biophys Sin (Shanghai)*. 2025 Nov 27.

Emerging studies have revealed that disruptions in circadian crosstalk between the gut microbiota and the host play an essential role in the pathogenesis of metabolic disorders. Under physiological conditions, host circadian clocks regulate microbial diurnal oscillations through rhythmic behaviors, including feeding patterns and sleep-wake cycles. This temporal regulation manifests as robust 24-hour oscillations in microbial community composition, spatial organization, and metabolic activity. These rhythmic microbial signals and their metabolic outputs are subsequently translated into host immune modulation, establishing a bidirectional temporal dialogue between the host and microbiota. Modern lifestyle disruptions, including erratic eating patterns and shift work, desynchronize this temporal dialogue, leading to the loss of microbial rhythms, impaired intestinal barrier function, maladaptive immune responses, chronic inflammation, and systemic metabolic dysregulation. This review delineates the mechanisms through which host-microbiota circadian crosstalk governs immunometabolic homeostasis, provides a mechanistic framework for understanding immunometabolic diseases, and highlights therapeutic strategies that target microbial rhythms to reset host immunity and metabolism.

[Lien vers l'article](#)

### **The Biological Clock Influenced by Burnout, Hormonal Dysregulation and Circadian Misalignment: A Systematic Review.**

Ungurianu A, Marina V. *Clocks Sleep*. 2025 Nov 3;7(4).

Burnout is increasingly recognized as both a psychosocial and a chronobiological disorder characterized by endocrine dysregulation and circadian disruption. It arises from chronic occupational stress and manifests through psychological, physical, and physiological symptoms. Although psychosocial determinants are well established, the biological and chronobiological mechanisms, particularly those involving cortisol and melatonin, remain less explored. This systematic review synthesizes current evidence on hormonal and circadian dysregulation in burnout and complements it with exploratory observational data from healthcare professionals. Peer-reviewed studies evaluating endocrine or circadian biomarkers in individuals with burnout were systematically reviewed. In addition, an exploratory observational analysis was carried out among 195 Romanian clinicians using an adapted Maslach Burnout Inventory. Morning salivary cortisol was measured once at 9 a.m. in a small subsample ( $n = 26$ ) to provide preliminary physiological data. Because only a single time point was obtained, these values were interpreted as indicative of stress-related activation rather than circadian rhythm. Thirty-seven studies met the inclusion criteria. Across the literature, burnout was associated with altered HPA-axis activity, blunted diurnal cortisol variation, and irregular melatonin secretion related to shift work and disrupted sleep-wake cycles. Complementary exploratory data from our Romanian cohort indicated strong correlations between burnout severity, physical symptoms, and higher morning cortisol values among shift-working clinicians. These findings are preliminary and not representative of full circadian profiles. Burnout should be considered both a psychosocial and a systemic disorder influenced by endocrine and circadian dysregulation. Recognizing alterations in cortisol and melatonin as objective indicators may facilitate earlier detection and inform chronobiological interventions such as optimized scheduling, light exposure management, or

melatonin therapy. The observational data presented here is preliminary and intended to generate hypotheses; future research should employ repeated cortisol sampling under controlled Zeitgeber conditions to confirm circadian associations.

[Lien vers l'article](#)

### **Relationship between Circadian Rhythms and Subjective Sleep Quality in Shift Workers.**

Tanaka S, Matsunaga D, Tanaka Y, Tajima T, Inoue H, Muraoka S, et al. *Annu Int Conf IEEE Eng Med Biol Soc.* 2025 Jul;2025:1-4.

The phase shift of circadian rhythm by night shift work has caused concern since it may lead to mental and physical disorders. In this study, we estimated the circadian rhythm phase of core body temperature (CBT) in nurses working night shifts and verified whether phase shift occurred after night shift work. We also investigated the relationship between circadian rhythm phase shift and subjective sleep quality. The results showed that the circadian rhythm phase was delayed  $46 \pm 33$  minutes and subjective sleep quality worsened after night shift work. Our findings suggest an association between delayed circadian phase and poorer subjective sleep quality. We hope that our study will contribute to improving the sleep of shift workers. **Clinical Relevance** This study suggests that a relationship exists between delay of circadian rhythm and decline of subjective sleep quality. Understanding this relationship may reduce sleep problems caused by night shift work.

[Lien vers l'article](#)

### **A Randomized Controlled Crossover Lifestyle Intervention to Improve Metabolic and Mental Health in Female Healthcare Night-Shift Workers.**

Robinson LA, Lennon S, Pegel AR, Strickland KP, Feeley CA, Watts SO, et al. *Nutrients.* 2025 Oct 24;17(21).

**Background:** Circadian rhythm disruption caused by shift work alters metabolic and hormonal pathways, which accelerates chronic disease onset, leading to decreased quality and quantity of life. This study aimed to determine whether a practical lifestyle intervention emphasizing nutrition timing and recovery habits could mitigate the metabolic and psychological effects of night-shift work. We conducted a randomized, open-label, crossover trial with two 8-week periods. **Methods:** Female healthcare workers ( $n = 13$ ) aged 18-50 years with a body mass index (BMI) between 27 and 40 kg/m<sup>2</sup> and working predominantly night shifts ( $\geq 30$  h/week for  $\geq 6$  months) were randomized. During the 8-week intervention phase, participants received daily text messages with guidance on food, sleep/rest, and physical activity and were provided with whey protein isolate powder and grain-based snack bars to consume during work shifts. The program targeted improved nutrient timing, adequate protein intake, and structured rest without formal exercise training, allowing evaluation of dietary and behavioral effects feasible for this population. Total caloric ( $\sim 30$  kcal/kg lean mass) and protein (2 g/kg lean mass) needs were measured, along with sleep/rest goals of 6-8 h/24 h. Primary outcome measures were change in visceral fat percentage (VF%) by DXA and mental/physical quality of life (RAND SF-12). Secondary outcomes included fasting triglycerides, ALT, blood glucose, LDL, actigraphy, and fecal microbiome. Mixed-design two-way ANOVA was conducted to assess the effects of group (immediate [IG] and delayed [DG]), time (baseline, 8-week crossover, and week 16), and Group  $\times$  Time (G $\times$ T) interactions, and Bonferroni correction was applied to post hoc t-tests. **Results:** Eleven participants completed the study. Both groups increased dietary protein intake ( $p < 0.001$ ), and a G $\times$ T interaction for VF% ( $p = 0.039$ ) indicated DG reduced VF% to a greater extent ( $-0.335 \pm 0.114\%$  ( $p = 0.003$ ) vs.  $0.279 \pm 0.543\%$  ( $p = 0.158$ )). Mental and physical QOL, objectively measured physical activity and sleep, serum lipids and inflammatory markers, and fecal microbiota remained unchanged ( $p > 0.05$  for all G $\times$ T). **Conclusions:** The findings suggest that targeted nutrition and recovery strategies can modestly improve dietary intake and visceral fat; however, consistent with prior work, interventions

without structured exercise may be insufficient to reverse broader metabolic effects of circadian disruption. This trial was registered at ClinicalTrials.gov, identifier: NCT06158204, first registered: 28 November 2023.

[Lien vers l'article](#)

### **Wrist temperature as a sleep marker in actigraphy.**

Rodrigues Neto C, Carvalho F, Grassi-Kassisse D, Caumo W, Ximenes da Silva A, Crispim CA, et al. *Chronobiol Int.* 2025 Dec 1:1-7.

Sleep is closely associated with reductions in core body temperature (CBT), leading to heat loss through the skin. This effect manifests as an increase in distal skin temperature, a hallmark of sleep onset. Actigraphy, a wearable technology for monitoring sleep and circadian rhythms, now includes models with integrated temperature sensors. The present study aimed to determine whether a skin temperature sensor embedded in an actigraph could yield data to more accurately define sleep onset and offset. We collected activity and distal skin temperature data from participants residing in different Brazilian cities with diverse climates, as well as from night-shift workers. The relationship between temperature changes and sleep transitions was analyzed. Wrist temperature consistently rose slightly before and significantly after sleep onset, and decreased slightly before and markedly after sleep offset, regardless of environmental temperature or time of day. These patterns were consistent across latitudes and seasons, robust, and directionally opposite between onset and offset. Overall, the findings support wrist temperature as a physiological marker for contextualizing sleep-wake transitions in actigraphy. Incorporating temperature sensors into actigraphy devices may enhance large-scale, non-invasive sleep monitoring and improve the assessment of sleep in individuals exposed to varied environmental conditions.

[Lien vers l'article](#)

### **Melatonin and Cortisol Suppression and Circadian Rhythm Disruption in Burnout Among Healthcare Professionals: A Systematic Review.**

Ungurianu A, Marina V. *Clin Pract.* 2025 Oct 29;15(11).

Background: Burnout among healthcare professionals is increasingly recognized as a syndrome with biological correlations. Beyond psychosocial factors, circadian misalignment, sleep disturbances, and hormonal dysregulation-particularly involving melatonin and cortisol-are emerging as relevant mechanisms. Methods: We systematically reviewed studies published between 2015 and 2025 examining associations between burnout, melatonin, circadian disruption, sleep quality, and related biomarkers in healthcare workers. Results: Across 14 included studies, burnout was associated with suppressed melatonin secretion, cortisol dysregulation, and circadian misalignment, including social jet lag and poor sleep quality. Night-shift nurses consistently displayed greater circadian disruption and higher burnout scores than day-shift colleagues. Evidence also suggests that environmental and interventional approaches-such as optimizing daylight exposure and melatonin supplementation to improve sleep quality and cognitive performance-may mitigate circadian disruption and occupational fatigue. Conclusions: Burnout should be recognized as a biopsychosocial syndrome with measurable chronobiological correlates. Future research should integrate circadian biomarkers into occupational health assessments and evaluate preventive strategies aimed at preserving circadian health in healthcare professionals.

[Lien vers l'article](#)

**Circadian rhythm disruption is related to self-diagnosis of mental illness.**

Propper RE, Kang J, Sawyer M. *Discov Ment Health*. 2025 Nov 27.

**PURPOSE:** The goal of this research was to examine the relationship between self-reported circadian disruption during the week and on weekends, and self-diagnosis of mental illness. It was hypothesized that circadian disruption would be associated with mental illness self-diagnosis. **METHODS:** Using previously collected data wherein undergraduate students completed a series of questionnaires we examined Weekday bedtime/waketime variability, measured via question two from the Sleep Disorders Symptom Check List - 25, and calculated social jetlag score, examining these as a function of Mental Illness Diagnosis Category and Sex. **RESULTS:** Increased circadian disruption was significantly associated with more self-diagnosed mental illnesses ( $r = .10$ ,  $p < .01$ ), as well as with increased uncertainty about mental health status ( $r = .10$ ,  $p = .004$ ), while decreased circadian disruption was associated with fewer mental illnesses. Women reported more self- (Women  $X = 0.47$ ,  $sd = 0.74$ ; Men  $X = 0.26$ ,  $sd = 0.67$ ) and clinical (Women  $X = 0.61$ ,  $sd = 1.0$ ; Men  $X = 0.24$ ,  $sd = 0.24$ ) mental illness diagnoses than men. **CONCLUSIONS:** It is not known if the circadian disruption-mental illness self-diagnosis and uncertainty relationship is directly casual, or mediated by negative behaviors associated with such disruption, including social media usage or sleep loss. Regardless, the findings have implications for shift workers, college students, and for other individuals who do not maintain a 'regular' sleep schedule.

[Lien vers l'article](#)

**Changes in sleep timing and duration during and after rotating shifts can be explained without the assumptions of the shifts of the circadian phase of sleep and loss of its circadian control.**

Putilov AA, Verevkin EG. *Sleep Breath*. 2025 Nov 5;29(6):342.

**PURPOSE:** Morning and night rotating shifts cause misalignment of the sleep-wake cycle in relation to the biological night. We examined whether, to explain sleep timing and duration during and after these rotating shifts, it is necessary to propose the shifts of the circadian phase of sleep and disruption of its circadian control. **METHODS:** A model of sleep-wake regulation was applied to simulate sleep times reported by German shiftworkers for 6 phases of the cycle of rotating shiftwork (days on and off for morning, evening, and night shifts). **RESULTS:** To simulate these sleep times, the assumptions of circadian phase shifts and loss of the permanent control of the circadian clocks over the sleep-wake cycle were not required. The simulations additionally predicted sleep times recently reported by Uruguayan and Norwegian shiftworkers for these 6 phases of shiftwork. **CONCLUSIONS:** Sleep deprivation during night shifts and irrecoverable loss of sleep prior to morning shifts can be responsible for the adverse health effects of rotating shiftwork. The extensions of the wake phase of the sleep-wake cycle before morning shifts and during night shifts can directly compromise the chronophysiological organization of the organism via disturbing the peripheral rather than central circadian clocks governing the sleep-wake cycle.

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**Past shift work, melatonin receptor gene polymorphisms, and hyperhomocysteinemia among retired workers: The Dongfeng-Tongji cohort study.**

Mo T, Zhang W, Wang Y, Gao H, Li W, Peng R, et al. *Sleep Health*. 2025 Nov 4.

**OBJECTIVES:** This study aims to investigate the associations between past shift work and hyperhomocysteinemia and further explore the modification effects of MTNR1A rs12506228 and MTNR1B rs10830963 (2 single-nucleotide polymorphisms in melatonin receptor genes) on this association. **METHODS:** Based on the data of 14,043 retirees from the Dongfeng-Tongji cohort,

multivariate logistic regression was used to analyze the association between past shift work duration and hyperhomocysteinemia, and gene-environment interaction analysis was performed. RESULTS: Among 14,043 retirees from the Dongfeng-Tongji cohort, we found that retirees with longer durations of past shift work were significantly associated with higher odds of hyperhomocysteinemia (odds ratio and 95% confidence interval for per 5-year increase: 1.04 [1.02-1.06],  $P < .001$ ). Furthermore, MTNR1B rs10830963 significantly exacerbated the effect of long-duration past shift work on hyperhomocysteinemia odds ( $P$ -trend  $< .001$ ,  $P$ -interaction = .01), and MTNR1A rs12506228 had a joint effect with past shift work on hyperhomocysteinemia odds ( $P$ -trend  $< .001$ ,  $P$ -interaction = .89). CONCLUSIONS: The long-term hazard of shift work on hyperhomocysteinemia persisted from past to post retirement, and such association could be modified by MTNR1B rs10830963.

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### **The association between circadian rhythm and sleep disorder on neurodegenerative parameters in shift-working healthcare workers.**

Özkan K, Barut D, Çelik H. *Chronobiol Int.* 2025 Nov 3:1-9.

Sleep quality plays a critical role in maintaining both mental and physical health. Circadian rhythm and sleep disorders involve disruptions in the alignment between internal biological rhythms and environmental or social cues. This study aims to investigate the relationship between circadian rhythm/sleep disturbances and neurodegenerative markers in shift-working healthcare professionals. This study was conducted at Harran University Medical Faculty Hospital and included 30 night-shift healthcare workers (subject group) and 29 daytime workers (control group). Data were collected via a 25-item questionnaire on sociodemographic characteristics and work conditions, administered through face-to-face interviews. Participants also completed the Pittsburgh Sleep Quality Index (PSQI) and the Morningness-Eveningness Questionnaire (MEQ). Single morning blood samples were analyzed for neurodegenerative biomarkers (a calcium-binding protein called S100B and neuron-specific enolase, NSE), and melatonin levels were assessed from a single morning blood plasma sample. Between-group comparisons were made for questionnaire scores and biomarker levels. In the subject group, pre- and post-shift biomarker levels were also compared. The relationship between sleep quality and biomarker levels was examined. The subject group included 14 females (46.7%) and 16 males (53.3%); the control group included 15 females (51.7%) and 14 males (48.3%). The median duration of shift work was 12 h (range: 8-24). Compared to the control group, the shift workers had significantly higher PSQI scores ( $p = 0.002$ ), lower MEQ scores ( $p = 0.003$ ), elevated S100B levels ( $p = 0.003$ ), and reduced melatonin levels ( $p = 0.037$ ). Within the subject group, NSE levels were significantly higher after the shift compared to pre-shift values ( $p = 0.010$ ). This study suggests that post-shift insomnia in night-shift healthcare workers is associated with elevated NSE levels, while chronic shift work is linked to increased S100B and decreased melatonin. These findings support a potential association between circadian rhythm/sleep disturbances and neurodegenerative markers.

[Lien vers l'article](#)

### **Temporal Patterns of Eating and Diet Composition of Night Shift Workers Are Influenced More by Shift Type than by Chronotype.**

Phoi YY, Dorrian J, Rogers M, Leung GW, Davis R, Clark AB, et al. *Nutrients.* 2025 Nov 14;17(22).

Background/Objectives: Shift work and chronotype influence timing and type of food consumed, yet their combined influence is unclear. This study determined differences between temporal patterns of eating (times of first (FEO), last (LEO), and largest eating occasions (LarEO), duration of eating window (DEW), eating frequency) and nutrient intake of night shift workers on and off shift and the additional influence of chronotype. Methods: Participants ( $46.6 \pm 10.2$  years, BMI:  $33.9 \pm 5.6$  kg/m<sup>2</sup>), male/female: 57/72) completed work/sleep/food diaries, and the Composite Scale of Morningness.

Dietary profiles were characterized by day type as follows: morning shift (MS), 1st night shift (1stNS), subsequent night shifts (SNS), 1st day off after night shifts (1stDONS), or other days off (DO). Results: Across day types, there were significant differences in FEO ( $p < 0.001$ ), LEO ( $p < 0.001$ ), LarEO ( $p = 0.025$ ), DEW ( $p < 0.001$ ), eating frequency ( $p = 0.003$ ), total energy ( $p = 0.022$ ), and fibre intake ( $p < 0.001$ ). Compared to MS, all night shifts had later FEO, LEO, and LarEO; 1stNS had longer DEW and higher fibre but no differences in frequency, energy, and macronutrient intake. Greater morningness was associated with earlier FEO, LEO, LarEO, and lower %energy from fat and saturated fat. Effect of chronotype on temporal eating patterns was not different across day types; there was a significant, positive relationship between morningness and %energy from carbohydrate (%Energy(CHO)) on MS ( $p = 0.004$ ) and 1stDONS ( $p = 0.040$ ). Conclusions: Dietary habits of night shift workers vary by shift schedule and degree of morningness. Further studies will confirm if shift schedule is more influential than chronotype on shift workers' dietary habits.

[Lien vers l'article](#)

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Özkan K, Barut D, Çelik H. *Chronobiol Int.* 2025 Nov 3:1-9.

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Mo T, Zhang W, Wang Y, Gao H, Li W, Peng R, et al. *Sleep Health.* 2025 Nov 4.

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**Circadian clock in thyroid cancer: Effects and mechanisms.**

Li M, Jia C, Yu X. *Chronobiol Int.* 2025 Nov 17:1-7.

The circadian clock, an endogenous timekeeping system governed by core genes such as BMAL1, CLOCK, PER, and CRY, regulates physiological processes critical to thyroid function. Disruption of circadian rhythms (resulting, for example, from shift work and/or exposure to artificial light at night) has emerged as a significant risk factor for thyroid carcinogenesis. This review elucidates the dual role of circadian rhythms in maintaining thyroid homeostasis and their mechanistic contributions to cancer initiation, progression, and therapy resistance. We highlight molecular pathways linking clock dysregulation to oncogenic signaling, immune evasion, and metabolic reprogramming, while proposing chronotherapy as a novel precision oncology strategy.

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**The associations of shift work exposure and chronotype with sleep problems among Hong Kong nurses: results from the HKNight cohort baseline.**

Li B, Lee PMY, Huss A, Ma YTJ, Chan JW, Wing YK, et al. *BMC Nurs.* 2025 Nov 11;24(1):1386.

BACKGROUND: Shift work is often associated with poor sleep outcomes; however, findings vary among different individual chronotypes. This study aimed to investigate the associations between various shift work exposures, individual chronotypes, and scale-assessed sleep quality and insomnia among Hong Kong nurses. METHOD: The study was conducted between March 2022 and February 2023. The participants completed a self-reported online questionnaire. Sleep outcomes were assessed using the Pittsburgh Sleep Quality Index (PSQI score  $\geq 6$  indicates poor sleep quality) and the Insomnia Severity Index (ISI score  $\geq 8$  indicates insomnia). Chronotype was measured using the Munich Chronotype Questionnaire. Multivariate ordinal logistic regression models were used to estimate the associations. RESULTS: We recruited 718 full-time nurses and 208 daytime office workers. Compared with daytime office workers, night shift nurses had significantly greater odds of having a PSQI score  $\geq 6$  (adjusted odds ratio [aOR] = 3.38, 95% CI: 2.37–4.81) and an ISI score  $\geq 8$  (aOR = 1.69, 95% CI: 1.18–2.43). Additionally, workers with an evening chronotype presented greater odds of having a PSQI score  $\geq 6$  compared with those with a morning type (aOR = 1.69, 95% CI: 1.17–2.44). Among shift nurses, the odds of a PSQI score  $\geq 6$  increased with the number of night shifts worked in the previous month ( $P$ (trend) = 0.028). Furthermore, the start time of afternoon shifts demonstrated a quadratic relationship with nurses whose PSQI score was  $\geq 6$  ( $P$ (trend)  $< 0.001$ ). Poor mental health significantly mediated the effect of night shift work on poor sleep. CONCLUSION: Night shift work and evening chronotype were significantly associated with poor sleep quality and insomnia among Hong Kong nurses, and this association was partially mediated by poor mental health. Optimizing shift schedules (particularly afternoon timing) and enhancing mental health support may mitigate these effects. Chronotype-aligned scheduling may not improve sleep quality among nurses. SUPPLEMENTARY

INFORMATION: The online version contains supplementary material available at 10.1186/s12912-025-03990-1.

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**The effects of taxi drivers' chronotype characteristics on daily life: Daytime sleepiness, stress, fatigue, social relationships, traffic accident experience, and general health.**

Kocoglu-Tanyer D, Bardak F, Koc E. *Chronobiol Int.* 2025 Dec 2:1-10.

This study focused on taxi drivers to investigate the relationship between chronotype characteristics and daytime sleepiness, stress, fatigue, social relationships, car accidents, and general health. This cross-sectional study was conducted between September 2024 and January 2025. The sample comprised 229 taxi drivers from two bordering provincial centers in Türkiye. Data were analyzed using one-way ANOVA (with partial eta-squared), chi-square, multiple regression, and logistic regression analyses. One in five participants (20.5%) had an evening chronotype. Participants with evening chronotypes experienced more daytime sleepiness ( $\eta(2) = .096$ ), stress ( $\eta(2) = .182$ ), fatigue ( $\eta(2) = .068$ ), and were involved in more car accidents (Cramer's  $V = .19$ ). They were also more disadvantaged in terms of social relations and overall health perception. The results showed that, when confounding factors were controlled, chronotype had an impact on daytime sleepiness, stress, fatigue, and social relationships. It was also found that work status and shift work were associated with increased fatigue and a higher incidence of car accidents. At the same time, work status was also related to high daytime sleepiness and negative social engagement. Chronotype characteristics have an impact on various variables related to traffic safety. Taxi drivers with an evening chronotype are particularly disadvantaged. The development of a chronotype-based work schedule can be considered a means to reduce levels of sleepiness, stress, and fatigue among taxi drivers, thereby improving their overall health and social relationships, and potentially preventing traffic accidents.

[Lien vers l'article](#)

**Brain connectivity changes associated with acute sleep deprivation: a systematic review.**

Hosang S, Wong K, Mlinarevic D, Krivoruk B, Ravi H, Hamilton D, et al. *Neurol Sci.* 2025 Dec;46(12):6457-77.

**STUDY OBJECTIVES:** Sleep deprivation related changes in brain connectivity have been poorly characterized but have important implications for delirium patients and shift workers. This study aimed to describe the functional and effective brain connectivity changes after acute sleep deprivation (ASD). **METHODS:** A systematic search of OvidSP Embase, PubMed, and Web of Science databases was conducted for studies published between January 1, 1947, to September 11, 2024. Selected studies examined brain connectivity strength or topology, estimated by electroencephalography, functional magnetic resonance imaging, functional near-infrared spectroscopy, magnetoencephalography, or positron emission tomography, after ASD. Data extracted from eligible studies included primary outcomes: functional neuroimaging modality, type of brain connectivity analyses and results of brain connectivity analyses. Studies were grouped for synthesis based on functional neuroimaging modality and connectivity measures. **RESULTS:** The search produced 1015 articles. 357 duplicates were removed, and 658 articles were screened. Of these, 250 underwent full-text review and 141 were excluded. This produced 109 articles for review. Results demonstrated that the methodology and analyses employed to study functional and effective connectivity after ASD were heterogeneous. However, despite this heterogeneity, studies demonstrated that ASD leads to robust and consistent alterations in the functional/effective connectivity of multiple brain networks, particularly the default mode network. **CONCLUSIONS:** This review summarizes the key functional and effective connectivity changes associated with ASD. This work will serve as a reference and resource for researchers and

clinicians focused on delirium and related conditions, in addition to those interested in ASD and shift work.

[Lien vers l'article](#)

### **The role of circadian rhythm disruptions in the diabetes pathogenesis.**

Karadeniz A. *Endocr Regul.* 2025 Jan 1;59(1):206-16.

Diabetes mellitus has become a major global health concern with increasing prevalence worldwide. Recent studies have highlighted the critical role of the circadian rhythm, the body's internal biological clock, in the pathogenesis of diabetes. The circadian system regulates glucose metabolism, insulin secretion, and energy homeostasis. Modern lifestyle factors such as sleep disturbances shift work and irregular eating patterns disrupt circadian rhythms promoting insulin resistance and glucose intolerance. At the molecular level, mutations or altered expression of clock genes contribute to diabetes development. Clinical and experimental evidence suggests that maintaining the circadian integrity can reduce the diabetes risk and the chronotherapy time-based treatment approaches may enhance the therapeutic efficacy. The future advances including genetic profiling, AI-assisted monitoring and microbiota modulation hold promise for improved diabetes management. This review comprehensively examines the relationship between diabetes and circadian disruption emphasizing the importance of circadian biology in preventing and treating the metabolic diseases.

[Lien vers l'article](#)

### **The gut-brain-circadian axis in anxiety and depression: a critical review.**

Bautista J, Hidalgo-Tinoco C, Di Capua Delgado M, Viteri-Recalde J, Guerra-Guerrero A, López-Cortés A. *Front Psychiatry.* 2025;16:1697200.

Anxiety and depressive disorders rank among the most prevalent psychiatric conditions worldwide, yet remission rates remain unsatisfactory despite advances in pharmacological and psychotherapeutic interventions. The gut-brain axis has emerged as a transformative framework for understanding these disorders, emphasizing bidirectional communication between the central nervous system, the enteric nervous system, the endocrine and immune systems, and the gut microbiota. Preclinical studies demonstrate that germ-free or dysbiotic states exaggerate hypothalamic-pituitary-adrenal (HPA) reactivity, remodel synaptic plasticity, and induce anxiety- and depression-like behaviors, while fecal microbiota transplantation confirms the causal influence of microbial communities. Mechanistically, neural (e.g., vagal), endocrine (e.g., cortisol), immune (e.g., cytokine), and metabolic (e.g., short-chain fatty acids, tryptophan metabolites, bile acids) pathways converge to regulate mood and stress resilience. An underappreciated yet critical dimension of this model is circadian rhythmicity. Both host endocrine cycles and microbial communities exhibit diurnal oscillations that synchronize metabolism, immune activity, and neural signaling. Disruption of these rhythms, through factors such as sleep disturbance, irregular feeding, or shift work, alters microbial diversity, dampens metabolite oscillations, destabilizes HPA regulation, and enhances neuroinflammation, thereby amplifying vulnerability to psychiatric disorders. Collectively, evidence supports a model in which anxiety and depression are systemic conditions arising from integrated neural, immune, endocrine, metabolic, and circadian dysregulation, rather than isolated brain-based pathologies. This reconceptualization positions microbial taxa and metabolites as candidate biomarkers and therapeutic targets. Precision interventions, ranging from diet and psychobiotics to fecal microbiota transplantation, chrononutrition, and immune-modulatory strategies, offer promising avenues for personalized psychiatry.

[Lien vers l'article](#)

**The intricate interplay between circadian rhythm, androgen signaling, hormone therapy, and cellular senescence in prostate cancer.**

Heidari Horestani M, Baniahmad A. *Cancer Metastasis Rev.* 2025 Nov 20;44(4):84.

Prostate cancer (PCa) is the second most diagnosed cancer and the fifth leading cause of cancer death among men worldwide. Androgen receptor (AR), as a ligand-activated transcription factor, is important for both prostate development and PCa progression. Understanding the molecular mechanisms of prostate carcinogenesis has led to the development of therapeutic strategies targeting AR. Inhibiting AR is currently the gold standard for hormone therapy. However, eventually resistance to therapy occurs. The activation of AR by supraphysiological androgen levels (SAL) used currently in clinical trials paradoxically also inhibits PCa progression and induces cellular senescence. Interestingly, circadian rhythm controls hormone biosynthesis including androgens. Intriguingly, SNPs in several clock genes have been associated with PCa risk linking increased cancer risk with day-night shifts. Here, we discuss whether the efficacy of hormone therapeutics depends on the biological clock. It emerges that androgens control the expression of clock genes also intersecting with SAL-induced cellular senescence suggesting a complex and understudied network that governs PCa progression. This review highlights the multifaceted roles of AR signaling in PCa, emphasizing its ability to promote cellular senescence by AR-targeted therapy via genomic and non-genomic pathways and crosstalk with the regulation of circadian clock genes. The intricate interplay between circadian rhythm, androgen signaling, and cellular senescence presents a promising yet underexplored research area in PCa and suggests a multilayered regulatory network that could shape PCa progression and treatment outcomes. Unraveling this network may uncover novel chronotherapeutic strategies and provide new insights into disease, prognosis, and therapy options.

[Lien vers l'article](#)

**Challenges of after-hours pediatric imaging.**

Aquino MR, Shah J, Kaplan SL. *Pediatr Radiol.* 2025 Nov 28.

The after-hours period presents unique challenges for pediatric radiologists. These stem from the higher percentage of high acuity/emergent studies, limited staffing, and the adverse effects of non-traditional hours on radiologists' health and performance. This article describes the current landscape of after-hours pediatric radiology coverage, workflow, and staffing challenges, and reviews the impact that disruptions in circadian rhythm can have on health and performance.

[Lien vers l'article](#)

**Psychometric Validation and Arabic Translation of the 11-Item Circadian Type Inventory (CTI-11A) Among Shift Workers.**

AlBuhmaid SAM, Al-Rumaihi MJ, Albalawi MAM, Almufarrij AAA, Husain W, Jahrami H. *Clocks Sleep.* 2025 Oct 25;7(4).

Circadian rhythm disruptions from shiftwork impact sleep quality and work performance, yet validated tools to assess circadian preferences in Arabic-speaking populations are scarce. This study aimed to translate and validate the 11-item Circadian Type Inventory (CTI-11) into Arabic (CTI-11A), evaluate its psychometric properties, and explore latent circadian profiles in relation to sleep quality. A cross-sectional survey in Bahrain involved 468 Arabic-speaking adults recruited via social media. The CTI-11A, assessing Languid/Vigorous (LV) and Flexible/Rigid (FR) subscales, and the Jenkins Sleep Scale (JSS) were administered. Confirmatory factor analysis (CFA), reliability tests, and latent class analysis (LCA) were conducted. Participants (mean age: 36.18 ± 10.35) showed CTI-11A total scores of 35.40 ± 6.61 and JSS scores of 5.76 ± 3.48. CFA confirmed the two-factor structure (RMSEA = 0.06, SRMR =

0.05, CFI = 0.93, TLI = 0.91), with Cronbach's  $\alpha$  of 0.72 (total CTI-11A). Test-retest reliability was high (ICC = 0.91). CTI-11A correlated moderately with JSS ( $r = 0.40$ ,  $p < 0.001$ ), with stronger FR-JSS ( $r = 0.36$ ) than LV-JSS ( $r = 0.25$ ) associations. LCA identified two classes (Class 1: 52%, vigorous/flexible; Class 2: 48%, languid/rigid), with Class 2 showing poorer sleep quality. The CTI-11A is a reliable and valid tool for assessing circadian preferences in Arabic-speaking populations, with distinct circadian profiles linked to sleep quality. While flexible/vigorous profiles associated with better sleep, languid/rigid profiles indicate higher sleep disturbance risk, informing targeted shiftwork interventions. Further refinement of the factor structure and broader regional validation are needed.

[Lien vers l'article](#)

### **Improving sailor's amount and efficiency of sleep in two-section watchkeeping schedules: a cluster randomized trial study.**

Abendroth J, Röttger S, Giesche M, Jacobsen T, Matsangas P, Shattuck NL. *Sleep*. 2025 Nov 4.

**STUDY OBJECTIVES:** The present study aimed at comparing sailors' amount and efficiency of sleep in two two-section watchkeeping schedules, i.e., the traditional 6/6 and the 7-5-5-7. Intention for the latter schedule was to align the major sleep episodes with biologically driven nocturnal sleep patterns. **METHODS:** Using a parallel cross-over design with cluster randomized trials, forty-eight crew members from two vessels of the German Navy participated in a field trial with two one-week underway periods varying the watchkeeping schedule in randomized order. Sleep minutes and sleep efficiency were assessed on the participant level using wrist-worn actigraphs and analyzed for sleep episodes occurring during the day (i.e., between 10 a.m. and 10 p.m.) and during the night (i.e., between 10 p.m. and 10 a.m.). **RESULTS:** Nighttime sleep duration was 14 minutes longer and with 10% higher sleep efficiency in the 7-5-5-7 schedule compared to the 6/6. In contrast, daytime sleep duration was 40 minutes longer in the 6/6 with no statistically significant differences in sleep efficiency between the two watchkeeping schedules. **CONCLUSIONS:** Our results suggest that amount and efficiency of nighttime sleep can be enhanced with the 7-5-5-7. Hence, even in shift schedules with restricted periods for rest, recuperation can be improved by more closely aligning watchkeeping schedules to the innate human diurnal circadian cycles.

[Lien vers l'article](#)

## Conduites addictives

### Emerging trends and determinants of electronic cigarette use among young Thai men, 2022-2024.

Sakboonyarat B, Poovieng J, Jongcherdchootrakul K, Hempatawee N, Hatthachote P, Munghin M, et al. *BMC Public Health*. 2025 Nov 7;25(1):3842.

**BACKGROUND:** Electronic-cigarette (e-cigarette) use is linked to serious cardiovascular and pulmonary complications, raising public health concerns worldwide, particularly among younger populations. In Thailand, there is limited epidemiological data on e-cigarette usage. Therefore, trends in e-cigarette use and its associated factors among young Thai men from 2022 to 2024 were investigated. **METHODS:** A serial cross-sectional study was conducted among young Thai men aged 18-26 years across four geographical regions in Thailand. Data were collected via a self-administered questionnaire; current e-cigarette use was defined as e-cigarette use on one or more days in the past month. Multivariable log-binomial regression analysis was employed to identify factors associated with current e-cigarette use, presented as adjusted prevalence ratios (aPR) with 95% confidence intervals (CI). **RESULTS:** The analysis involved 9,639 participants, averaging 20.5 years old. From 2022 to 2024, the age-adjusted prevalence of current e-cigarette use increased significantly from 17.2% to 29.3% (p-trend < 0.001). Among those aged 18-20, prevalence rose from 20.1% to 33.6% (p-trend < 0.001), while in the 21-26 age group, it increased from 14.8% to 25.6% (p-trend < 0.001). A rising trend in e-cigarette use over a three-year study period was observed, regardless of their tobacco use status. Higher prevalence was noted in men aged 18-20 compared to those aged 21-26 (aPR 1.30; 95% CI: 1.19-1.43). Men in the central region exhibited the highest prevalence. Compared to agriculturists, individuals in other occupations showed higher current e-cigarette use. Those with no formal education had a higher prevalence than graduates (aPR 1.60; 95% CI: 1.04-2.47). Lifestyle factors significantly associated with current e-cigarette use included being a current smoker (aPR 1.89; 95% CI: 1.72-2.07), a current drinker (aPR 2.59; 95% CI: 2.15-3.12), and a night worker (aPR 1.26; 95% CI: 1.13-1.40). **CONCLUSION:** Emerging trends in e-cigarette use among young Thai men from 2022 to 2024 were identified regardless of the status of tobacco use. Significant sociodemographic and lifestyle factors influencing this behavior were highlighted. These findings can guide policymakers in prioritizing targeted interventions to reduce e-cigarette use and mitigate associated cardiopulmonary complications within this demographic.

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## Reproduction

### Increased risk of asthma in female night shift workers.

Maidstone RJ, Ray DW, Liu J, Bowden J, Rutter MK, Durrington HJ. *ERJ Open Res.* 2025 Nov;11(6).

**RATIONALE:** Asthma is more common in females and more common in night shift workers. Since increasing numbers of females are becoming shift workers, it is important to determine if the risk of shift work-associated asthma is higher in females. The objective of the present study was to determine if increasing frequency of shift work is more strongly related to prevalent asthma in females than in males. **METHOD:** We used cross-sectional data from >280 000 UK Biobank participants and logistic regression models adjusted for demographic and lifestyle factors to describe sex differences in prevalent asthma phenotypes related to shift work frequency. To obtain mechanistic insights, we explored associations with chronotype, sex hormones and menopause. **RESULTS:** Female permanent night shift workers had higher covariate-adjusted odds of moderate-severe asthma (odds ratio (OR) 1.50, 95% confidence interval (CI) 1.18-1.91) than female dayworkers, but there was no corresponding relationship among males (OR 0.95, 95% CI 0.72-1.26; sex interaction p-value=0.01). Similar relationships were observed for "all asthma" and for "wheeze or whistling in the chest". Female shift work-related asthma was driven by relationships in postmenopausal women not using hormone replacement therapy (HRT) (adjusted OR 1.89 (95% CI 1.24-2.87) for moderate-severe asthma; sex interaction p-value=0.02 in permanent night shift workers, compared with dayworkers), but these relationships attenuated to the null in postmenopausal women using HRT. **CONCLUSION:** Our finding that increasing shift work frequency is more strongly related to asthma in females than in males could have public health implications. Intervention studies should determine if modifying shift work schedules or using HRT can reduce asthma risk in females.

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[Lien vers l'article](#)

**Influence of Maternal Working Hours on Children's Sleep: A Preliminary Study on Disparities Between Day and Night Shifts.**

Nehme PA, Santos J, Benedito-Silva AA, Cipolla-Neto J, Moreno CRC. *Clocks Sleep*. 2025 Oct 23;7(4).

**BACKGROUND:** Shift work necessitates alterations in daily routines, which can be detrimental to workers' health and may also influence the activity and rest patterns of their children. **AIM:** The aim of this study was to evaluate the concordance between activity and rest parameters of mothers and their children, according to the mothers' work shift (day vs. night). **METHODS:** Twelve mother-child dyads participated in this study, including six mothers working night shifts and six working day shifts. All mothers followed a 12/36 h rotating schedule (07:00-19:00 for day shifts; 19:00-07:00 for night shifts). Participants wore actigraphy devices for 10 consecutive days. Sleep and motor activity parameters were analyzed using the Bland-Altman method. **RESULTS:** Analysis of the five least active hours (L5) revealed increased nocturnal activity among the night shift group. The period of the 10 most active hours (M10) suggested greater activity in the day shift group, with a smaller difference between mother and child in the day shift group. The relative amplitude (RA) in the night shift group was lower among mothers compared to the day group. Interdaily stability (IS) was lower, and intradaily variability (IV) was higher in the night shift group, suggesting more irregular activity patterns. Bedtime data showed greater variability in the night shift group, with night shift mothers typically going to bed later than their children—a pattern that was also observed for wake times. In the day shift group, total sleep time did not differ between mothers and children; however, in the night shift group, discrepancies increased proportionally with total sleep duration. Sleep efficiency was lower among mothers in both groups, but the difference between mother and child was more pronounced in the night shift group. **CONCLUSIONS:** Night shift work among mothers appears to negatively affect both their own and their children's activity and sleep parameters when compared to those in the day shift group.

[Lien vers l'article](#)

**Working Against the Clock: Depression and Hormonal Imbalance in Shift-Working Men.**

Parikh N, Oppenheimer A, Alexander JM, Hinojosa-Gonzalez D, Saffati G, Bazzi M, et al. *Urology*. 2025 Nov 17.

**OBJECTIVES:** To assess the relationship between depression, testosterone levels, and shift work in men presenting to a single-center, tertiary urology clinic with symptoms of hypogonadism. **METHODS:** A retrospective chart review and survey were conducted on 766 men presenting to a single-center academic urology clinic between 2014 and 2017. Participants completed the Patient Health Questionnaire-9 (PHQ-9) and Shift Work Sleep Disorder (SWSD) Questionnaire at intake. Serum testosterone levels, medication history (testosterone therapy, clomiphene citrate, and PDE5 inhibitors) were collected. Data was analyzed using linear regression and nonparametric testing. **RESULTS:** The mean testosterone level in this cohort was 611 ng/dL with a mean PHQ-9 of 5.28 (mild depression). A significant inverse relationship was found: each 1 ng/dL increase in testosterone corresponded to a 0.18-point decrease in PHQ-9 score ( $p < 0.05$ ). Men at low risk for sleep work disorder had lower PHQ-9 scores than those at high risk (median 2 vs 9,  $p = 0.001$ ) and were less likely to report suicidal ideation ( $p = 0.00098$ ). No significant differences were noted in PHQ-9 between patients on testosterone and clomiphene citrate. A difference in total PHQ-9 was seen between eugonadal and hypogonadal men not on medication therapy ( $p < 0.020$ ). **CONCLUSIONS:** This study demonstrates the significant impact and association between testosterone levels, shift work, and depressive symptoms. These findings highlight the importance of routine depression screening and counseling for men presenting with hypogonadal symptoms, particularly those engaged in shift work.

[Lien vers l'article](#)

**Associations between parental shift work exposure and pregnancy outcomes: role of father's shift work status.**

Wei CF, Chen MH, Lin CC, Guo YL, Lin SJ, Chen YW, et al. *Int Arch Occup Environ Health*. 2025 Dec;98(9-10):987-96.

**PURPOSE:** Shift work is a common occupational exposure that disrupts circadian rhythms which increases the risk of unhealthy behaviours and metabolic disorders. Maternal shift work is known to increase the risk of negative pregnancy outcomes, but the health impact when combining father's shift work status remains uncertain. This study investigated the association between parental shift work before pregnancy and pregnancy outcomes, with a focus on the effect estimates of father's shift work. **METHODS:** We analysed data from the Taiwan Birth Cohort Study, a prospective cohort of Taiwanese women who gave birth in 2005. We collected fathers' and mothers' shift work status before pregnancy and pregnancy outcomes [Caesarean section, excessive gestational weight gain (GWG), large or small for gestational age, low birth weight, nausea and vomiting, gestational hypertension, and gestational diabetes] from 13,221 families with term singletons. Multivariable linear models were used to analyse the associations between different maternal shift work statuses and pregnancy outcomes. **RESULTS:** Parental shift work before pregnancy was associated with higher odds of excessive GWG, Caesarean section, nausea and vomiting in the study population. Meanwhile, father's shift work exposure was associated with higher odds of excessive GWG among mothers not doing shift work before pregnancy, but not among mothers doing shift work. **CONCLUSION:** This study found that both mother's and father's shift work were associated with an increased risk of adverse pregnancy outcomes. Father's shift work may be an unconsidered risk factor for adverse pregnancy outcomes, particularly in mothers without shift work exposure.

[Lien vers l'article](#)

**Menstrual Cycle and Prior Sleep Shape Women's Responses to Savory Snacks During a Mock Night Shift.**

Meth EMS, Nôga DA, Irajpour E, Pacheco AP, Xue P, Benedict C. *Sleep*. 2025 Nov 11.

Nocturnal wakefulness during night shifts is often accompanied by late-evening eating, which has been linked to adverse body composition, impaired daytime glucose tolerance, and increased cardiovascular strain [1–4]. Food appeal during night work may be shaped by menstrual cycle–related hormonal status and total sleep time (TST) before the shift, with higher progesterone levels, typically seen during the luteal phase, and sleep durations below the recommended 7 h both known to increase food appeal and intake [5, 6]. To investigate these factors, we conducted a laboratory-based simulated night shift in reproductive-aged women, measuring sympathetic arousal with eye-tracking pupillometry and assessing palatability and wanting ratings. We hypothesized that a higher progesterone-to-estradiol (P/E) ratio and shorter prior sleep would increase both the palatability and the wanting of savory snacks during the simulated night shift.

[Lien vers l'article](#)

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**BACKGROUND:** Shift work necessitates alterations in daily routines, which can be detrimental to workers' health and may also influence the activity and rest patterns of their children. **AIM:** The aim of this study was to evaluate the concordance between activity and rest parameters of mothers and their children, according to the mothers' work shift (day vs. night). **METHODS:** Twelve mother-child dyads

participated in this study, including six mothers working night shifts and six working day shifts. All mothers followed a 12/36 h rotating schedule (07:00-19:00 for day shifts; 19:00-07:00 for night shifts). Participants wore actigraphy devices for 10 consecutive days. Sleep and motor activity parameters were analyzed using the Bland-Altman method. RESULTS: Analysis of the five least active hours (L5) revealed increased nocturnal activity among the night shift group. The period of the 10 most active hours (M10) suggested greater activity in the day shift group, with a smaller difference between mother and child in the day shift group. The relative amplitude (RA) in the night shift group was lower among mothers compared to the day group. Interdaily stability (IS) was lower, and intradaily variability (IV) was higher in the night shift group, suggesting more irregular activity patterns. Bedtime data showed greater variability in the night shift group, with night shift mothers typically going to bed later than their children—a pattern that was also observed for wake times. In the day shift group, total sleep time did not differ between mothers and children; however, in the night shift group, discrepancies increased proportionally with total sleep duration. Sleep efficiency was lower among mothers in both groups, but the difference between mother and child was more pronounced in the night shift group. CONCLUSIONS: Night shift work among mothers appears to negatively affect both their own and their children's activity and sleep parameters when compared to those in the day shift group.

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[Lien vers l'article](#)

### **Circadian rhythms in sexual behavior and their influence on reproductive outcomes in mice.**

Aten S, Blake C, Keister E, Veith A, Fishbein E, Ramirez-Plascencia O, et al. *bioRxiv*. 2025 Nov 6.

Circadian clocks coordinate mammalian reproductive physiology, and circadian misalignment (resulting from shift work, jet lag, etc.) is known to impair fertility. Despite the well-established links between clock function and reproductive success, it remains unclear whether male and female mice maintained under standard ad libitum feeding conditions exhibit circadian rhythms in the propensity for sexual behavior, and to what degree such timing influences reproductive outcomes. Using standardized mating paradigms in C57BL/6J mice, we identified a circadian rhythm in sexual behavior in both sexes, with peak sexual activity most often occurring at circadian time (CT) 13-16 and a trough at CT4-7. To test the functional significance of these rhythms, we conducted 1-hour mating trials across four cohorts of C57BL/6J mice with pairs of mice having either aligned (e.g. male CT16 peak and female CT16 peak) or misaligned (e.g. male CT16 peak and female CT4 nadir) sexual behavior phases and monitored mating outcomes via ultrasound. While pregnancies were almost as frequent across all four cohorts, the numbers of live offspring were significantly more frequent when both the male and female mated at their peak phases than when both mice mated at their troughs. Notably, mating specifically

during the male's behavioral peak increased the likelihood of successful delivery of pups, suggesting that male circadian phase is a key determinant of miscarriage vs successful birth. These findings establish a circadian rhythm in the propensity for sexual behavior under standard feeding and housing conditions and indicate that mating time-particularly relative to the male's circadian peak-can influence reproductive success. This insight provides a foundation for translational studies that explore whether intercourse timed to the circadian rhythms of the couple might help to increase fertility chances.

[Lien vers l'article](#)

## Polyexposition

### Coexposition of French workers to night and/or shift work and chemical substances.

Barbey C, Weibel L, Clerc F. *Ann Work Expo Health*. 2025 Dec 5.

Workers in various sectors can be exposed to multiple occupational hazards, including chemical substances and night or shift work. However, the health effects of such coexposures remain largely unexplored, and we lack data on the individuals concerned. This study aimed to quantify the number of French workers coexposed to chemical substances and night or shift work and provide statistical indicators for each sector and occupation. The analysis was based on data from the 2010 and 2017 SUMER surveys, which assessed occupational exposure in a representative sample of French workers. These data were crossed with workforce estimates from the French National Statistics Institute (INSEE) to estimate the total number of workers exposed. Four groups were defined on the basis of work schedules: (i) shift work without night work, (ii) shift work with night work, (iii) permanent night work (without shift work), and (iv) day work. The prevalence of chemical exposure in these groups was compared based on descriptive statistics. Of a total of 26.8 million French workers, about 6.5 million are exposed to night and/or shift work, with a higher prevalence among men (4.2 million) than women (2.3 million). The proportion of workers who were also exposed to at least one chemical substance was significantly higher among night or shift workers (36% to 49%) than among day workers (26%). The sectors most affected were healthcare, transport, construction, and manufacturing. Common chemicals included disinfectants (alcohols, quaternary ammonium compounds, and bleach), diesel exhaust, and industrial lubricants. Our results highlight the extent of coexposure to chemical substances and night or shift work among French workers. Given the potential health risks, particularly in the healthcare and industrial sectors, preventive measures should be implemented. Future research should investigate the long-term health effects associated with these combined occupational risk factors.

[Lien vers l'article](#)

## Pathologies cardiovasculaires

### **Longitudinal trends in burnout among healthcare professionals during the COVID-19 pandemic: a 4-year prospective cohort study in a tertiary medical centre in Taiwan.**

Lee SY, Hsu WT, Ho WC, Lin YL, Lin CF, Wang CL, et al. *BMJ Open*. 2025 Nov 27;15(11):e095648.

**OBJECTIVES:** This study aimed to investigate the evolution of burnout levels and cardiovascular risk among healthcare professionals during the COVID-19 pandemic, identifying associated risk factors, with a particular focus on the impact of working hours, job roles and working units. **DESIGN:** A longitudinal, observational study was conducted. **SETTING:** The study was carried out in a medical centre in central Taiwan, encompassing various healthcare settings. **PARTICIPANTS:** A total of 1502 healthcare workers participated, including nurses, medical technicians, resident doctors, attending physicians and administrative staff. Participants were selected based on consistent completion of a 4-year questionnaire, with exclusion criteria for those who did not complete. **PRIMARY AND SECONDARY OUTCOME MEASURES:** The primary outcome measured was burnout levels using the Chinese version of the Copenhagen Burnout Inventory. The secondary outcome was cardiovascular risk calculated from employees' health check-up data using the Framingham Risk Score. **RESULTS:** Cardiovascular risk showed an upward trend over 4 years. Personal and work-related burnout significantly decreased from 2019 to 2020 but increased from 2020 to 2022, aligning with changes in weekly working hours. Nurses exhibited the most pronounced fluctuations, likely due to their younger average age, shorter professional tenure and frequent direct patient contact, which may heighten vulnerability to pandemic-related stressors. In contrast, attending physicians demonstrated age as a protective factor against burnout, as greater seniority, clinical experience and professional maturity may buffer stress and foster resilience. Participants who worked in COVID-related units generally had elevated burnout levels and working hours. During the initial outbreak in 2020, employees working in COVID-related units had reduced working hours but stable burnout levels, while employees in non-COVID-related units experienced decreased burnout. **CONCLUSIONS:** This study highlights the critical impact of long working hours on burnout among healthcare professionals during the COVID-19 pandemic. Nurses emerged as a vulnerable group, sensitive to pandemic-induced changes, while attending physicians exhibited more resilience. COVID-related units face greater stress and are less likely to benefit from reductions in patient numbers and working hours during the pandemic. Our findings underscore the urgent need for tailored interventions, such as regulated work hours, flexible scheduling and enhanced organisational and peer support, to protect healthcare workers' well-being. These strategies can strengthen workforce resilience and sustainability in future public health crises.

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### **Is Work Beneficial to Health? Effect of Long Working Hours on Cardiovascular Health Mediated Through Physical Activity and Mental Health.**

Liu S, Wang JZ, Tuo Z, Jiang H, Liu M, Zhao X. *J Occup Environ Med*. 2025 Nov 24.

**OBJECTIVE:** This study aimed to examine the effects of long working hours on cardiovascular health and to explore the mediating roles of physical activity and mental health. **METHODS:** Data from 3865 adults were analyzed using a parallel mediation model, with data obtained from HINTS 5 Cycle 4 after removing missing values. **RESULTS:** Long working hours were positively associated with cardiovascular health ( $bp = 0.046^{***}$ ). It also significantly improved physical activity ( $bp = 0.022^*$ ) and mental health ( $bp = 0.068^{***}$ ), both of which mediated the relationship between long working hours and cardiovascular health. **CONCLUSIONS:** Contrary to common perceptions, long working hours are associated with improved cardiovascular health, as they enhance physical activity and mental well-being, highlighting the potential health benefits and the importance of workplace interventions.

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**Correction: Shifting Rhythms: A Systematic Review Exploring the Multifaceted Effects of Shift Work and Circadian Disruption on Employee Cardiovascular Health.**

Hanif A, Okafor DK, Katyal G, Kaur G, Ashraf H, Bodapati A, et al. *Cureus*. 2025 Oct;17(10):c357.

[This corrects the article DOI: 10.7759/cureus.71003.].

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**Shifting Rhythms: A Systematic Review Exploring the Multifaceted Effects of Shift Work and Circadian Disruption on Employee Cardiovascular Health.**

Hanif A, Okafor DK, Katyal G, Kaur G, Ashraf H, Bodapati A, et al. *Cureus*. 2024 Oct;16(10):e71003.

Shift work has long been studied as a contributing risk factor for cardiovascular disease. This study aims to provide a comprehensive summary of data regarding shiftwork and its impact on the cardiovascular system from the last decade. It explores the association of shift schedules with multiple aspects of cardiovascular disease and the physiological processes that lead up to it. It also identifies gaps in current knowledge regarding the topic. Two hundred and sixty-eight articles were gathered from PubMed, Google Scholar, and Science Direct using relevant medical subject headings (MeSH) strategy and advanced search using keywords including 'Shift work,' 'Night shift,' 'Occupational health,' 'Circadian rhythm,' 'Cardiovascular disease,' 'Cardiovascular health.' The search was conducted in April and completed in May 2023. Systemic reviews, meta-analysis, cohort and cross-sectional studies from the last 10 years were included, and assessment of multiple systematic reviews (AMSTAR), Newcastle Ottawa, and Joanna Briggs Institute (JBI) tools were used, respectively, for quality assessment. A total of 14 articles were included in our review, including five systematic reviews and meta-analyses, six prospective cohort studies, and three cross-sectional studies. Each study reported a significant association between shift work with some aspect of cardiovascular disease. An increase in the risk of myocardial infarction, coronary heart disease, hypertension, atherosclerosis, and metabolic syndrome is reported. Circadian disruption, unhealthy diet, and emotional and physiological stress contribute to these effects. Oxidative damage and inflammatory biomarkers appear to play a role in this process, but more research is warranted for a deeper understanding of these changes. Despite an abundance of evidence pointing towards the short-term and long-term harm to shift workers' cardiovascular health, there is limited research regarding the policies that are needed to better monitor cardiovascular damage in employees. The focus needs to shift toward prevention-based policies and their efficacy in workplace settings.

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