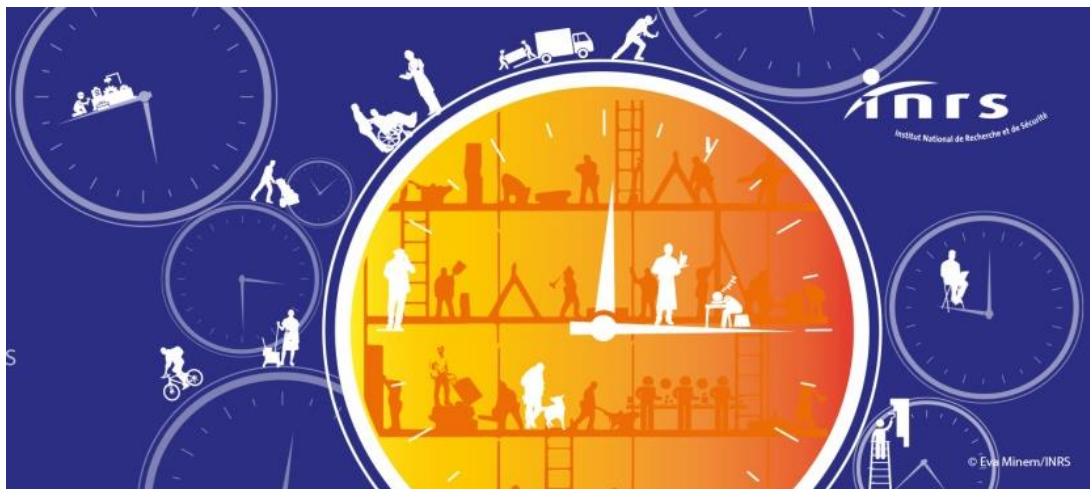


# LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Mars 2025



Objectifs : réaliser une veille scientifique sur les horaires atypiques

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

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

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## Horaires atypiques (HA)

### Généralités et prévention

Aucun article dans ce bulletin.

### Activités physiques

#### **Commuting time and musculoskeletal pain in the relationship with working time: a cross-sectional study.**

Ryu H, Cho SS, Kim JI, Choi SH, Kim N. *Ann Occup Environ Med.* 2025;37:e4.

**BACKGROUND:** Commuting is essential for working life; however, prolonged travel times can negatively affect health, particularly musculoskeletal pain. This study aims to examine the relationship between commuting time and musculoskeletal pain (back, upper extremity, and lower extremity pain), in the context of working time. **METHODS:** This cross-sectional study used data from the Sixth Korean Working Conditions Survey conducted in Korea between October 2020 and April 2021. Variables such as commuting time, weekly working hours, and shift work were assessed using the survey questions. Musculoskeletal pain was determined based on self-reported pains in the previous year. The covariates included demographics, employment status, ergonomic risks, and job stress. The association between commuting time and musculoskeletal pain stratified by weekly working hours or shift work was analyzed by survey-weighted logistic regression analysis. **RESULTS:** This study found a significant association between longer commuting times and increased prevalence of musculoskeletal pain, particularly back, upper extremity, and lower extremity pain. When commuting time was  $\leq 60$ , 61-120, >120 minutes, the odds ratio was 1.00, 1.33 (95% confidence interval [CI]: 1.16-1.52), and 2.41 (95% CI: 1.77-3.29) for back pain; 1.00, 1.29 (95% CI: 1.13-1.46), and 2.27 (95% CI: 1.71-3.00) for upper extremity pain; and 1.00, 1.24 (95% CI: 1.05-1.45), and 1.53 (95% CI: 1.13-2.08) for lower extremity pain, respectively. Furthermore, except for upper extremity pain, this trend was amplified when participants were concurrently exposed to long working hours, and for lower extremity pain, this trend was aggravated among shift workers. **CONCLUSIONS:** Long commuting time may be a risk factor for musculoskeletal pain, and its' effects could be aggravated when combined with long working hours or shift work. This study observed the detrimental impact of prolonged commuting on musculoskeletal health, particularly among employees with extended working hours or shift work.

[Lien vers l'article](#)

### Autres pathologies

Aucun article dans ce bulletin.

### Cancers

Aucun article dans ce bulletin.

### Risque routier, accidentologie

Aucun article dans ce bulletin.

### RPS et QVT

#### Leveraging Lean Methodology to Improve Compliance With Work-Hour Restrictions.

Reeves JJ, Goldhaber N, Hollandsworth H, Cox K, Dumitru AM, Zhao B, et al. *JAMA Surg.* 2025 Feb 1;160(2):200-8.

**IMPORTANCE:** Since work-hour restrictions were instituted in 2003, sustainably complying with duty-hour regulations remains a challenge for general surgery residency programs across the nation. **OBJECTIVE:** To determine whether industry-based process improvement techniques could be leveraged to increase compliance with work-hour restrictions within a general surgery residency. **DESIGN, SETTING, AND PARTICIPANTS:** This quality improvement project using Lean methodology was conducted from October to November of the 2021 to 2022 academic year. The setting was a university-based general surgery residency program in southern California with rotations across 5 regional hospitals. The program trains 7 categorical general surgery residents per postgraduate year (PGY) and offers an optional 1 to 3 years for research and career development. **INTERVENTIONS:** Programmatic structures were examined, current and target states were analyzed, opportunities for improvement were identified, root-cause analyses were conducted, and targeted interventions were developed. **MAIN OUTCOMES AND MEASURES:** Resident time logs and annual Accreditation Council for Graduate Medical Education resident and faculty surveys were reviewed from academic years 2019/2020 to 2022/2023. Attending faculty were surveyed on resident preparedness using a 5-point Likert scale. Differences between means and proportions were calculated with corresponding 95% CIs. **RESULTS:** The web-based survey responses of 29 residents (residents per PGY, 7 [PGY1], 14 [PGY2/3], 8 [PGY4/5]; 17 female [54.7%]) were included in this study. Root causes included maxed baseline schedules, late in shift work, culture, service variability, clinical volume, and inefficient workflows. Fifteen multifactorial interventions impacting call and weekend scheduling, work practices and efficiencies, intern and service orientations, and faculty and cultural expectations were implemented. The mean number of residents per block who logged more than 80 hours per week decreased by 3.6 violations per block (95% CI, 2.98-4.22), from 4.4 (12.4%) to 0.8 (2.2%) for a difference of 10.2% (95% CI, 8.4%-16.2%). On the annual resident survey, perceived compliance with 80 hours was 72%, 83%, 83%, and 88%, respectively, over the following study periods: 2019 to 2020, 2020 to 2021, 2021 to 2022, and 2022 to 2023. Faculty perception of resident preparedness for the case increased from a mean (SD) of 2.6 (0.8) to 3.0 (0.5), with a difference of 0.47 (95% CI, -0.52 to 0.68). There were no statistically significant differences in technical skill, clinical judgment, sense of responsibility, efficiency, or sense of well-being. **CONCLUSIONS AND RELEVANCE:** Results of this quality improvement study suggest that through Lean methodology, surgical residency programs can improve working environments. This novel approach can increase compliance with resident work hours by engaging front line trainees in the process.

[Lien vers l'article](#)

### Santé psychique

Aucun article dans ce bulletin.

### Troubles cognitifs et de la vigilance

Aucun article dans ce bulletin.

## Travail posté et de nuit

### Généralités et prévention

#### **Working From Dusk to Dawn: A Joy or Nightmare.**

Salmond S, Weaver SH, Marcus-Aiyeku U, Markiewicz D. *Orthop Nurs*. 2025 Jan-Feb 01;44(1):4-19.

Nurses are needed to work night shift because patients in acute care, subacute, and long-term care facilities require round-the-clock care. A systematic review on the experiences and perceptions of nurses working the night shift in varied settings found the night shift work environment is different and night shift nurses juggle their sleep and deal with ongoing sleep deprivation. Based on the systematic review and the evidence that forewarns of the physical and psychological burden of night shift work, recommendations are made for employers and nurses to navigate the challenges posed to those working against their circadian rhythm.

[Lien vers l'article](#)

#### **The 1001 nights-cohort - paving the way for future research on working hours, night work, circadian disruption, sleep, and health.**

Nabe-Nielsen K, Arup A, Sallerup M, Harmsen R, Ginty AS, Nielsen MT, et al. *Eur J Epidemiol*. 2025 Feb 7.

Night work and circadian disruption are linked to major public health challenges, e.g. cancer, cardiometabolic disease, and accidents. We established the 1001 nights-cohort to explore mechanisms underlying health effects of night work and circadian disruption. 1075 female hospital employees participated from September 2022 to April 2024. The data collection included a questionnaire, a blood sample, anthropometric measures, and sleep actigraphy and sleep diaries across 14 days. In subsamples, light exposure, physical activity, skin temperature, and blood glucose were measured continuously for 7 days, and saliva samples were collected five times across one day. The cohort consists of 2- and 3-shift workers with night work (66%), permanent night workers (7%), permanent evening workers or 2-shift workers without night work (9%), and permanent day workers (18%). Data comprise 4553 day shifts, 997 evening shifts, 1963 night shifts, and 6458 days without work. The poorest health was observed among permanent night workers and the group of shift workers without night work. The 1001 nights-cohort is the most comprehensive data within night work and working hour research due to the combination of questionnaires, biomarkers, technical measurements, and possibilities for linkage to historical and future register-based information about working hours from the Danish Working Hour Database (DAD) and diagnoses. With its repeated measurements within the same individual, the cohort will advance research on physiological and behavioral mechanisms underlying health effects of working hours, night work, and circadian disruption and deliver important scientific input for updating guidelines on healthy scheduling of working hours.

[Lien vers l'article](#)

#### **Association between shift work and eating behaviours, sleep quality, and mental health among Italian workers.**

Lotti S, Moretton M, Bulgari M, Costantini L, Dall'Asta M, De Amicis R, et al. *Eur J Nutr*. 2025 Feb 18;64(2):97.

**PURPOSE:** Recent studies indicate that shift work may affect workers' eating habits and overall well-being. This study aimed to assess differences in eating patterns, sleep quality, and mental health between Italian shift and non-shift workers, with a focus on individual chronotype and the type of shift work (day vs. night shift). **METHODS:** The cross-sectional study involved 322 subjects (166 shift and 156 non-shift workers). Eating habits were evaluated using a 7-day diary and the Medi-Lite

questionnaire. Sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI), and mental health with the Depression Anxiety Stress Scales (DASS). Individual chronotype was defined using the Morningness-Eveningness Questionnaire. RESULTS: No significant differences in daily energy, macronutrient, and micronutrient intake between the two groups, nor in the temporal pattern of eating. However, shift workers had significantly ( $p < 0.05$ ) lower adherence to the Mediterranean diet (MD) ( $7.6 \pm 2.3$  vs  $8.1 \pm 2.2$ ) compared to non-shift workers. Shift workers also reported significantly poorer sleep quality (mean PSQI score  $7.6 \pm 3.7$  vs.  $5.8 \pm 3.0$ ) and higher levels of anxiety and stress symptoms. Among shift workers, those with an evening chronotype had significantly lower MD adherence than those with a morning chronotypes. Additionally, night shift workers experienced more sleep disturbances compared to day ones. CONCLUSION: Shift workers reported lower MD adherence, poorer sleep quality, and a higher prevalence of anxiety and stress symptoms compared to a similar group of non-shift workers. Evening chronotypes and night shift work were associated with worse eating habits and sleep quality.

[Lien vers l'article](#)

### **American Academy of Nursing Policy Recommendations to Reduce and Prevent Negative Health Outcomes and Health Care Costs Among Night Shift Nurses: An AAN Consensus Paper.**

Baldwin CM, Tucker SJ, Imes CC, Reynaga-Ornelas L, Trinkoff AM, Weinstein SM, et al. *Nurs Outlook*. 2025 Jan-Feb;73(1):102344.

A growing body of evidence demonstrates occupational night shift hazards. Decades of research point to health risks for nurses contributing to chronic diseases, including diabetes, cardiovascular disease, cognitive/mental health, and cancers—all associated with earlier mortality. Patient safety, recruitment and retention of quality nursing workforce, and related costs are important concerns associated with night shift work. Post COVID-19, nurses have advocated and lobbied for many changes in their work environments, yet little emphasis has been placed on addressing night shift health and patient safety hazards, and concomitant personal, insurer, organizational, and federal costs. Nurses are also recipients of health care, and their work-related risks must be prioritized. Innovative solutions targeting individuals, work environments, novel schedules, virtual nursing, and artificial intelligence have been examined and must continue to be studied and implemented. Policy and legislation must be among the strategies for nurses, no different than other night shift workers (e.g., flight crews).

[Lien vers l'article](#)

### **Activités physiques**

#### **Low physical activity levels of military police officers during day and night radio patrolling.**

Zampero G, Trevisan I, Monma F, Tinti JC, Dos Santos LP, Lima TCP, et al. *BMJ Mil Health*. 2025 Feb 3.

INTRODUCTION: The São Paulo State Military Police officers have a higher mortality rate than the civilian population. The radio patrolling work (RP190) is carried out by pairs of military police officers (MPOs) for 12 hours, using a police vehicle, requiring physical capabilities at any moment. However, whether the activity performed by MPOs during operational work is within the sedentary or the physically active range classification requires investigation. This cross-sectional study measured and compared the number of steps performed by MPOs during night and day shift radio patrolling. METHODS: The study participants included 170 MPOs with a median age of 35.0 (IQR: 29.0–43.0) years. All volunteers worked either the day ( $n=117$ ) or night ( $n=53$ ) shift and underwent step count analysis during the service shift using a Yamax pedometer (Digi-Walker SW 700, Tokyo, Japan). The data were normalised for pedometer wear time corresponding to the working service period. The MPOs in the radio patrolling programme wore the pedometer for 8.5 hours. RESULTS: The results show that they

took an average of 2516 (95% CI 2270 to 2632) and 295.8 (95% CI 278.1 to 313.5) steps during the whole service and per hour of service, respectively. No difference in the number of steps was observed during the day compared with the night shift (2574 (IQR: 1829-3371) vs 2485 (IQR: 1502-2821),  $p=0.131$ ). However, when normalised for wear time of use, the number of steps was significantly higher in the day compared with the night group ( $311.7\pm 119.1$  vs  $260.6\pm 108.6$ ,  $p=0.009$ ,  $d=0.44$ ). CONCLUSIONS: In conclusion, MPOs working the night shift are less physically active than MPOs working the day shift. Furthermore, MPOs' activity can be classified into the sedentary range independently of their shifts.

[Lien vers l'article](#)

### **Commuting time and musculoskeletal pain in the relationship with working time: a cross-sectional study.**

Ryu H, Cho SS, Kim JI, Choi SH, Kim N. *Ann Occup Environ Med.* 2025;37:e4.

BACKGROUND: Commuting is essential for working life; however, prolonged travel times can negatively affect health, particularly musculoskeletal pain. This study aims to examine the relationship between commuting time and musculoskeletal pain (back, upper extremity, and lower extremity pain), in the context of working time. METHODS: This cross-sectional study used data from the Sixth Korean Working Conditions Survey conducted in Korea between October 2020 and April 2021. Variables such as commuting time, weekly working hours, and shift work were assessed using the survey questions. Musculoskeletal pain was determined based on self-reported pains in the previous year. The covariates included demographics, employment status, ergonomic risks, and job stress. The association between commuting time and musculoskeletal pain stratified by weekly working hours or shift work was analyzed by survey-weighted logistic regression analysis. RESULTS: This study found a significant association between longer commuting times and increased prevalence of musculoskeletal pain, particularly back, upper extremity, and lower extremity pain. When commuting time was  $\leq 60$ , 61-120,  $>120$  minutes, the odds ratio was 1.00, 1.33 (95% confidence interval [CI]: 1.16-1.52), and 2.41 (95% CI: 1.77-3.29) for back pain; 1.00, 1.29 (95% CI: 1.13-1.46), and 2.27 (95% CI: 1.71-3.00) for upper extremity pain; and 1.00, 1.24 (95% CI: 1.05-1.45), and 1.53 (95% CI: 1.13-2.08) for lower extremity pain, respectively. Furthermore, except for upper extremity pain, this trend was amplified when participants were concurrently exposed to long working hours, and for lower extremity pain, this trend was aggravated among shift workers. CONCLUSIONS: Long commuting time may be a risk factor for musculoskeletal pain, and its' effects could be aggravated when combined with long working hours or shift work. This study observed the detrimental impact of prolonged commuting on musculoskeletal health, particularly among employees with extended working hours or shift work.

[Lien vers l'article](#)

### **Autres pathologies**

#### **[Evaluation of the role of an advanced practice dietitian in the intensive care unit].**

Vinci G, Stocker R. *Med Klin Intensivmed Notfmed.* 2025 Mar;120(2):145-52.

BACKGROUND: In Swiss intensive care units (ICUs), nutritional management is hardly or not at all supported or supervised by dietitians. Nutritional management in the ICU is mainly performed by ICU nursing staff and intensive care specialists. In 2022, the role of an advanced practice dietitian (APD) was newly defined, created, and implemented in a Swiss ICU as part of a pilot project. In contrast to other countries, APDs are still scarce in Switzerland. Evaluation of the APD role is essential to further define the position and adapt it to needs. The aim of this survey was to evaluate the impact of the APD role 8 months after implementation. MATERIALS AND METHODS: The survey was conducted via online

survey in February and March 2023. A total of 34 members of the ICU team participated, including physicians (n = 11), nurses (n = 20), and speech therapists (n = 3). In addition to workload, years worked in the company, and shiftwork, questions were asked about the level of awareness of the new APD position, integration of the APD into the ICU team, and the impact of the APD on nutritional management and the situation of the participants, as well as regarding documentation and prescribing skills. A descriptive analysis of the data was carried out in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA). **RESULTS AND CONCLUSION:** The majority are aware of the APD and consider her as part of the ICU team. From the treatment team's point of view, the quality of the nutritional care provided as by the APD has improved and there is added value for patients and the ICU team. The delegated prescribing competence seems to improve nutritional management noticeably and is perceived as helpful and relieving by a majority. How the position will develop in terms of the competence profile remains to be seen.

[Lien vers l'article](#)

### **Incidence rates of prediabetes and diabetes associated with sedentary behavior and night shifts among peruvian workers (2014-2021).**

Vera-Ponce VJ, Zuzunaga-Montoya FE, Sanchez-Tamay NM, Bustamante-Rodríguez JC, De Carrillo CIG. *Dialogues Health*. 2025 Jun;6:100204.

**INTRODUCTION:** Type 2 diabetes mellitus (T2DM) and prediabetes represent a global public health concern, with increasing prevalence in developing countries. Occupational factors such as sedentary behavior and night shift work may play a significant role in their development; however, there is limited information on their impact on Latin American populations. **OBJECTIVES:** To determine the incidence of T2DM and prediabetes and to evaluate the association between prolonged sitting time and night shift work with glycemic changes in Peruvian workers. **METHODS:** A retrospective cohort study was conducted with 4200 workers evaluated between 2014 and 2021. Incidence rates of T2DM and prediabetes were calculated, and Cox regression models were used to assess the association between prolonged sitting time and night shift work with glycemic changes. The measure of association was the crude and adjusted hazard ratio (aHR), presented with its respective 95 % confidence interval (95 % CI). **RESULTS:** The incidence of T2DM was 33.1 per 1000 person-years, and that of prediabetes was 77.11 per 1000 person-years. Sitting time ( $\geq 4$  h/day) was associated with a higher hazard of diabetes (aHR: 2.84, 95 % CI: 1.58-5.12). Night shift work also significantly increased the hazard of diabetes (aHR: 3.24, 95 % CI: 1.97-5.35). **CONCLUSION:** This study reveals a high incidence of T2DM and prediabetes among Peruvian workers, with significant associations between prolonged sitting time and night shift work with glycemic changes. The results underscore the importance of considering these occupational factors in T2DM prevention strategies. Implementing workplace prevention and early detection programs focused on reducing sedentary time and mitigating the effects of night shift work is recommended.

[Lien vers l'article](#)

### **Associations between work characteristics and osteoarthritis: A cross-sectional study of 285,947 UK Biobank participants.**

Hashmi A, Scott S, Jung M, Meng QJ, Tobias JH, Beynon RA, et al. *Osteoarthr Cartil Open*. 2025 Mar;7(1):100565.

**OBJECTIVES:** Shift work-induced circadian rhythm disruption has been identified as a risk factor for specific diseases. Additionally, physically demanding work has been linked to osteoarthritis. This study investigated the independent associations of shift work and physical work with risk of osteoarthritis. **DESIGN:** UK Biobank participants completed questionnaires detailing their employment status, including shift work, night shifts, heavy manual work and prolonged non-sedentary work. Responses



were categorised into binary and categorical variables. Knee and hip osteoarthritis diagnoses were extracted from hospital records and osteoarthritis (any site) was self-reported. Logistic regression models, adjusted for age, sex, BMI, Townsend Deprivation Index and other work factors, were used to investigate the relationships between work characteristics and osteoarthritis outcomes. RESULTS: This study included 285,947 participants (mean age 52.7 years; males 48.0 %). Shift work and night shifts were associated with knee osteoarthritis (fully adjusted OR: 1.12 [95 % CI:1.07-1.17] and 1.12 [1.04-1.20], respectively), and self-reported osteoarthritis but there was little evidence of an association with hip osteoarthritis (1.01 [0.95-1.08] and 1.03 [0.93-1.14]). Heavy manual work and prolonged non-sedentary work were associated with increased risk of all osteoarthritis outcomes. CONCLUSIONS: Shift work showed independent associations with knee osteoarthritis and self-reported osteoarthritis but not hip osteoarthritis, suggesting circadian rhythm dysfunction may play a role in knee osteoarthritis pathogenesis. Heavy manual work and prolonged non-sedentary work were associated with all outcomes, with stronger associations in knee osteoarthritis, possibly reflecting the knee's higher susceptibility to biomechanical stress. Further research is needed to explore workplace interventions for reducing these risks.

[Lien vers l'article](#)

### Cancers

Aucun article dans ce bulletin.

### Risque routier, accidentologie

#### **Factors Associated with Workplace Injuries Among Shift Work Nurses: A Cross-Sectional Study in an Ecuadorian Sample.**

Prados G, Mendoza-Vinces Á, Holguín M, Cambil-Martín J, Fernández-Puerta L. *Nurs Rep*. 2025 Jan 27;15(2).

Background/Objectives: Shift work schedules and mental and physical workloads affect the sleep homeostasis of nurses, increasing the risk of occupational injuries. This study aimed to investigate the relationship between sleep disturbances caused by shift schedules and the occurrence of needlestick and sharps injuries (NSIs) among nurses, considering significant worker and occupational factors. Methods: A total of 348 nurses from five hospitals of Santiago de Guayaquil, Ecuador, participated in this cross-sectional survey. Data on sociodemographic and occupational characteristics, work schedules, and NSI incidents during the previous six months were collected. Emotional status, sleepiness, and insomnia symptoms were assessed using validated questionnaires. Additionally, nurses with night shifts (fixed or rotating) were specifically assessed to estimate the relationship between NSIs and insomnia or sleepiness symptoms related to these types of shift work using logistic regression analyses. Results: Nurses whose schedule included night shifts showed a higher prevalence of NSIs than those with other shifts (33.2% vs. 29.0%;  $p < 0.05$ ). High levels of depression, anxiety, and stress were associated with having had an NSI in the previous six months. Logistic regression showed that female sex (adjusted odds ratio, aOR 4.62, 95% CI: 1.65-12.97), less experience in the current clinical setting (aOR 3.12, 95% CI: 1.46-6.57), the use of psychotropic drugs (aOR 4.46, 95% CI: 1.51-13.17), and insomnia and sleepiness symptoms due to shift work (aOR 2.61, 95% CI: 1.15-5.91) increased NSI risk among nurses with night shifts. Conclusions: There is an acute need to explore the complex relationship between sleep troubles linked to shift work schedules, occupational factors, and the risk of occupational injuries and propose preventive strategies for enhancing nurses' sleep health and workplace safety.

[Lien vers l'article](#)

**RPS et QVT****Interventions to promote well-being of nightshift nursing team members.**

Wyche H, Weber A, McNulty T, Ruiz M, Keller S, Salmon ML, et al. *J Pediatr Nurs*. 2025 Feb 27.

**PURPOSE:** To measure the impact of a mindfulness or physical activity intervention and the combination of both on hospital nightshift nursing teams' professional quality of life, medication administration error, role meaning, and sleep quality. **DESIGN AND METHODS:** In this two-site study using a cluster cross-over randomized trial design, 18 units were randomized to one of two interventions (mindfulness or physical activity) during the first 8-week period and to both interventions during the second 8-week period. Questionnaires completed at baseline (T0), Week 8 (T1), and Week 18 (T2) included the Professional Quality of Life (ProQOL-21) (Compassion Satisfaction, Compassion Fatigue), PROMIS Sleep Disturbance, PROMIS Sleep Impairment, Sleep Hygiene, and Role-Related Meaning Scale for Staff (RRMSS). **RESULTS:** Participants (n = 82) completed questionnaires at T0, 33 at T1, and 23 at T2. Significant improvements in PROMIS Sleep Disturbance scores occurred within both study arms from T0 to T1 and T1 to T2 and within both arms in PROMIS Sleep Impairment scores from T0 to T1 and from T0 to T2. Across questionnaires, the largest improvement occurred between T0 and T2 and the least between T1 and T2. Compassion satisfaction had the largest improvement in the physical activity intervention and compassion fatigue had the largest improvement in the mindfulness intervention. **CONCLUSIONS:** Mindfulness and physical activity interventions can reduce sleep disturbance, sleep impairment, and compassion fatigue and improve compassion satisfaction in nightshift nursing care teams. **PRACTICE IMPLICATIONS:** Nursing care team members' sleep and professional quality of life could directly benefit from hospital-sponsored nightshift well-being interventions including mindfulness, physical activities and sleep hygiene information.

[Lien vers l'article](#)

**Evaluating quick return restrictions on sickness absence in healthcare employees: A difference-in-differences study.**

Turunen J, Karhula K, Ropponen A, Shiri R, Hämäläinen K, Ervasti J, et al. *Int J Nurs Stud*. 2025 Mar;163:104996.

**BACKGROUND:** Short intervals between shifts, known as quick returns, have been linked to adverse health effects, and increased risk of occupational accidents, particularly among healthcare employees. To safeguard employee health, the 2020 reform of Working Time Act in Finland limited rest periods under 11 h in irregular shift work. **OBJECTIVE:** To evaluate the changes in quick returns following the 2020 reform of the Working Time Act in Finland and their association with sickness absence among public healthcare employees. **DESIGN AND METHODS:** This observational longitudinal study, analysed as a quasi-experiment used a difference-in-differences regression analysis with unit and time fixed effects and robust standard errors. We assessed changes in sickness absence from 2019 to 2021 across hospital work units. The study compared units mandated to limit quick returns (Treatment group; 416 units, over 20,500 employees, 72 % in nursing) with units that had low levels of quick returns prior the reform and did not need to limit quick returns (Control group; 37 units, over 1700 employees, 70 % in nursing). The analysis considered local agreements permitting quick returns, using both intention-to-treat and per-protocol approaches. Sensitivity analysis included regression models with unit level covariates and inverse probability weighting to adjust for initial differences. **RESULTS:** The per-protocol approach and simple regression analysis with fixed effects for unit and time over 2019-2020 showed a less pronounced increase in sickness absence by -0.7 percentage points (95 % confidence interval [CI]: -1.3 to -0.1) for the treatment group compared to the control group, indicating a 13 % lower rate of sickness absence. For the period 2019-2021, the estimate was -0.5 percentage points (95 % CI: -1.0 to

0.0). When incorporating covariates and inverse probability weighting, the estimates were more substantial with narrower confidence intervals: -0.9 percentage points (95 % CI: -1.4 to -0.3) for 2019-2020, and -0.6 percentage points (95 % CI: -1.2 to -0.1) for 2019-2021. The estimates from the intention-to-treat approach were consistent with the per-protocol results. **CONCLUSION:** The Working Time Act reform reduced quick returns, and after the reform, the reduction was associated with a smaller increase in sickness absence among healthcare employees. Policymakers and nursing managers should evaluate and adjust the frequency of quick returns to achieve the potential effects on employee well-being, health, and operational efficiency, which in this study was indicated by the reduction in sickness absence.

[Lien vers l'article](#)

### **Emergency nursing staff's well-being, burnout, and sleep on 12-hour shifts.**

Sánchez Onrubia IM, Resta Sánchez EJ, Cabañero Contreras T, Perona Moratalla AB, Molina Alarcón M. *Enferm Clin (Engl Ed)*. 2025 Jan-Feb;35(1):102141.

**OBJECTIVE:** To know job satisfaction, work-family balance, sleep quality, and burnout in nursing staff after the introduction of the 12-h rotating shift in the emergency department of a tertiary hospital. **METHOD:** Cross-sectional observational design carried out in February 2023 for the first collection (T1) and October 2023 for the second collection (T2) in emergency nursing staff. Sociodemographic data, work and family reconciliation, job satisfaction, degree of burnout, and sleep quality were collected. **RESULTS:** In T1, 66.7% (74) of professionals answered, with an average age of 44.72 years (SD:10.60). 50% were on a 12-h shift. In T2, 91.9% (102) of professionals answered, with an average age of 44.75 years (SD11.07). 54.9% were on a 12-h shift. 71.2% in T1 and 66.7% in T2 were somewhat or very satisfied with the flexibility of their work schedules. 8.9% in T1 and 10.3% had a high overall burnout. In T1, the average global PSQI score was 7.66 (SD:3.82) and in T2 it was 8.46 (SD:4.05). Significant differences were found in terms of work and family reconciliation between the different rotating shifts analyzed ( $P<.05$ ), and not significant for the rest of the variables. **CONCLUSIONS:** Emergency nursing staff prefer 12-h shifts as they facilitate work-family reconciliation and do not negatively affect sleep, burnout, or job satisfaction.

[Lien vers l'article](#)

### **Leveraging Lean Methodology to Improve Compliance With Work-Hour Restrictions.**

Reeves JJ, Goldhaber N, Hollandsworth H, Cox K, Dumitru AM, Zhao B, et al. *JAMA Surg*. 2025 Feb 1;160(2):200-8.

**IMPORTANCE:** Since work-hour restrictions were instituted in 2003, sustainably complying with duty-hour regulations remains a challenge for general surgery residency programs across the nation. **OBJECTIVE:** To determine whether industry-based process improvement techniques could be leveraged to increase compliance with work-hour restrictions within a general surgery residency. **DESIGN, SETTING, AND PARTICIPANTS:** This quality improvement project using Lean methodology was conducted from October to November of the 2021 to 2022 academic year. The setting was a university-based general surgery residency program in southern California with rotations across 5 regional hospitals. The program trains 7 categorical general surgery residents per postgraduate year (PGY) and offers an optional 1 to 3 years for research and career development. **INTERVENTIONS:** Programmatic structures were examined, current and target states were analyzed, opportunities for improvement were identified, root-cause analyses were conducted, and targeted interventions were developed. **MAIN OUTCOMES AND MEASURES:** Resident time logs and annual Accreditation Council for Graduate Medical Education resident and faculty surveys were reviewed from academic years 2019/2020 to 2022/2023. Attending faculty were surveyed on resident preparedness using a 5-point Likert scale. Differences between means and proportions were calculated with corresponding 95% CIs. **RESULTS:**

The web-based survey responses of 29 residents (residents per PGY, 7 [PGY1], 14 [PGY2/3], 8 [PGY4/5]; 17 female [54.7%]) were included in this study. Root causes included maxed baseline schedules, late in shift work, culture, service variability, clinical volume, and inefficient workflows. Fifteen multifactorial interventions impacting call and weekend scheduling, work practices and efficiencies, intern and service orientations, and faculty and cultural expectations were implemented. The mean number of residents per block who logged more than 80 hours per week decreased by 3.6 violations per block (95% CI, 2.98-4.22), from 4.4 (12.4%) to 0.8 (2.2%) for a difference of 10.2% (95% CI, 8.4%-16.2%). On the annual resident survey, perceived compliance with 80 hours was 72%, 83%, 83%, and 88%, respectively, over the following study periods: 2019 to 2020, 2020 to 2021, 2021 to 2022, and 2022 to 2023. Faculty perception of resident preparedness for the case increased from a mean (SD) of 2.6 (0.8) to 3.0 (0.5), with a difference of 0.47 (95% CI, -0.52 to 0.68). There were no statistically significant differences in technical skill, clinical judgment, sense of responsibility, efficiency, or sense of well-being. **CONCLUSIONS AND RELEVANCE:** Results of this quality improvement study suggest that through Lean methodology, surgical residency programs can improve working environments. This novel approach can increase compliance with resident work hours by engaging front line trainees in the process.

[Lien vers l'article](#)

### **The Impact of Time of Night on Affect and Affective State Type: A Simulated Nightshift Study.**

Pilcher JJ, Ply CM. *J Sleep Res.* 2025 Feb 27:e70027.

Nightshift workers experience circadian misalignment thus negatively impacting many physiological systems which can change subjective states such as affect. The current study examined change in affect and affective state across a simulated first nightshift. Ninety sleep-deprived college students (33% female) completed a series of surveys and tasks across four testing sessions during the night. The participants completed the Positive and Negative Affect Schedule at the beginning of each testing session. Using these affect scores, we derived four affective state types defined by high and low positive and negative affect (Self-actualizing-high positive affect with low negative affect, High affective-high positive affect with high negative affect, Self-destructive-low positive affect with high negative affect, Low affective-low positive affect with low negative affect). A 2 (positive affect/negative affect) x 4 (time) repeated measures ANOVA was used to examine change over time in the positive and negative affect scores. A Friedman test with a Wilcoxon Signed Ranks test was performed to determine if there was a significant change in affective state across the four testing sessions. The current results indicate that positive affect decreased across the night while negative affect remained low and stable. The four derived affective states changed across the night with decreases in the high positive affective states, and increases in low positive affective states. These results suggests that nightshift workers experience stress-inducing conditions that negatively impact positive affect and affective state. Workers and organisations should anticipate decreased positive affect and positive affective states during nightshifts and consider appropriate mitigation strategies.

[Lien vers l'article](#)

### **Shiftwork and leisure-time physical inactivity (LTPI) among U.S. workers.**

Fekedulegn D, Long DL, Service S, Gu JK, Innes KE. *Chronobiol Int.* 2025 Jan;42(1):1-13.

Physical inactivity may exacerbate the adverse health effects associated with shift work. We investigated the association of shift work with leisure-time physical inactivity (LTPI). A cross-sectional analysis included 33 983 adults from National Health Interview Survey who self-reported their work schedule and leisure-time physical activity. Participants were classified in to two groups as either (a) inactive or (b) insufficiently/sufficiently. Prevalence ratios were derived using SUDAAN. Analyses were stratified by sex. In this sample of U.S. workers, 27% were shift workers, 26% were physically inactive,

and 47% did not meet recommended levels of leisure-time physical activity. Inactivity level was 23% higher in women than in men among shift workers but did not differ by sex among daytime workers (PR = 1.02, 95% CI: 0.96-1.07). Evening or night work was associated with higher LTPI among women but not men. LTPI was 17% higher in women working the night shift, and 24% higher in those on the evening shift compared to those working the daytime shift. These findings suggest that shift work may contribute to increased LTPI, with effects that may be particularly pronounced in women. Interventions addressing LTPI among shift workers may help mitigate the adverse health effects that have been linked to shift work in prior studies.

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### **Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.**

Alghamdi R, Bahari G. *Healthcare (Basel)*. 2025 Jan 22;13(3).

**BACKGROUND/OBJECTIVES:** Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. **METHODS:** This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. **RESULTS:** Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue ( $p = 0.007$ ) and depression ( $p = 0.008$ ). Both nationality ( $p < 0.001$ ) and shift work ( $p = 0.015$ ) were correlated with anxiety. Similarly, significant differences were found for nationality ( $p = 0.001$ ) and shift work ( $p = 0.002$ ) regarding stress. **CONCLUSIONS:** These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

[Lien vers l'article](#)

### **Effects of a single night shift on healthcare professional work ability – A cohort study.**

Sorić M, Milošević M. *Acta Clin Croat*. 2024 Apr;63(1):65-72.

Shift work has many detrimental effects on health and work ability of workers. These effects could increase with age, especially due to workforce aging. The aim of the study was to examine the effect of a single night shift on the Work Ability Index (WAI) scores of hospital healthcare workers. A prospective survey was conducted on a convenience sample of 49 on-call residents working 12- or 16-hour night shifts and 47 nurses working 12-hour night shifts in the emergency department of an urban teaching hospital. The study included analysis of sociodemographic, occupational and medical data collected through a questionnaire during a morning shift change. The participant work capacity was assessed using the short form of the WAI Questionnaire. The mean WAI score for nurses was 40.98 before a night shift and 37.15 after a night shift, which was a statistically significant decrease ( $p < 0.01$ , 95% CI: 2.39-5.27). Similarly, among residents, the mean WAI score decreased from 43.02 before a night shift to 38.76 after a night shift ( $p < 0.0001$ , 95% CI: 2.95-5.58). There was a statistically significant difference in WAI scores between nurses and residents ( $p < 0.05$ ). Our results showed that even a single

night shift negatively affected the work ability of emergency healthcare workers. We recommend scheduling shift work with fewer night shifts to preserve healthcare worker work ability.

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### Santé psychique

#### **Investigating the impact of shift work on depression: Insights from sleep duration and physical activity.**

Zhou Y, Xue F. *Work*. 2025 Jan 8;10519815241303345.

BACKGROUND: Shift work has been associated to a higher risk of depression and other health problems. OBJECTIVE: This study aims to explore the connection between shift work and depression using NHANES data, with a focus on the roles of sleep duration and physical activity. METHODS: NHANES data from 2007 to 2025 were examined using weighted multivariable logistic regression and stratified analysis, adjusting for demographic, chronic disease, and lifestyle factors. The impact of sleep duration and physical activity on depression among shift workers was examined using generalized additive models. RESULTS: The study included 4965 participants. Adjusting for all covariates, shift work was significantly linked to increased depression risk (OR = 1.25, 95% CI: 1.05-1.48,  $p = 0.0127$ ). For shift workers, each additional hour of sleep reduced depression risk by 19% (OR = 0.81, 95% CI: 0.72-0.91,  $p = 0.0007$ ), and those with adequate sleep had a 40% lower depression risk compared to those with insufficient sleep (OR = 0.60, 95% CI: 0.42-0.87,  $p = 0.0072$ ). Regular physical activity reduced depression risk by 44% (OR = 0.56, 95% CI: 0.36-0.87,  $p = 0.0104$ ), whereas insufficient activity showed no significant impact (OR = 0.83, 95% CI: 0.50-1.38,  $p = 0.4731$ ). CONCLUSIONS: Shift work increases depression risk, while sufficient sleep and physical activity are protective. These findings underscore the importance of improving conditions for shift workers and developing preventive strategies.

[Lien vers l'article](#)

#### **Chronotype and Nursing Shift Work.**

Kalra Y. *Am J Nurs*. 2025 Mar 1;125(3):64.

The relief of finding an explanation for night shift exhaustion.

[Lien vers l'article](#)

#### **Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.**

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BACKGROUND/OBJECTIVES: Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. METHODS: This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. RESULTS: Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue ( $p = 0.007$ ) and depression ( $p = 0.008$ ). Both nationality ( $p < 0.001$ ) and shift work ( $p = 0.015$ ) were correlated with anxiety. Similarly, significant differences were found for nationality ( $p = 0.001$ ) and shift work ( $p =$

0.002) regarding stress. CONCLUSIONS: These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

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### **Emergency nursing staff's well-being, burnout, and sleep on 12-hour shifts.**

Sánchez Onrubia IM, Resta Sánchez EJ, Cabañero Contreras T, Perona Moratalla AB, Molina Alarcón M. *Enferm Clin (Engl Ed)*. 2025 Jan-Feb;35(1):102141.

OBJECTIVE: To know job satisfaction, work-family balance, sleep quality, and burnout in nursing staff after the introduction of the 12-h rotating shift in the emergency department of a tertiary hospital. METHOD: Cross-sectional observational design carried out in February 2023 for the first collection (T1) and October 2023 for the second collection (T2) in emergency nursing staff. Sociodemographic data, work and family reconciliation, job satisfaction, degree of burnout, and sleep quality were collected. RESULTS: In T1, 66.7% (74) of professionals answered, with an average age of 44.72 years (SD:10.60). 50% were on a 12-h shift. In T2, 91.9% (102) of professionals answered, with an average age of 44.75 years (SD:11.07). 54.9% were on a 12-h shift. 71.2% in T1 and 66.7% in T2 were somewhat or very satisfied with the flexibility of their work schedules. 8.9% in T1 and 10.3% had a high overall burnout. In T1, the average global PSQI score was 7.66 (SD:3.82) and in T2 it was 8.46 (SD:4.05). Significant differences were found in terms of work and family reconciliation between the different rotating shifts analyzed ( $P < .05$ ), and not significant for the rest of the variables. CONCLUSIONS: Emergency nursing staff prefer 12-h shifts as they facilitate work-family reconciliation and do not negatively affect sleep, burnout, or job satisfaction.

[Lien vers l'article](#)

### **Physical and mental fatigue in shift work and mitigation strategies: an integrative review.**

Moreira AS, de Lucca SR. *Rev Bras Med Trab*. 2024 Oct-Dec;22(4):e20241267.

The new configurations of society have fragmented working hours into shifts, resulting in greater fatigue which affects worker health. Our aim was to identify the relationship between physical and mental fatigue and shift work and the main strategies for mitigating these effects. This review study was conducted between March and May 2023 using the Biblioteca Virtual em Saúde (Virtual Health Library). Twenty seven of the 1,176 identified articles were selected, with health professionals (doctors and nursing professionals), drivers, and aircraft pilots being the most studied populations. The following strategies for mitigating fatigue in shift work stood out: work schedule adjustments, interand intra-workday rest associated with phototherapy, monitoring and evaluating early signs of fatigue, supervised prescription of stimulants (such as caffeine) and sedatives, use of monitoring equipment, and staff education and training.

[Lien vers l'article](#)

### Troubles cognitifs et de la vigilance

#### Interventions to promote well-being of nightshift nursing team members.

Wyche H, Weber A, McNulty T, Ruiz M, Keller S, Salmon ML, et al. *J Pediatr Nurs*. 2025 Feb 27.

**PURPOSE:** To measure the impact of a mindfulness or physical activity intervention and the combination of both on hospital nightshift nursing teams' professional quality of life, medication administration error, role meaning, and sleep quality. **DESIGN AND METHODS:** In this two-site study using a cluster cross-over randomized trial design, 18 units were randomized to one of two interventions (mindfulness or physical activity) during the first 8-week period and to both interventions during the second 8-week period. Questionnaires completed at baseline (T0), Week 8 (T1), and Week 18 (T2) included the Professional Quality of Life (ProQOL-21) (Compassion Satisfaction, Compassion Fatigue), PROMIS Sleep Disturbance, PROMIS Sleep Impairment, Sleep Hygiene, and Role-Related Meaning Scale for Staff (RRMSS). **RESULTS:** Participants (n = 82) completed questionnaires at T0, 33 at T1, and 23 at T2. Significant improvements in PROMIS Sleep Disturbance scores occurred within both study arms from T0 to T1 and T1 to T2 and within both arms in PROMIS Sleep Impairment scores from T0 to T1 and from T0 to T2. Across questionnaires, the largest improvement occurred between T0 and T2 and the least between T1 and T2. Compassion satisfaction had the largest improvement in the physical activity intervention and compassion fatigue had the largest improvement in the mindfulness intervention. **CONCLUSIONS:** Mindfulness and physical activity interventions can reduce sleep disturbance, sleep impairment, and compassion fatigue and improve compassion satisfaction in nightshift nursing care teams. **PRACTICE IMPLICATIONS:** Nursing care team members' sleep and professional quality of life could directly benefit from hospital-sponsored nightshift well-being interventions including mindfulness, physical activities and sleep hygiene information.

[Lien vers l'article](#)

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[Lien vers l'article](#)



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**Subjective and objective fatigue dynamics in air traffic control.**

Peukert M, Claus L, Meyer L. *Ind Health*. 2025 Feb 21.

Fatigue is a longstanding issue in air traffic control (ATC), closely associated with shift work and time-related factors. However, the dynamics of fatigue across morning, evening, and night shifts in an area control center (ACC) remain largely underexplored. This study examined sleep duration and fatigue progression across different shift types. Both objective (three-minute Psychomotor Vigilance Task, PVT-B) and subjective (Stanford Sleepiness Scale, SSS) measures were conducted at the beginning, middle, and end of each shift. Results indicated that pre-shift sleep duration was shortest before night shifts, likely increasing sleep pressure and reducing alertness during the window of circadian low (WOCL). Subjective fatigue remained stable throughout morning shifts but increased towards the end of evening shifts, reflecting circadian influences. Night shifts exhibited peak fatigue during the WOCL, driven primarily by circadian rhythms rather than task load. Objective measures revealed a mid-shift decline in performance, with only partial recovery in the latter half of night shifts. Compared to day shifts, night shifts resulted in significantly higher fatigue levels, underscoring the critical role of circadian rhythms in fatigue dynamics. These findings highlight the need for targeted fatigue mitigation strategies that address circadian vulnerabilities and irregular sleep patterns in ATC shift systems.

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**Physical and mental fatigue in shift work and mitigation strategies: an integrative review.**

Moreira AS, de Lucca SR. *Rev Bras Med Trab*. 2024 Oct-Dec;22(4):e20241267.

The new configurations of society have fragmented working hours into shifts, resulting in greater fatigue which affects worker health. Our aim was to identify the relationship between physical and mental fatigue and shift work and the main strategies for mitigating these effects. This review study was conducted between March and May 2023 using the Biblioteca Virtual em Saúde (Virtual Health Library). Twenty seven of the 1,176 identified articles were selected, with health professionals (doctors and nursing professionals), drivers, and aircraft pilots being the most studied populations. The following strategies for mitigating fatigue in shift work stood out: work schedule adjustments, interand

intra-workday rest associated with phototherapy, monitoring and evaluating early signs of fatigue, supervised prescription of stimulants (such as caffeine) and sedatives, use of monitoring equipment, and staff education and training.

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## HA comme facteur de risque

### Généralités et prévention

Aucun article dans ce bulletin.

### Activités physiques

Aucun article dans ce bulletin.

### Autres pathologies

Aucun article dans ce bulletin.

### Cancers

Aucun article dans ce bulletin.

### Risque routier, accidentologie

Aucun article dans ce bulletin.

### RPS et QVT

#### **Depression, anxiety and stress in taxi drivers: a systematic review of the literature.**

Marín-Berges M, Villa-Berges E, Lizana PA, Gómez-Bruton A, Iguacel I. *Int Arch Occup Environ Health*. 2025 Jan;98(1):135-54.

**PURPOSE:** Mental health is a global public health challenge, with mental disorders being a major cause of morbidity. Particularly, taxi drivers face unique challenges related to long working hours, economic instability, and hazardous working conditions. To summarise the existing scientific literature on mental disorders in taxi drivers and identify associated variables. **METHODS:** PubMed, Scopus and Web of Science databases were examined from inception to April 2024 following the PRISMA guidelines. Two authors independently selected original studies. We included observational studies published in English or Spanish or Portuguese, which assessed the mental health of taxi drivers. The Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies of the National Heart, Lung, and Blood Institute (NHBLI) was used to assess the quality of the articles. **RESULTS:** From an initial pool of 618 studies, eleven met the inclusion criteria and were included in the present systematic review. The findings indicate a considerable prevalence of mental health issues among taxi drivers in comparison to the general population. The prevalence of depression ranged from 14.3 to 60.5% and were driven by a number of factors, including perceived mental strain, lack of respect from operators, a stressful personal life, insufficient sleep, poor working conditions, work-family conflict and low work engagement. Anxiety was reported by 24.1-47% of drivers, with a lack of sufficient sleep being identified as a primary contributing factor. The prevalence of stress ranged from 19 to 55%, with key contributing factors including discrimination, smoking, limited language proficiency, sleep disorders and younger age. Furthermore, 33% of drivers displayed elevated levels of psychological distress, frequently linked to traumatic experiences and occupational hazards. **CONCLUSIONS:** Rates of depression, anxiety, stress and psychological distress are higher in taxi drivers than in general

population, therefore prevention strategies should target this group. SYSTEMATIC REVIEW REGISTRATION: PROSPERO registration no. CRD42023360073.

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### **Factors influencing the turnover of nurses in French intensive care unit-A multicenter interview survey.**

Vacheron CH, Bras M, Friggeri A, Manzon C, Vivier E, Caillet A, et al. *Anaesth Crit Care Pain Med.* 2025 Jan;44(1):101460.

**BACKGROUND:** Nurse retention is a major concern in healthcare settings, especially among intensive care units (ICU), in which nurses are highly specialized. The objective was to describe the nurse courses after their entrance into the ICU, their motivation for leaving the ICU, and to identify the independent factors that influenced the nurse resignation from their units. **METHODS:** In 3 different centers, every ICU nurse working between 2013 and 2023 was telephonically contacted and was asked to describe their career and, when appropriate, the reasons that influenced their resignation from their units; they rated on a Likert scale of 14 factors that influenced their decision. **RESULTS:** Among the 405 nurses who worked in these ICUs between 2013 and 2023, 265 (65.0%) were included in the study, and 93 (35.1%) were still working in their unit. The median time of professional experience of the nurses in their ICU was 5.8 [5.0-7.0] years, and at 10 years, 26.3% [20.4-33.9] of the nurses remained in their unit, 23.8% [17.3-32.8] left the ICU but were still in-hospital nurses, and 22.4% [15.8-31.7] underwent specialization. A minority of nurses resigned and changed their careers (9.5% [5.3-17.0]). The main factors influencing the nurse's resignation from their unit were belonging to Generation Y or Z (HR 1.89 [1.35;2.64]), experiencing symptoms of burnout (2.37 [1.63;3.46]), and pregnancy during the ICU (1.77 [1.41;2.23]). The COVID-19 period was inconsistently associated with nurse resignation depending on the center. The main motivations to leave the unit were organizational (variability of schedule, night shift), personal (willingness to change, personal event), and related to the ICU workload. **CONCLUSION:** Nurse retention is an increasing concern, associated with the generational aspects and increased prevalence of burnout. Structural changes will have to be made to reduce the turnover.

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### **Exploration of Challenges and Opportunities for Good Pharmacy Practices in Bangladesh: A Qualitative Study.**

Chakma N, Ali SB, Islam MS, Momtaz T, Farzana N, Amzad R, et al. *Pharmacy (Basel).* 2025 Feb 13;13(1).

**BACKGROUND:** In 2015, the Directorate General of Drug Administration (DGDA) of Bangladesh accredited model pharmacies (MPs) to enhance the quality of pharmacy services across the country. We examined the challenges and opportunities for pharmacists in MPs, and also explored the perspectives of the pharmacy stakeholders for improving good pharmacy practices (GPPs) in Bangladesh. **METHODS:** In-depth interviews (IDIs) were conducted with graduate pharmacists (Grade A) and diploma pharmacists (Grade B) recruited from a few selected MPs that were included in a previous study. Key informant interviews (KIIs) were conducted with the government and non-government stakeholders who were involved in pharmacy regulations and practices. Trained qualitative researchers conducted IDIs and KIIs using interview topic guides under relevant themes developed by the study investigators. **RESULTS:** Between February and March 2021, nine Grade A and six Grade B pharmacists and nine government and non-government stakeholders were interviewed. The key challenges, as well as demotivational factors, for Grade A pharmacists were reported to be multiple responsibilities, inadequate salary, poor social status, an unfavorable working environment, long working hours, a lack of recognition, and low respect for their profession. However, Grade B pharmacists expressed job satisfaction, primarily due to working opportunities in reputable pharmacies and learning opportunities. The stakeholders reported a high operation cost of the MPs, a

shortage of trained pharmacists, poor salary structures, and a lack of public awareness about the critical roles of the pharmacists in healthcare to be challenges of retaining Grade A pharmacists at the MPs. Addressing the challenges of the pharmacists and revising compensation packages along with strengthening monitoring systems would be important for improving GPPs at the MPs. **CONCLUSIONS:** This study has demonstrated that specifying the roles of the pharmacists, offering competitive packages, conducive working hours, and professional recognition would be imperative for the retention of trained pharmacists at MPs. Implementing regulatory standards and monitoring performance would enhance good pharmacy practices in Bangladesh.

[Lien vers l'article](#)

### **Perceived barriers to physical activity and their predictors among adults in the Central Region in Saudi Arabia: Gender differences and cultural aspects.**

Abdelhay O, Altamimi M, Abdelhay Q, Manajrah M, Tourkmani AM, Altamimi M, et al. *PLoS One*. 2025;20(2):e0318798.

**OBJECTIVE:** To assess the perceived barriers hindering physical activity among adult residents of Riyadh, Saudi Arabia, and to identify associated sociodemographic and health-related factors, focusing on gender differences and cultural aspects. **METHODS:** A cross-sectional survey was conducted from the 9th of January 2022 to the 2nd of February 2023, involving 7,903 physically inactive participants aged 18 to 80. Participants were recruited using a two-stage cluster sampling method from the Central Region of Saudi Arabia. In the first stage, subregions based on the administrative distribution by the Medical Service Department were selected. In the second stage, private and public entities within these subregions were identified from governmental agency lists. Participants were then conveniently approached within these entities. Data were collected using a validated questionnaire, the Perceived Barriers to Being Active Questionnaire (PBAQ), assessing sociodemographic characteristics, health history, dietary habits, and perceived internal and external barriers to physical activity. **RESULTS:** Of the participants, 67.2% were male, with a mean age of  $36.45 \pm 13.69$  years. Approximately one-third (35%) reported experiencing at least one internal barrier to physical activity, while 64.3% reported 1-2 internal barriers. For external barriers, 76.5% faced 1-2 barriers. The most common internal barriers were laziness (40.2%) and lack of self-motivation (27.5%); the most prevalent external barriers were lack of facilities (20.2%) and long working hours (19.6%). Females were significantly more likely than males to report cultural reasons (odds ratio [OR] = 4.83; 95% confidence interval [CI]: 4.06-5.76;  $p < 0.001$ ) and religious reasons (OR = 3.31; 95% CI: 2.59-4.23;  $p < 0.001$ ) as internal barriers. Multivariate analysis revealed that females were 14% more likely than males to report external barriers to physical activity (OR = 1.14; 95% CI: 1.04-1.25;  $p = 0.018$ ), suggesting gender plays a role in perceived external obstacles. Additionally, older age, higher body mass index, higher education level, marriage, certain employment statuses, and chronic diseases were significantly associated with increased reported internal and external barriers. These findings highlight the complex interplay of demographic and health-related factors influencing physical activity participation. **CONCLUSIONS:** There is a high prevalence of both internal and external barriers to physical activity among Saudi adults, with notable gender differences influenced by cultural factors. Females were more likely to report cultural and religious reasons as barriers. Tailored policies and interventions are urgently needed to address these barriers, such as promoting gender-specific physical activity programs, integrating physical activity into workplaces, enhancing public facilities, and conducting culturally sensitive educational campaigns. Addressing both internal motivations and external obstacles is essential to increase physical activity levels and combat the rising burden of non-communicable diseases in Saudi Arabia.

[Lien vers l'article](#)

### **Occupational Factors Influencing Turnover Intention in Working Women With Lower Urinary Tract Symptoms.**

Jung JH, Lee YM, Lee J, Kim HR, Cho HA, Kang MY. *J Occup Environ Med.* 2025 Feb 1;67(2):e96-e102.

**OBJECTIVE:** This study aimed to identify the occupational factors that influence turnover intention among working women with lower urinary tract symptoms (LUTS). **METHODS:** This cross-sectional study targeted 410 working women with LUTS from a 2022 survey. Occupational characteristics, including working hours, shift work, bathroom accessibility, sitting time, musculoskeletal strain, job stress, and emotional labor, were assessed through a structured self-reported questionnaire using validated tools. Multiple logistic regression was applied to analyze the association of these factors with turnover intention. **RESULTS:** Women who worked >52 hours per week had an odds ratio of 2.02 for turnover intention compared to those who worked fewer hours. Higher job stress and emotional labor scores also were associated with increased turnover intention. **CONCLUSIONS:** Women with LUTS have higher turnover intention due to vulnerability to long hours, job stress, and emotional labor.

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### **Perception of nephrology in Europe: a strategy to improve recruitment of motivated fellows.**

Weinstein T, Vogelsang N, Sonkodi S, Slotki I, Martín-Carro B, Lappin D, et al. *Clin Kidney J.* 2024 Dec;17(12):sfae326.

**BACKGROUND:** The shortage of applications for fellowships in nephrology is a worldwide challenge. This is the first survey to explore in Europe the reasons physicians choose (and do not choose) a career in nephrology. **METHODS:** An anonymous questionnaire was sent to the presidents of societies that are members of the European Renal Association (ERA), who invited trainees and nephrologists to respond. Statistical analysis was performed using SPSS v.26. (SPSS Inc., Chicago, IL, USA). Continuous variables were compared by Student's t-test or by one-way ANOVA. **RESULTS:** Responders included 516 (49%) females and 542 (51%) males. They comprised 278 (26%) trainees, and 780 (74%) nephrologists. The majority (64%) believe that students have an unfavourable perception of nephrology. For trainees, nephrology is not considered an attractive option due to 'chronically ill patients' (35%), 'lack of contact during undergraduate training' (37%), 'nephrology is too challenging' (38%), 'poor remuneration' (22%), 'negative role models' (15%), and 'long working hours' (14%). The factors with the greatest impact on choosing a career include a positive role model (46%), practical experience during medical school and early postgraduate training (42%). **CONCLUSION:** Trainees emphasize that work-life balance is very important for the younger generation. A strong mentorship along with early engagement is associated with a higher likelihood of pursuing a career in nephrology. It is crucial to create a strategy that will provide a positive experience, renew the interest in nephrology careers and ensure enough nephrologists to treat the growing number of patients with kidney disease.

[Lien vers l'article](#)

### **« Docteurs Juniors » en néphrologie en France : premiers retours d'expérience.**

Vial E, Bobot M, Bertocchio JP, Lohéac C, Bon G, Roussel M, et al. *Nephrol Ther.* 2024 Aug 1;20(4):240-50.

Medical education in France has undergone several major reforms in recent years. In 2017, the reform of the third cycle of medical studies was implemented. This particularly affected nephrology. The reform introduced a new status of "junior doctor". Its main objective is to ensure the transition from intern to senior doctor. The "Syndicat National des Internes de Néphrologie" (SNIN) conducted a survey to take stock of this new status in our specialty. The respondents were contacted through their city referents. We received 53 completed questionnaires from Nephrology junior-doctors with an

average age of 29 years from all over France. The choice of assignment was satisfactory in 93% of cases. The activity of these juniors-doctors was mainly oriented towards clinical nephrology or was mixed, with the possibility of own consultations for almost all residents. The on-call or nightshift activity of the junior-doctors was mainly concentrated in their home department, with only one third of them working as substitute. Their weekly working hours were substantial (mostly between 45 and 65 hours/week), with a significant number exceeding the legal limit. Overall, supervision was considered satisfactory. Very few residents had time for research or theoretical-learning, although some gave lessons and received training mainly through conferences. Progress in performing renal biopsies was substantial, in contrast to central venous catheter placement and peritoneal dialysis management, where progress was judged to be weak.

[Lien vers l'article](#)

### **Occupational stress and its correlates among healthcare workers of a tertiary level teaching hospital in Kathmandu, Nepal, during COVID-19 pandemic: a cross-sectional study.**

Thapa S, Pradhan PMS. *BMJ Public Health*. 2024 Jun;2(1):e000126.

**BACKGROUND:** Healthcare workers experience high job stress, contributing to negative health outcomes and poor patient care. This study aims to assess occupational stress and its associated factors among healthcare workers at a tertiary hospital during COVID-19 pandemic in Kathmandu, Nepal. **METHODS:** A cross-sectional quantitative study was conducted among doctors and nurses in a tertiary hospital. A self-administered questionnaire was used to collect data from 368 participants. Bivariate and multiple linear regression analysis identified the predictors associated with occupational stress. **RESULTS:** The mean occupational stress index score was  $149.56 \pm 22.01$ . It was significantly higher among female participants ( $151.59 \pm 19.12$  vs  $144.2 \pm 27.6$ ,  $p=0.004$ ), married individuals ( $152.06 \pm 19.79$  vs  $147.01 \pm 23.86$ ,  $p=0.028$ ), those with over 1 year of employment duration ( $152.17 \pm 21.28$  vs  $145.45 \pm 22.60$ ,  $p=0.004$ ), health workers attending more than four night shift a month ( $152.30 \pm 19.44$  vs  $135.52 \pm 28.45$ ,  $p<0.001$ ), those working in rotating shift ( $151.68 \pm 21.12$  vs  $142.17 \pm 23.57$ ,  $p=0.006$ ), those working 48 hours or more per week ( $152.39 \pm 19.28$  vs  $145.97 \pm 24.66$ ,  $p=0.005$ ), those lacking support from other staff ( $157.81 \pm 18.70$  vs  $148.17 \pm 22.25$ ,  $p=0.003$ ) and those who consumed alcohol ( $152.14 \pm 21.25$  vs  $147.18 \pm 22.49$ ,  $p=0.031$ ). Multiple linear regression revealed associations with employment duration over 1 year ( $\beta=0.174$ ,  $p=0.001$ ), rotating shift ( $\beta=-0.106$ ,  $p=0.006$ ), night shifts ( $\beta=0.251$ ,  $p<0.001$ ), working hours of 48 hours or more per week ( $\beta=0.175$ ,  $p=0.001$ ), lack of support from other staff ( $\beta=0.130$ ,  $p=0.010$ ) and low-wealth quintile ( $\beta=0.161$ ,  $p=0.006$ ). **CONCLUSION:** Occupational stress is associated with employment duration, night shift, rotating shift, working hours, support mechanisms and socioeconomic profile among healthcare workers. There is a crucial need to establish evidence-based actions to prevent occupational stress and promote the overall health of healthcare workers.

[Lien vers l'article](#)

### **Santé psychique**

### **Association of workforce participation with depression among US older adults: results from NHANES 2005-2018.**

Sun Z, Wang Y, Chen X, Qian D. *BMC Geriatr*. 2025 Feb 4;25(1):77.

**BACKGROUND:** The challenges of global aging would boost more workforce participation of older adults, and depression rate was increasing among older adults. This study aimed to explore the associations of workforce participation with depression among US older adults. **METHODS:** This cross-sectional study used data from the National Health and Nutrition Examination Survey (NHANES) 2005-

2018. Depression was measured with Patient Health Questionnaire-9 items (PHQ-9). Workforce participation was measured with work status, work types, shift work, and hours worked per week. Multivariate generalised linear and logistic regression models, also with restricted cubic spline (RCS) were performed to examine linear or non-linear associations between workforce participation and depression. Analyses of subgroup and sensitivity were conducted: using data from non-multiple imputation, participants aged over 65, and all non-excluded participants aged 60 or above to execute repeated analysis; recruiting propensity score matching (PSM) method that focused on selected SDoH, lifestyle, and health status-related factors to strengthen essential comparability between workers and non-workers; employing two-stage least squares (2SLS) model and setting retirement age (over 65 years or not) as an instrumental variable (IV) to solve the potential reverse causation between work status and depression. RESULTS: A total of 10,312 participants aged 60 or above were enrolled with a prevalence of depression of 6.4%. There was a significantly negative association of PHQ-9 score with working (Exp [ $\beta$ ] = 0.68; 95%CI: 0.53-0.87), working as private employee (Exp [ $\beta$ ] = 0.67; 95%CI: 0.50-0.89), or working on regular daytime (Exp [ $\beta$ ] = 0.65; 95%CI: 0.52-0.82). Especially, regular daytime working reduced depression risk by 52% compared with those who not working (OR = 0.48; 95%CI: 0.27-0.87). A significant decreased PHQ-9 score and depression risk as hours worked per week increased until reaching 34.86 and 25.35 in the RCS for generalised linear and logistic regression models, respectively. These effects were consistent across the analyses of subgroup and sensitivity. CONCLUSIONS: Regular daytime working was positively related to decreased depression risk among US older adults, and the suggested optimal working hours were 25 to 35 per week. Policymakers should appreciate the potential value of moderate workforce participation to mental health among older adults.

[Lien vers l'article](#)

### **Prevalence and contributory factors to burnout in the New Zealand surgical specialist and registrar population.**

Dholakia J, Narayanan A, Smith N. *Front Public Health*. 2025;13:1541892.

Burnout is a growing phenomenon among medical professionals due to aging patient populations and an increasing burden of chronic disease, in a resource constrained environment. We aim to quantify the prevalence of burnout in surgical specialists and registrars at a tertiary center in New Zealand and identify contributory factors, using a New Zealand based tool, the McEwan Burnout Questionnaire. Of the 110 people surveyed, 55% respondents had concern or high risk of burnout. Contributory factors were frustration with management, lack of resources and long working hours, with predominance toward fatigue and service provision over career progression among the registrar group. Bullying and harassment were reported more in the sub-specialty groups. More time in private practice appeared to be associated with less concern for burnout. These high rates of burnout require targeted interventions toward contributory factors to protect our workers and to maintain a sustainable workforce.

[Lien vers l'article](#)

### **Burnout crisis in Chinese radiology: will artificial intelligence help?**

Fang X, Ma C, Liu X, Deng X, Liao J, Zhang T. *Eur Radiol*. 2025 Mar;35(3):1215-24.

OBJECTIVES: To assess the correlation between the use of artificial intelligence (AI) software and burnout in the radiology departments of hospitals in China. METHODS: This study employed a cross-sectional research design. From February to July 2024, an online survey was conducted among radiologists and technicians at 68 public hospitals in China. The survey utilized general information questionnaires, the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) scale, and a custom-designed AI usage questionnaire. This study analyzed the correlation between AI software usage and



occupational burnout, and general information was included as a control variable in a multiple linear regression analysis. RESULTS: The analysis of survey data from 522 radiology staff revealed that 389 (74.5%) had used AI and that 252 (48.3%) had used it for more than 12 months. Only 133 (25.5%) had not yet adopted AI. Among the respondents, radiologists had a higher AI usage rate (82.0%) than technicians (only 59.9%). Furthermore, 344 (65.9%) of the respondents exhibited signs of burnout. The duration of AI software usage was significantly negatively correlated with overall burnout, yielding a Pearson correlation coefficient of -0.112 ( $p < 0.05$ ). Multiple stepwise regression analysis revealed that salary satisfaction, night shifts, duration of AI usage, weekly working hours, having children, and professional rank were the main factors influencing occupational burnout (all  $p < 0.05$ ). CONCLUSION: AI has the potential to significantly help mitigate occupational burnout among radiology staff. This study reveals the key role that AI plays in assisting radiology staff in their work. KEY POINTS: Questions Although we are aware that radiology staff burnout is intensifying, there is no quantitative research assessing whether artificial intelligence software can mitigate this occupational burnout. Findings The longer staff use deep learning-based artificial intelligence imaging software, the less severe their occupational burnout tends to be. This result is particularly evident among radiologists. Clinical relevance In China, radiologists and technicians experience high burnout rates. Even if there is an artificial intelligence usage controversy, encouraging the use of artificial intelligence software in radiology helps prevent and alleviate this occupational burnout.

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### **A prospective study of the association between lifestyle and the risk of depressive symptoms.**

Sato A, Eguchi E, Hayashi F, Funakubo N, Okada T, Kiyama M, et al. *J Affect Disord.* 2025 May 1;376:269-79.

BACKGROUND: Few studies have prospectively, comprehensively, and by sex, examined the relationship between lifestyle and depressive symptoms. This study aimed to longitudinally examine which lifestyle factors are associated with depressive symptoms in a large cohort of Japanese participants stratified by sex. METHODS: Among 9087 office and community-based residents who attended a health measurement course at the Osaka Medical Center for Health Science and Promotion between 2001 and 2002, 6629 individuals (3962 men and 2667 women) without prior depressive symptoms were followed until the end of March 2012 to observe the associations between lifestyle factors and the development of new depressive symptoms. RESULTS: During the 5.06-year follow-up, 913 participants (517 men and 397 women) developed new depressive symptoms. Lifestyle factors such as very low physical activity, short sleep duration, smoking, skipping breakfast, and consuming a high-fat, high-sodium diet, were associated with increased hazard ratios for depressive symptoms. Conversely, regular exercise, stress-coping methods, and diets rich in fish and fruit were associated with a reduced risk of depressive symptoms. In men, the risk was increased by very low physical activity, smoking, and diets including sugar-sweetened drinks, fatty meats, noodle soups, and highly seasoned dishes. In women, the risk was increased by long working hours and decreased by diets including seafood and fruits. CONCLUSIONS: Sex-specific differences were observed in the relationship between lifestyle and the onset of depressive symptoms. Alongside shared factors, such as sleep and stress management, sex-specific strategies could enhance prevention.

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### **Depression, anxiety and stress in taxi drivers: a systematic review of the literature.**

Marín-Berges M, Villa-Berges E, Lizana PA, Gómez-Bruton A, Iguacel I. *Int Arch Occup Environ Health.* 2025 Jan;98(1):135-54.

PURPOSE: Mental health is a global public health challenge, with mental disorders being a major cause of morbidity. Particularly, taxi drivers face unique challenges related to long working hours, economic

instability, and hazardous working conditions. To summarise the existing scientific literature on mental disorders in taxi drivers and identify associated variables. METHODS: PubMed, Scopus and Web of Science databases were examined from inception to April 2024 following the PRISMA guidelines. Two authors independently selected original studies. We included observational studies published in English or Spanish or Portuguese, which assessed the mental health of taxi drivers. The Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies of the National Heart, Lung, and Blood Institute (NHBLI) was used to assess the quality of the articles. RESULTS: From an initial pool of 618 studies, eleven met the inclusion criteria and were included in the present systematic review. The findings indicate a considerable prevalence of mental health issues among taxi drivers in comparison to the general population. The prevalence of depression ranged from 14.3 to 60.5% and were driven by a number of factors, including perceived mental strain, lack of respect from operators, a stressful personal life, insufficient sleep, poor working conditions, work-family conflict and low work engagement. Anxiety was reported by 24.1-47% of drivers, with a lack of sufficient sleep being identified as a primary contributing factor. The prevalence of stress ranged from 19 to 55%, with key contributing factors including discrimination, smoking, limited language proficiency, sleep disorders and younger age. Furthermore, 33% of drivers displayed elevated levels of psychological distress, frequently linked to traumatic experiences and occupational hazards. CONCLUSIONS: Rates of depression, anxiety, stress and psychological distress are higher in taxi drivers than in general population, therefore prevention strategies should target this group. SYSTEMATIC REVIEW REGISTRATION: PROSPERO registration no. CRD42023360073.

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### **Mitigating burnout and suicidal ideation in the Brazilian health care workforce: the role of workplace support during COVID-19.**

Moser CM, Tietbohl-Santos B, Bassols AMS, Laskoski PB, Hauck S. *Rev Bras Med Trab.* 2024 Oct-Dec;22(4):e20241290.

INTRODUCTION: The mental health of health care workers has become a major concern, especially in the context of the COVID-19 pandemic. Identifying associated factors that could be targeted for prevention and specific interventions is crucial. OBJECTIVES: To investigate burnout, suicidal ideation, and associated factors among Brazilian health care workers during the pandemic. METHODS: A cross-sectional web-based survey was conducted from May 22 to June 22, 2020. The Copenhagen Burnout Inventory was used to assess three dimensions of burnout (personal, work-related, and client-related). Individual and occupational data were also evaluated. RESULTS: Among 844 participants (81% female, age  $41.9 \pm 10.9$  years), clinically relevant burnout rates were 54.6% according to the Copenhagen Burnout Inventory personal dimension, with an 8.3% incidence of suicidal ideation in the last month. Workplace support exhibited the strongest association with all three burnout dimensions ( $\beta = -0.29-0.37$ ;  $p < 0.001$ ) and suicidal ideation ( $\text{Exp}[b] = 0.95$ ;  $p = 0.002$ ), emerging as a crucial protective factor, even when adjusting for other variables. Older age, higher household income, and regular physical exercise also emerged as protective factors against burnout, but not against suicidal ideation. Female gender, direct involvement in care of COVID-19 patients, longer working hours, and self-perceived high-risk status for COVID were risk factors solely for burnout. Childhood trauma and a history of psychiatric diagnosis were associated with both burnout and suicidal ideation. CONCLUSIONS: Fostering a supportive work environment could prove to be an effective strategy to mitigate mental health risks among health care workers in response to chronic stress, even in vulnerable contexts such as major health crises.

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Troubles cognitifs et de la vigilance

**A Guided Comparative Analysis of Fatigue Frameworks in Australasian Ambulance Services.**

Ferris MJ, Wolkow AP, Bowles KA, Lalor A. *Prehosp Emerg Care*. 2025;29(2):120-8.

**OBJECTIVE:** Paramedics work in a complex, unpredictable environment, subject to many external stressors including critically unwell patients, dangerous driving conditions, and prolonged shift work. Paramedic fatigue from these and other occupational demands is well documented. Ambulance services attempt to safeguard paramedics from fatigue using internal policies or procedures - a type of Fatigue Risk Management Systems (FRMSs). This study reviews ambulance service fatigue frameworks to understand the current situation in fatigue management in paramedicine, and to identify fatigue monitoring tools, strategies, and other components of these frameworks that are designed to protect personnel. **METHODS:** This study involved a qualitative document thematic content analysis. All eleven statutory ambulance services across Australia, New Zealand, and Papua New Guinea, represented by the Council of Ambulance Authorities, were contacted and invited to participate. Fatigue frameworks were collated and entered into NVivo where data extraction occurred through three a priori areas (fatigue, fatigue mitigation tools & fatigue management). **RESULTS:** Nine of the eleven ambulance services provided fatigue documentation, with one declining to participate, and one did not respond to invitations. Through thematic analysis and abstraction, seven themes were identified: fatigue definition, consequences of fatigue, sources of fatigue, signs and symptoms of fatigue, fatigue-related incidents, fatigue monitoring tools, and fatigue mitigation. There was also poor alignment between provided frameworks and established FRMSs components. **CONCLUSION:** Our findings provide an initial insight into existing ambulance service fatigue frameworks across Australia, New Zealand, and Papua New Guinea. The many inconsistencies in frameworks between ambulance services highlight an opportunity to develop a more consistent, collaborative approach that follows evidence-based FRMSs guidelines.

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## Travail posté et de nuit facteur de risque

### Généralités et prévention

Aucun article dans ce bulletin.

### Activités physiques

#### **The prevalence of work-related musculoskeletal system disorders in health personnel working in the operating room and their relationship with sleep disorder.**

Surel F, Surel AA, Bakırcı E, Karakılıç GD, Borman P. *Int J Occup Saf Ergon.* 2025 Feb 24:1-6.

**Objectives.** The aim of this study was to investigate the frequency of work-related musculoskeletal system disorders (WRMSDs) in health personnel working in the operating room, the factors affecting WRMSDs, and the relationship between work-related sleep disturbance and musculoskeletal system problems. **Methods.** The study included 315 health personnel working in the operating room for at least 1 year. Musculoskeletal disorders (MSDs) were investigated with the Cornell musculoskeletal discomfort questionnaire (CMDQ), and sleep disorders were assessed with the Jenkins sleep scale. **Results.** In total, 57.5% of the operating room personnel had chronic MSDs. CMDQ scores were statistically significantly higher in women than in men ( $p < 0.01$ ). CMDQ scores were statistically significantly higher in employees with sleep problems ( $p < 0.01$ ). No statistically significant correlation was found between CMDQ scores and smoking, shift working periods and regular exercise ( $p = 0.63$ ,  $p = 0.29$  and  $p = 0.543$ , respectively). Jenkins sleep scale and Visual analog scale values were statistically positively correlated with CMDQ values ( $p < 0.01$ ). **Conclusion.** Women and people with sleep disorders were potentially more at risk for WMRSDs in this study. More comprehensive studies with large populations are needed to determine the risk factors for WMRSDs in operating room personnel and to develop preventive methods to prevent WMRSDs.

[Lien vers l'article](#)

### Autres pathologies

#### **Working behaviors and the risk of sensorineural hearing loss: A large cohort study.**

Pang W, Song Y, Xie J, Yan X, Luo Y, Qiu K, et al. *Scand J Work Environ Health.* 2025 Mar 1;51(2):77-88.

**OBJECTIVES:** This study aimed to investigate the association between working behaviors and sensorineural hearing loss (SNHL). **METHODS:** A cross-sectional analysis was conducted (N=90 286) to assess the association between working behaviors (including shift work, night shift work and physically demanding work) and the occurrence (yes/no), laterality (unilateral/bilateral), and severity (mild/severe) of SNHL. A prospective analysis was conducted to explore the association between new-onset SNHL and working behaviors (N=8341). Multivariable logistic regression and Cox regression models were performed. Subgroup analyses were further carried out, stratified by age, sex, and chronotype. Furthermore, a polygenic risk score (PRS) was calculated to assess the influence of genetic susceptibility on the relationship. **RESULTS:** Cross-sectional analysis indicated that shift work, night shift work and physically demanding work were all associated with an increased risk of SNHL (all  $P < 0.05$ ). These working behaviors were also associated with increased severity of SNHL (all  $P < 0.05$ ) and a higher likelihood of bilateral SNHL (all  $P < 0.05$ ). In prospective studies, the trends were generally consistent with the aforementioned results. Furthermore, the relationship between night shift work and SNHL was particularly pronounced among individuals with morning chronotype (P-interaction=0.007), or with  $\leq 5$  years noisy work environments (P-interaction=0.026). Importantly, regardless of the level of genetic risk of PRS, a positive association remained between night shift work and physically demanding work with SNHL. **CONCLUSIONS:** Both cross-sectional and prospective

analysis indicated that shift work, night shift work, and physically demanding work were associated with increased risk of occurrence, laterality and severity of SNHL, regardless of PRS for SHNL.

[Lien vers l'article](#)

### **Acute night shift work is associated with increased blood pressure and reduced sleep duration in healthy adults.**

Seward SL, Kishman EE, Rynders CA, Broussard JL. *Physiol Rep*. 2025 Feb;13(3):e70231.

Shift workers have a 40% higher risk for cardiovascular disease (CVD) compared to people who work day shifts. However, the acute impact of shift work on CVD risk factors in free-living settings remains unclear. We therefore investigated the impact of acute night shift work on factors related to cardiovascular health including blood pressure (BP) and sleep duration. Twenty-four rotating shift workers (19F, 23 ± 4 y, BMI: 23 ± 3 kg/m<sup>2</sup>; mean ± SD) participated in a quasi-randomized crossover study. Assessments were conducted over the course of 1 day shift and one night shift in a free-living setting. BP was measured every 30 min by an ambulatory monitor. Sleep and wake times were recorded. Mixed effects models were conducted to examine changes in variables between conditions. Acute night shift work was associated with significantly higher 24 h systolic (107 ± 1 vs. 104 ± 1 mmHg; p < 0.0001) and diastolic (67 ± 1 vs. 64 ± 1 mmHg; p < 0.0001) BP, as well as blunted dipping patterns in systolic BP (8 ± 1 vs. 12 ± 1%; p = 0.032), as compared to day shift work. Sleep duration was significantly shorter during the night shift as compared to the day shift (4 h 04 ± 19 min vs. 8 h 22 ± 18 min; p < 0.0001). As little as one night of shift work in a free-living setting is sufficient to induce multiple CVD risk factors including increased BP and reduced sleep duration in healthy adults. It is critical to identify strategies to prevent or attenuate the negative impact of shift work on CVD risk in a large portion of the working population.

[Lien vers l'article](#)

### **Investigating the risk and protective factors of ageing at work: A reflexive thematic analysis.**

Bacci G, Viotti S, Guidetti G, Sottimano I, Converso D, Edge C. *Work*. 2025 Jan 21:10519815241300411.

**BACKGROUND:** The ageing of the working population and the sustainability of work throughout the life cycle represent a significant challenge for many European countries, particularly in relation to the implementation of legislation raising the retirement age. **OBJECTIVE:** The objective of this study was to examine the physical, psychological and social risk and protective factors that influence the sustainability of work during the ageing process. **METHODS:** Twenty-five interviews were conducted, followed by a reflexive thematic analysis, with the aim of gathering the perspectives of a company's employees regarding factors related to ageing in the workplace. **RESULTS:** Two key themes emerged from the analysis, encapsulating the participants' different perceptions of risk and protective factors. Among the physical risk factors were those related to stress caused by job characteristics, which affect physical health. In addition, the study identified continuous shift work as a significant risk factor, which affects both physical health and the ability to reconcile work and family life. In addition, the responsibility of caring for dependent elderly family members and childcare responsibilities were highlighted as social factors that may affect employees' well-being. **CONCLUSIONS:** The study provides a useful basis for the implementation of company interventions to improve the work sustainability of older employees, with possible applications in other similar companies.

[Lien vers l'article](#)

**Psychosocial risk factors of lower urinary tract symptoms among working women.**

Yoo H, Kang MY. *Int J Urol*. 2025 Feb;32(2):158-63.

**OBJECTIVES:** Lower urinary tract symptoms (LUTS) are prevalent among women, affecting not only their physical well-being but also their quality of working life. This study aimed to assess the relationship between psychosocial factors at work and LUTS among working women. Additionally, we sought to investigate whether women with psychosocial risk factors at work reported reduced quality of life (QOL) and a higher degree of productivity loss from absenteeism and presenteeism. **METHODS:** An online survey was conducted to collect the demographic characteristics, occupational risk factors, and LUTS among employed Korean women. Shift work, weekly working hours, occupational stress, and emotional labor were surveyed as psychosocial risk factors at work. The association between psychosocial risk factors and LUTS was assessed using adjusted logistic regression. The relationships between psychosocial risk factors and LUTS-related outcomes, such as were examined using a generalized linear model. **RESULTS:** Of the 1057 participants, 260 (24.6%) and 294 (27.81%) had overactive bladder and urinary incontinence, respectively. Job stress, emotional labor, and night-shift work are significantly associated with a higher prevalence of LUTS, which reduce workers' QOL and labor productivity through absenteeism and presenteeism due to urination symptoms. **CONCLUSIONS:** Psychosocial factors at work, particularly job stress, emotional labor, and night-shift work, were significantly associated with a higher prevalence of LUTS, leading to reduced QOL and labor productivity due to urination symptoms.

[Lien vers l'article](#)

**Cancers****Bibliometric analysis of global research status and trends of circadian rhythms in cancer from 2004 to 2024.**

Chen Z, Jiang S, Liu Y, Zhang T, Zheng H, Mao Y, et al. *Chronobiol Int*. 2025 Feb;42(2):185-97.

Research linking circadian dysregulation to cancer development has received increasing attention recently. However, a comprehensive understanding of research hotspots and trends in this area remains limited. International studies on the circadian rhythms in cancer were retrieved and downloaded from the Web of Science database. Bibliometric analysis and visualization were performed using VOSviewer, CiteSpace, and HistCite. Three thousand three hundred and eighteen English articles from 2004 to 2024 were screened and evaluated. The increase in publications and citations reflected the rapid expansion of the field. Scholars and institutions in the United States have relatively high academic productivity and impact. Chronobiology International is the most popular journal. Key clustering analysis identified six themes: biochemistry and molecular biology, physiology and immunomodulation, night shift work and health effects, physiological and mental health, tumor therapy research, and oxidative stress and cancer-related mechanisms. Keyword burst analysis identified the regulation of circadian rhythms on cells and tumor microenvironment as the research frontiers. The role of circadian rhythms in tumor immunotherapy was a current research hotspot identified by reference co-citation clustering analysis. This study reveals the current status of research on the circadian rhythms in cancer and predicts future trends. These findings provide new ideas for developing novel cancer prevention and treatment strategies.

[Lien vers l'article](#)

### Risque routier, accidentologie

Aucun article dans ce bulletin.

### RPS et QVT

#### **Factors influencing the turnover of nurses in French intensive care unit-A multicenter interview survey.**

Vacheron CH, Bras M, Friggeri A, Manzon C, Vivier E, Caillet A, et al. *Anaesth Crit Care Pain Med.* 2025 Jan;44(1):101460.

**BACKGROUND:** Nurse retention is a major concern in healthcare settings, especially among intensive care units (ICU), in which nurses are highly specialized. The objective was to describe the nurse courses after their entrance into the ICU, their motivation for leaving the ICU, and to identify the independent factors that influenced the nurse resignation from their units. **METHODS:** In 3 different centers, every ICU nurse working between 2013 and 2023 was telephonically contacted and was asked to describe their career and, when appropriate, the reasons that influenced their resignation from their units; they rated on a Likert scale of 14 factors that influenced their decision. **RESULTS:** Among the 405 nurses who worked in these ICUs between 2013 and 2023, 265 (65.0%) were included in the study, and 93 (35.1%) were still working in their unit. The median time of professional experience of the nurses in their ICU was 5.8 [5.0-7.0] years, and at 10 years, 26.3% [20.4-33.9] of the nurses remained in their unit, 23.8% [17.3-32.8] left the ICU but were still in-hospital nurses, and 22.4% [15.8-31.7] underwent specialization. A minority of nurses resigned and changed their careers (9.5% [5.3-17.0]). The main factors influencing the nurse's resignation from their unit were belonging to Generation Y or Z (HR 1.89 [1.35;2.64]), experiencing symptoms of burnout (2.37 [1.63;3.46]), and pregnancy during the ICU (1.77 [1.41;2.23]). The COVID-19 period was inconsistently associated with nurse resignation depending on the center. The main motivations to leave the unit were organizational (variability of schedule, night shift), personal (willingness to change, personal event), and related to the ICU workload. **CONCLUSION:** Nurse retention is an increasing concern, associated with the generational aspects and increased prevalence of burnout. Structural changes will have to be made to reduce the turnover.

[Lien vers l'article](#)

#### **Status and associations of transition shock among nursing students during clinical practice: A cross-sectional study.**

Tang Y, Chen X, Liao Y, Zheng T, Xiao Y, You Y. *PLoS One.* 2025;20(2):e0313524.

**AIM:** This study aimed to investigate the current state and influencing factors of transition shock among nursing students during clinical practice. **BACKGROUND:** Transition shock among nursing students can significantly impact their academic performance and well-being. Understanding the key factors contributing to this shock is crucial for developing effective support strategies and improving overall educational outcomes. **METHODS:** This cross-sectional study was conducted on October 8-28, 2022 at four tertiary Class A hospitals in Changsha, Hunan Province, located in south-central China. A convenience sample of 620 full-time nursing students was surveyed to collect demographic information and assess their transition shock levels using the transition shock scale. Data analysis included descriptive statistics, nonparametric tests, correlation analysis, and multiple regression. STROBE checklist was used for the methodology in this study. **RESULTS:** A total of 564 nursing students were ultimately included in the study. The average overall transition shock score was 46 (41, 52). Attitude toward the nursing profession had an independent influence on nursing students' transition shock ( $p < 0.05$ ). Additionally, the number of night shifts, choosing nursing as the first choice, being class leaders, education level, future plans, school scale, and monthly household income contributed

to different dimensions of transition shock ( $p < 0.05$ ). CONCLUSION AND IMPLICATIONS FOR NURSING POLICY: Nursing students experience moderate transition shock, with attitude towards nursing as a key influencing factor. Clinical managers should implement targeted measures to better support nursing students improve their attitudes.

[Lien vers l'article](#)

### **Determinants of good or excellent work ability in a branch of the dutch military.**

Stegerhoek PM, van der Zande J, H IJ, Verhagen E, Motazed E, Bolling C, et al. *Int Arch Occup Environ Health*. 2025 Feb 25.

**PURPOSE:** The Royal Netherlands Marechaussee, a branch of the Dutch Military, is characterised by a diverse range of mentally and physically demanding occupational tasks. The employability of the personnel depends on the balance between occupational demands and personal resources, which can be measured through the work ability score. Therefore, this study investigates personal and work-related determinants of work ability in a branch of the Dutch Military. **METHODS:** We gathered cross-sectional data through a survey distributed among all operational Royal Netherlands Marechaussee personnel ( $n = 7,658$ ). We used binomial logistic regression analysis to estimate the relationship between determinants in four domains (i.e., personal, workload, work characteristics, and work experience) and the dichotomised work ability scores (poor to moderate vs. good to excellent). **RESULTS:** The survey had a 20% response rate with 1538 respondents. Our study included a slightly higher percentage of reservists and civilians than the Royal Netherlands Marechaussee's workforce. Forty per cent of participants rated their work ability as poor or moderate. Good or excellent work ability was related to older age ( $> 50$  years compared to  $< 29$  years), lower physical workload, no shift work, less fatigue, more autonomy, task clarity, and social support. **CONCLUSIONS:** We found that 40% of survey respondents rated their work ability as low or moderate. In the future, factors like shift work, autonomy, task clarity, and social support may be used to improve work ability in this population.

[Lien vers l'article](#)

### **Current Status of Hospitalist Practice and Factors Influencing Job Satisfaction in Korea.**

Song SY, Han HY, Park SY, Kim J, Park KM, Kyong T. *J Gen Intern Med*. 2025 Feb;40(2):302-8.

**BACKGROUND:** Although the roles and responsibilities of hospitalists have grown considerably in recent years, research on the current job status and satisfaction levels of Korean hospitalists is lacking. **OBJECTIVE:** We investigate the present state of Korean hospitalists and the factors influencing their job satisfaction 6 years after the pilot program's launch. **DESIGN:** This cross-sectional analysis was based on an online survey conducted from January 30 to February 18, 2023. **PARTICIPANTS:** Korean hospitalists ( $N = 303$ ) **MAIN MEASURES:** The survey encompassed participant demographics, hospital information, education, clinical practice, research involvement, and job satisfaction. We employed multiple logistic regression analyses to identify determinants of satisfaction as a hospitalist. **KEY RESULTS:** The analysis was based on 79 hospitalists' responses (response rate 26%). Respondents had a median age of 39 years; approximately half were male internal medicine specialists, possessing over 3 years of hospitalist experience. Most respondents were interested in clinical work (94.4%), with only 21.5% interested in research and evidence-based medicine. Over two-thirds indicated that non-clinical duties occupied less than 20% of their time. Overall, job satisfaction among hospitalists averaged 51.9%. Notably, the availability of a research mentor was significantly associated with job satisfaction ( $P = .011$ ). While hospitalists with more than 3 years of experience, more hospitalists per facility, and autonomy were associated with increased job satisfaction, these associations were not statistically significant. Furthermore, there was no association between night shift work, work type, or work hours and job satisfaction. **CONCLUSIONS:** Although Korean hospitalists primarily focus on clinical practice, our study underscores the positive impact of mentorship from research mentors on job satisfaction,



supported by comprehensive univariate and multivariate analyses. These findings signal a progressive transformation in the role of Korean hospitalists, as they increasingly engage in research alongside patient care.

[Lien vers l'article](#)

### **A qualitative exploration of stressors in anaesthesia training in the UK and mechanisms to improve resident wellbeing.**

Gale T, Winter S, Daykin H, Tredinick-Rowe J, Withers L, Bryce M. *Anaesthesia*. 2025 Feb 25.

**INTRODUCTION:** High levels of stress and burnout have been identified among resident anaesthetists in UK training programmes. Factors involving clinical roles, workplace culture and training are known stressors, but in-depth research investigating how to improve wellbeing is limited. **METHODS:** We used a qualitative design in two phases with participants from across the UK. Phase 1 involved semi-structured interviews of resident anaesthetists in the 2nd-5th years of training, and educational stakeholders. Phase 2 involved additional participants in two focus groups, one each for residents and stakeholders. Interviews and focus groups were conducted online, audio-recorded and transcribed for thematic analysis using a framework approach. **RESULTS:** We interviewed 52 participants in phase 1, comprising resident anaesthetists from England, Wales and Scotland and key educational stakeholders. A further 11 resident anaesthetists and stakeholders participated in the phase 2 focus groups. We identified four overarching themes contributing to stress: clinical work; non-clinical work; structure of training; and workplace culture. We also identified supportive features at individual, local, regional and national levels. Stress and burnout were commonplace, particularly during demanding periods of training. Balancing non-clinical commitments alongside busy workloads was difficult. Clinically, intensive care medicine and obstetrics generated the most stress. Frequent rotations and long commutes increased stress, impacting on working and family relationships. Curriculum changes, examinations and competition for higher training posts caused stress and poor morale. Proposed mechanisms to improve wellbeing include: peer-to-peer support; request-based rotas; adoption of 'lead employers'; decreasing rotation frequency and commuting distances; access to less than full-time working and professional support; and adapting the structure of training to improve the stability of the resident anaesthetist workforce. **DISCUSSION:** Attention to the factors identified as contributing to stress could improve resident anaesthetists' wellbeing through changes to policy and practice at local, regional and national levels, for which we make research-informed recommendations.

[Lien vers l'article](#)

### **A mixed methods study of backup behavior among interprofessional ICU teams.**

Costa DK, Lee KA, Wright NC, Boltey EM, Ratliff HC, Marriott DJ, et al. *Heart Lung*. 2025 Feb 1;71:1-6.

**BACKGROUND:** Backup behavior-when clinicians help each other via verbal assistance or task completion in their roles-is essential for effective teamwork in the intensive care unit (ICU) but is not well understood. Exploring how interprofessional team members provide backup may guide future interventions. **OBJECTIVE:** To examine who, how often, why, and under what circumstances ICU clinicians provide backup in mechanical ventilation care. **METHODS:** Using a convergence, triangulation mixed methods design in 2 medical ICUs (2017-2019), we collected qualitative data (observation, shadowing, interviews) to understand how ICU teams provide backup; and patient-shift level surveys of ICU nurses, physicians, and respiratory therapists, to identify whom clinicians contacted for help that shift. We analyzed and compared these data to gain insight into the frequency, and circumstances surrounding ICU clinicians' requests for and receipt of backup when providing mechanical ventilation care. **RESULTS:** Backup behavior was common. Interprofessional backup (e.g. nurse to respiratory therapist) related to specific patient care tasks. Intraprofessional backup (e.g. nurse to nurse) involved team members 'checking in' to assist their colleague. Most (57%) survey respondents reported at least

one interprofessional contact on day and night shifts, and approximately 25% reported at least one intraprofessional backup contact. We identified distinct backup behavior patterns on day and night shifts. **CONCLUSIONS:** While backup behavior was common, interprofessional backup focused on care aligning with professional roles whereas intraprofessional backup entailed checking-in with team members. Examining how to enhance interprofessional backup through trainings or interventions may improve how teams work and patient care.

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### **Determinants of brain drain among physicians in Turkey: Findings from a national exploratory study.**

Bener A, Ventriglio A, Almas F, Bhugra D. *Int J Soc Psychiatry*. 2025 Feb;71(1):179-87.

**BACKGROUND:** The shortage of physicians in Turkey is a highly critical emergency. In fact, physicians' migration to developing or high-income countries, defined as brain drain, threatens the sustainability of the national healthcare system. **AIMS:** This study explored the driving factors associated with Turkish Physicians' brain drain, including high-economic inflation, social-politics, poor-living, equity, violence, and the desire to practice medical activity abroad. **METHODS:** A cross-sectional survey of 1,861 Turkish physicians aged 25 to 65 years old was conducted employing the Brain Drain questionnaire, the Depression Anxiety Stress Scale (DASS-21), the Patient Health Questionnaire 9 (PHQ-9), and the Fatigue Assessment Scale (FAS). **RESULTS:** Significant differences were observed among physicians staying in Turkey versus considering migration to Western countries, regarding their age, gender, marital status, educational level, occupational status, work years, hospital night shifts, income, and cigarette/nargileh smoking habits (all  $p \leq .018$ ). The main reasons for brain drain included transport problems, harassment, low salary, malpractice, bad environment, job insecurity, workload, burnout, treating difficult patients, inadequate postgraduate systems, peer-pressure, health safety concerns, and favoritism in the workplace, as well as stress and depression caused by work overload. In fact, depression, anxiety, stress, fatigue, and burnout varied significantly among the different groups of physicians (all  $p \leq .013$ ). Additionally, key predictors of brain drain were better job opportunities, poor hospital management (in Turkey), job-related stress, dealing with difficult patients, research deficiencies, workload, burnout, transportation issues, short consultation time, low salary, and fatigue. Among the general factors contributing to the brain drain in the Turkish Health System, we identified significant issues related to research deficiencies, compulsory working duties, poor quality of postgraduate, inadequate medical-schools, poor hospital management, and shortage of consultants. **CONCLUSION:** Physicians' migration is a major global public health concern, leading to substantial risks for healthcare services, especially in Turkey. Many physicians decide to migrate to work in Western countries.

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### **Occupational Factors Influencing Turnover Intention in Working Women With Lower Urinary Tract Symptoms.**

Jung JH, Lee YM, Lee J, Kim HR, Cho HA, Kang MY. *J Occup Environ Med*. 2025 Feb 1;67(2):e96-e102.

**OBJECTIVE:** This study aimed to identify the occupational factors that influence turnover intention among working women with lower urinary tract symptoms (LUTS). **METHODS:** This cross-sectional study targeted 410 working women with LUTS from a 2022 survey. Occupational characteristics, including working hours, shift work, bathroom accessibility, sitting time, musculoskeletal strain, job stress, and emotional labor, were assessed through a structured self-reported questionnaire using validated tools. Multiple logistic regression was applied to analyze the association of these factors with turnover intention. **RESULTS:** Women who worked >52 hours per week had an odds ratio of 2.02 for turnover intention compared to those who worked fewer hours. Higher job stress and emotional labor

scores also were associated with increased turnover intention. **CONCLUSIONS:** Women with LUTS have higher turnover intention due to vulnerability to long hours, job stress, and emotional labor.

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### **Levels and related factors of occupational stress among nurses: hospital-based evidence from China, 2023.**

Zhong X, Zeng Y, Peng L, Li X, Jia Y, Pan C, et al. *Front Psychol.* 2024;15:1471640.

**BACKGROUND:** China's birth rate continues to decline, reaching only 6.39% in 2023. In light of this trend, hospitals may need to reassess their allocation of resources, including funding, staffing, and facilities. Nurses may face job insecurity and uncertainty regarding their roles, which could prompt some to consider transitioning to different specialties. This study aimed to investigate the levels of occupational stress among nurses in the context of low fertility in China in 2023 and to identify the factors contributing to this stress. In addition, the study sought to explore the relationship between family dysfunction, low fertility rates, and occupational stress levels. **METHODS:** This descriptive cross-sectional study involved 270 nurses working in hospitals, who were recruited between December 2023 and January 2024 through a Chinese free web-based platform (Sojump) to complete online questionnaires. In addition to demographic information, the Nursing Job Stressors Scale (NJSS) and the Family APGAR Index were utilized for data collection. The data were analyzed using descriptive and inferential statistics, including correlation and multiple linear regression analysis. For continuous variables, the mean, standard deviation (SD), median, and interquartile range were reported, while counts and percentages were used for categorical variables. The independent t-test and one-way analysis of variance were employed for univariate analysis. Multiple linear regression was utilized for multivariate analysis. A p-value of less than 0.05 was considered statistically significant. **RESULTS:** The participants' average scores for the NJSS and Family APGAR Index were  $1.76 \pm 0.58$  and  $6.35 \pm 3.30$  points, respectively. In addition, workload and time pressure were rated highest among the sub-scales of the NJSS. The top five job stressors for nurses were Q3 (Wages and other benefits are low), Q1 (The social status of nursing is too low), Q5 (Frequent shift work), Q12 (Too much useless paperwork), and Q16 (Fear of mistakes and accidents at work). The score of the Family APGAR Index demonstrated a negative correlation with occupational stress ( $r = -0.19$ ,  $p < 0.001$ ). The results of the multiple linear regression analysis showed that a high level of worry about losing one's job ( $SE = 0.044$ ,  $\beta = 0.152$ ,  $t = 2.567$ ,  $p = 0.011$ ) and poorer family APGAR scores ( $SE = 0.035$ ,  $\beta = -0.202$ ,  $t = -3.406$ ,  $p < 0.001$ ) were associated with higher NJSS scores. **CONCLUSION:** The nurses reported experiencing a moderate level of occupational stress in the context of low fertility in China. The key predictors of occupational stress among the nurses included concerns about job security and the Family APGAR classification. Implementing fair compensation and providing more effective family-oriented support programs are essential for reducing occupational stress among nurses.

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### **Occupational stress and its correlates among healthcare workers of a tertiary level teaching hospital in Kathmandu, Nepal, during COVID-19 pandemic: a cross-sectional study.**

Thapa S, Pradhan PMS. *BMJ Public Health.* 2024 Jun;2(1):e000126.

**BACKGROUND:** Healthcare workers experience high job stress, contributing to negative health outcomes and poor patient care. This study aims to assess occupational stress and its associated factors among healthcare workers at a tertiary hospital during COVID-19 pandemic in Kathmandu, Nepal. **METHODS:** A cross-sectional quantitative study was conducted among doctors and nurses in a tertiary hospital. A self-administered questionnaire was used to collect data from 368 participants. Bivariate and multiple linear regression analysis identified the predictors associated with occupational stress. **RESULTS:** The mean occupational stress index score was  $149.56 \pm 22.01$ . It was significantly

higher among female participants (151.59±19.12 vs 144.2±27.6, p=0.004), married individuals (152.06±19.79 vs 147.01±23.86, p=0.028), those with over 1 year of employment duration (152.17±21.28 vs 145.45±22.60, p=0.004), health workers attending more than four night shift a month (152.30±19.44 vs 135.52±28.45, p<0.001), those working in rotating shift (151.68±21.12 vs 142.17±23.57, p=0.006), those working 48 hours or more per week (152.39±19.28 vs 145.97±24.66, p=0.005), those lacking support from other staff (157.81±18.70 vs 148.17±22.25, p=0.003) and those who consumed alcohol (152.14±21.25 vs 147.18±22.49, p=0.031). Multiple linear regression revealed associations with employment duration over 1 year ( $\beta=0.174$ , p=0.001), rotating shift ( $\beta=-0.106$ , p=0.006), night shifts ( $\beta=0.251$ , p<0.001), working hours of 48 hours or more per week ( $\beta=0.175$ , p=0.001), lack of support from other staff ( $\beta=0.130$ , p=0.010) and low-wealth quintile ( $\beta=0.161$ , p=0.006). CONCLUSION: Occupational stress is associated with employment duration, night shift, rotating shift, working hours, support mechanisms and socioeconomic profile among healthcare workers. There is a crucial need to establish evidence-based actions to prevent occupational stress and promote the overall health of healthcare workers.

[Lien vers l'article](#)

### Santé psychique

#### **Association of workforce participation with depression among US older adults: results from NHANES 2005-2018.**

Sun Z, Wang Y, Chen X, Qian D. *BMC Geriatr.* 2025 Feb 4;25(1):77.

**BACKGROUND:** The challenges of global aging would boost more workforce participation of older adults, and depression rate was increasing among older adults. This study aimed to explore the associations of workforce participation with depression among US older adults. **METHODS:** This cross-sectional study used data from the National Health and Nutrition Examination Survey (NHANES) 2005-2018. Depression was measured with Patient Health Questionnaire-9 items (PHQ-9). Workforce participation was measured with work status, work types, shift work, and hours worked per week. Multivariate generalised linear and logistic regression models, also with restricted cubic spline (RCS) were performed to examine linear or non-linear associations between workforce participation and depression. Analyses of subgroup and sensitivity were conducted: using data from non-multiple imputation, participants aged over 65, and all non-excluded participants aged 60 or above to execute repeated analysis; recruiting propensity score matching (PSM) method that focused on selected SDoH, lifestyle, and health status-related factors to strengthen essential comparability between workers and non-workers; employing two-stage least squares (2SLS) model and setting retirement age (over 65 years or not) as an instrumental variable (IV) to solve the potential reverse causation between work status and depression. **RESULTS:** A total of 10,312 participants aged 60 or above were enrolled with a prevalence of depression of 6.4%. There was a significantly negative association of PHQ-9 score with working (Exp [ $\beta$ ] = 0.68; 95%CI: 0.53-0.87), working as private employee (Exp [ $\beta$ ] = 0.67; 95%CI: 0.50-0.89), or working on regular daytime (Exp [ $\beta$ ] = 0.65; 95%CI: 0.52-0.82). Especially, regular daytime working reduced depression risk by 52% compared with those who not working (OR = 0.48; 95%CI: 0.27-0.87). A significant decreased PHQ-9 score and depression risk as hours worked per week increased until reaching 34.86 and 25.35 in the RCS for generalised linear and logistic regression models, respectively. These effects were consistent across the analyses of subgroup and sensitivity. **CONCLUSIONS:** Regular daytime working was positively related to decreased depression risk among US older adults, and the suggested optimal working hours were 25 to 35 per week. Policymakers should appreciate the potential value of moderate workforce participation to mental health among older adults.

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**Evaluation of the prevalence and risk factors of burnout syndrome among healthcare workers: A cross-sectional study.**

Mohamed NA, Mohamed YA, Haji Mohamud RY, Gabow AA. *World J Psychiatry*. 2025 Feb 19;15(2):98496.

**BACKGROUND:** Burnout syndrome is a significant issue among healthcare professionals worldwide, marked by depersonalization, emotional exhaustion, and a reduced sense of personal achievement. This psychological and physical burden profoundly affects healthcare professionals' quality of care and overall well-being. In Somalia, where the healthcare system faces numerous challenges, the escalating demand for medical services and inadequate resources, coupled with overwhelming workloads, long hours, and high-stress levels, make healthcare providers particularly vulnerable to burnout syndrome. This, in turn, affects both the mental health of healthcare personnel and the quality of care they provide. **AIM:** To examine the prevalence and determinants of burnout syndrome among healthcare practitioners in Mogadishu, Somalia. **METHODS:** This cross-sectional prospective study was performed among 246 healthcare providers employed at a tertiary care hospital in Mogadishu, Somalia, who were recruited via random sampling. Data were collected using questionnaires that covered sociodemographic, psychological, work-related characteristics, and burnout syndrome. Bivariate and multivariate logistic regression analyses were performed to identify the variables that correlated with burnout syndrome. The results were presented using adjusted odds ratios (AORs), 95% CIs, and P values, with a cutoff of 0.05 for identifying significant associations. **RESULTS:** Among the participants, 24% (95%CI: 18.8%-29.8%) exhibited symptoms of burnout syndrome. Factors associated with burnout included female gender (AOR = 6.60; 95%CI: 2.29-19.04), being married (AOR = 3.07; 95%CI: 1.14-8.28), being divorced or widowed (AOR = 5.84; 95%CI: 1.35-25.35), working more than 7 night shifts (AOR = 3.19; 95%CI: 1.30-7.82), having less than 5 years of job experience (AOR = 5.28; 95%CI: 1.29-21.65), experiencing poor sleep quality (AOR = 5.29; 95%CI: 1.88-14.89), and exhibiting depressive (AOR = 4.46; 95%CI: 1.59-12.53) and anxiety symptoms (AOR = 7.34; 95%CI: 2.49-21.60). **CONCLUSION:** This study found that nearly one in four healthcare professionals suffers from burnout syndrome. Improving sleep quality, monitoring, and providing mental health support could enhance their well-being and patient care.

[Lien vers l'article](#)

**Moral resilience protects nurses from moral distress and moral injury.**

Galanis P, Iliopoulou K, Katsiroumpa A, Moisoglou I, Igoumenidis M. *Nurs Ethics*. 2025 Feb 28:9697330251324298.

**Background:** The relationship between moral resilience, moral distress, and moral injury among nurses during the COVID-19 pandemic has been widely investigated; however, the literature in the post-COVID-19 era is scarce. **Research aim:** To examine the impact of moral resilience on moral distress and moral injury among nurses after the COVID-19 pandemic. **Research design:** Cross-sectional study. **Participants and research context:** We obtained a convenience sample of 1118 nurses in Greece. We collected demographic data (gender, age) and work-related data (understaffed wards, shift work, clinical experience). We measured moral resilience with the revised "Rushton Moral Resilience Scale", moral distress with the "Moral Distress Thermometer", and moral injury with the "Moral Injury Symptom Scale-Healthcare Professionals" version. We adjusted all multivariable models for demographic variables. **Ethical considerations:** The Ethics Committee of the Faculty of Nursing, National and Kapodistrian University of Athens approved our study protocol (approval number; 474, approved: November 2023). Our study followed the Declaration of Helsinki. **Findings/results:** Multivariable linear regression analysis showed that moral resilience reduced moral distress and moral injury. In particular, we found that increased response to moral adversity was associated with decreased moral distress (adjusted coefficient beta = -1.81, 95% confidence interval [CI] = -2.07 to -

1.54). Moreover, we found that increased response to moral adversity (adjusted coefficient beta = -8.24, 95% CI = -9.37 to -7.10) and increased moral efficacy (adjusted coefficient beta = -3.24, 95% CI = -5.03 to -1.45) were associated with reduced moral injury. Conclusions: Moral resilience can reduce the level of moral distress and moral injury among nurses. However, the persistence of moderate moral resilience among Greek nurses does not guarantee its sustainability. To ensure that this resilience is maintained and potentially enhanced, it is imperative for nurse leaders and policymakers to strategically design interventions to address issues at the organizational, team, and individual levels.

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### **Burnout crisis in Chinese radiology: will artificial intelligence help?**

Fang X, Ma C, Liu X, Deng X, Liao J, Zhang T. *Eur Radiol*. 2025 Mar;35(3):1215-24.

**OBJECTIVES:** To assess the correlation between the use of artificial intelligence (AI) software and burnout in the radiology departments of hospitals in China. **METHODS:** This study employed a cross-sectional research design. From February to July 2024, an online survey was conducted among radiologists and technicians at 68 public hospitals in China. The survey utilized general information questionnaires, the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) scale, and a custom-designed AI usage questionnaire. This study analyzed the correlation between AI software usage and occupational burnout, and general information was included as a control variable in a multiple linear regression analysis. **RESULTS:** The analysis of survey data from 522 radiology staff revealed that 389 (74.5%) had used AI and that 252 (48.3%) had used it for more than 12 months. Only 133 (25.5%) had not yet adopted AI. Among the respondents, radiologists had a higher AI usage rate (82.0%) than technicians (only 59.9%). Furthermore, 344 (65.9%) of the respondents exhibited signs of burnout. The duration of AI software usage was significantly negatively correlated with overall burnout, yielding a Pearson correlation coefficient of -0.112 ( $p < 0.05$ ). Multiple stepwise regression analysis revealed that salary satisfaction, night shifts, duration of AI usage, weekly working hours, having children, and professional rank were the main factors influencing occupational burnout (all  $p < 0.05$ ). **CONCLUSION:** AI has the potential to significantly help mitigate occupational burnout among radiology staff. This study reveals the key role that AI plays in assisting radiology staff in their work. **KEY POINTS:** Questions Although we are aware that radiology staff burnout is intensifying, there is no quantitative research assessing whether artificial intelligence software can mitigate this occupational burnout. Findings The longer staff use deep learning-based artificial intelligence imaging software, the less severe their occupational burnout tends to be. This result is particularly evident among radiologists. Clinical relevance In China, radiologists and technicians experience high burnout rates. Even if there is an artificial intelligence usage controversy, encouraging the use of artificial intelligence software in radiology helps prevent and alleviate this occupational burnout.

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### **Health and wellbeing of second-degree students pursuing oral and maxillofacial surgery.**

Rehman U, Sarwar MS, Kungwengwe G, Choudhury RY, Whiteman E, Brennan PA. *Br J Oral Maxillofac Surg*. 2024 Sep 6.

Second-degree students pursuing oral and maxillofacial surgery (OMFS) may be at particular risk of burnout when striving to find a balance between a full-time degree, locum work, and developing portfolios for specialist training applications. The current study aimed to explore self-reported burnout and identify risk factors for burnout amongst second-degree students considering a career in OMFS. An online survey was distributed via social media to second-degree students across the United Kingdom and 122 responses were received. A majority of students felt they had suffered from burnout during their second degree ( $n = 74$ , 60.7%). Burnout was more likely to be reported by students enrolled on a four-year dental degree ( $p = 0.016$ , OR 6.291, 95% CI: 1.402 to 28.235), by female

students ( $p = 0.006$ , OR 5.791, 95% CI: 1.659 to 20.219), and those aged 28-30 ( $p = 0.032$ , OR 5.818, 95% CI: 1.165 to 29.054) or between 34 and 36 years ( $p = 0.008$ , OR 14.882, 95% CI 1.998 to 110.826). Students doing zero night shifts per month were significantly less likely to suffer from burnout compared with those doing more than six night shifts per month ( $p = 0.016$ , OR: 0.034, 95% CI: 0.002 to 0.537) or more than six day shifts per month ( $p = 0.028$ , OR: 15.272, 95% CI: 1.335 to 174.732). It may be possible to reduce the risk of burnout amongst second-degree students and enhance their wellbeing by improving financial and clinical development incentives as part of regular locum work opportunities, by providing access to tailored OMFS mentorship, and by streamlining training.

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### Troubles cognitifs et de la vigilance

#### **Acute night shift work is associated with increased blood pressure and reduced sleep duration in healthy adults.**

Seward SL, Kishman EE, Rynders CA, Broussard JL. *Physiol Rep*. 2025 Feb;13(3):e70231.

Shift workers have a 40% higher risk for cardiovascular disease (CVD) compared to people who work day shifts. However, the acute impact of shift work on CVD risk factors in free-living settings remains unclear. We therefore investigated the impact of acute night shift work on factors related to cardiovascular health including blood pressure (BP) and sleep duration. Twenty-four rotating shift workers (19F,  $23 \pm 4$  y, BMI:  $23 \pm 3$  kg/m<sup>2</sup>); mean  $\pm$  SD) participated in a quasi-randomized crossover study. Assessments were conducted over the course of 1 day shift and one night shift in a free-living setting. BP was measured every 30 min by an ambulatory monitor. Sleep and wake times were recorded. Mixed effects models were conducted to examine changes in variables between conditions. Acute night shift work was associated with significantly higher 24 h systolic ( $107 \pm 1$  vs.  $104 \pm 1$  mmHg;  $p < 0.0001$ ) and diastolic ( $67 \pm 1$  vs.  $64 \pm 1$  mmHg;  $p < 0.0001$ ) BP, as well as blunted dipping patterns in systolic BP ( $8 \pm 1$  vs.  $12 \pm 1\%$ ;  $p = 0.032$ ), as compared to day shift work. Sleep duration was significantly shorter during the night shift as compared to the day shift ( $4$  h  $04 \pm 19$  min vs.  $8$  h  $22 \pm 18$  min;  $p < 0.0001$ ). As little as one night of shift work in a free-living setting is sufficient to induce multiple CVD risk factors including increased BP and reduced sleep duration in healthy adults. It is critical to identify strategies to prevent or attenuate the negative impact of shift work on CVD risk in a large portion of the working population.

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#### **Trauma history and persistent poor objective and subjective sleep quality among midlife women.**

Jakubowski K, Riedmann CA, Chang Y, Koenen KC, Maki PM, Thurston RC. *Menopause*. 2025 Mar 1;32(3):207-16.

**OBJECTIVES:** Whereas some work links trauma exposure to poor subjective sleep quality, studies largely rely upon limited trauma measures and self-reported sleep at one time point. It is unknown whether trauma is related to persistent poor sleep, whether associations differ based on childhood versus adulthood trauma, and whether trauma exposure is related to poorer objectively assessed sleep. We tested whether childhood or adult trauma associated with persistent poor objectively and subjectively measured sleep at two time points in midlife women. **METHODS:** One hundred sixty-seven women aged 40-60 at baseline were assessed twice 5 years apart. At baseline, women reported childhood trauma (Child Trauma Questionnaire), adult trauma (Brief Trauma Questionnaire), demographics, depressive symptoms, apnea symptoms, and medical history, and provided physical measures. At both visits, women completed 3 days of actigraphy (total sleep time [TST], wake after sleep onset [WASO]) and reported sleep quality (Pittsburgh Sleep Quality Index). Relations of

childhood and adult trauma exposure, respectively, with persistent poor sleep at both baseline and follow-up visits (TST [ $<6$  hours], WASO [ $>30$  minutes], Pittsburgh Sleep Quality Index [ $>5$ ]) were assessed in logistic regression models, adjusted for age, race/ethnicity, education, body mass index, sleep medications, nightshift work, apnea, depressive symptoms, vasomotor symptoms, and alcohol use. RESULTS: Childhood trauma was related to persistent high WASO (odds ratio [95% confidence interval] = 2.16 [1.04-4.50],  $P = 0.039$ , multivariable). Adult trauma was related to persistent poor sleep quality (odds ratio [95% confidence interval] = 2.29 [1.07-4.93],  $P = 0.034$ , multivariable). Trauma was unrelated to persistent short TST. CONCLUSIONS: Childhood and adult trauma, respectively, were related to persistent poor objective sleep continuity and subjective sleep quality in midlife women, independent of risk factors.

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### **Sleep, Circadian Rhythms, and Lung Cancer.**

Cooper D, Lopez I, Kendzerska T. *Semin Respir Crit Care Med.* 2025 Feb 3.

Lung cancer is the leading cause of cancer-related mortality worldwide, with the prevalence of the disease continually rising. Therefore, identifying disease-modifying risk factors is critical, with increasing recognition of the impact of sleep quality/sleep disorders. This narrative review summarizes the evidence on the role of five domains of sleep on lung cancer incidence and progression: (i) sleep quality/duration, (ii) sleep disordered breathing, (iii) circadian rhythm disturbances, (iv) sleep-related movement disorders and (v) personal, environmental and social factors that modulate each of these associations. Epidemiological evidence supports reduced sleep duration, increased sleep duration, poor sleep quality, insomnia, obstructive sleep apnea, evening chronotype, peripheral limb movements in sleep, and less robustly for night shift work and restless leg syndrome to be associated with increased risk of lung cancer development, with potential impacts on cancer survival outcomes. Proposed mechanisms underlying the biological plausibility of these epidemiological associations are also explored, with common theories relating to immune dysregulation, metabolic alterations, reductions in melatonin, sympathetic overactivation, increased reactive oxygen species, production of protumorigenic exosomes and inflammation. We also summarized potential treatments addressing impaired sleep quality/sleep disorders and their ability to attenuate the risk of lung cancer and cancer survival. While evidence on reversibility is inconsistent, there are trends toward positive outcomes. Future research should focus on clinical trials to confirm cause and effect relationships, large epidemiologic studies for incidence/prognosis, clarification on the relative efficacy of treatment modalities, and more in vivo animal models to establish the molecular mechanisms underlying these relationships.

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### **Novel perspective of 'poor sleep' in public health: a narrative review.**

Leger D, Ferini-Strambi L, Han F, Poyares D, Uchiyama M, Zee PC. *BMJ Public Health.* 2024 Dec;2(2):e000952.

A high percentage of people worldwide complain of sleep disturbances; however, the vast majority do not meet the diagnostic criteria for insomnia or other classic sleep disorders. Therefore, the 'classical' concept of poor sleep remains undetected, and patients stay ignored and unidentified. Also, poor sleep has been strongly associated with increased daytime function impairment, morbidity and mortality and is considered a risk factor for developing mental disorders. Poor sleep is the individual experience of insufficient restorative sleep and/or sleep satisfaction in adults who do not fulfil the criteria for sleep disorders. This article provides a review on the impact of poor sleep on a healthy life within the multidimensional concept of sleep health, including the COVID-19-affected period. We propose a wide definition of poor sleep and the key characteristics of poor sleepers and tools for (self) detection. We



discuss sleep assessment methods that combine the ability to capture the subjective perception of the sleep experience and measure objective sleep parameters. We then report selected strategies to improve sleep health, focusing on healthy sleep habits, cognitive behavioural therapy, diet, exercise, food supplements and other sleep aids. Considering the current megalopolis way of life, young people are following a 24/24 hours 7 days/week rhythm of life, with increased exposure to noise and light pollution, night-shift work, higher commute time, increased global temperature and overuse of smartphones and screens. Therefore, there is an urgent need for increasing awareness of poor sleep and stimulating educational efforts targeted at poor sleepers and primary care specialists.

[Lien vers l'article](#)

## Chronobiologie

### Animal

#### **Timing of exercise differentially impacts adipose tissue gain in male adolescent rats.**

Kutsenko Y, Iñiguez LP, Barreda A, Pardo-Marín L, Toval A, Garrigos D, et al. *Mol Metab.* 2025 Mar;93:102100.

**OBJECTIVE:** Circadian rhythms of metabolic, hormonal, and behavioral fluctuations and their alterations can impact health. An important gap in knowledge in the field is whether the time of the day of exercise and the age of onset of exercise exert distinct effects at the level of whole-body adipose tissue and body composition. The goal of the present study was to determine how exercise at different times of the day during adolescence impacts the adipose tissue transcriptome and content in a rodent model. **METHODS:** Rats were subjected to one of four conditions during their adolescence: early active phase control or exercise (EAC or EAE; ZT13), and late active phase control or exercise (LAC or LAE; ZT23). The effects of exercise timing were assessed at the level of subcutaneous and visceral adipose tissue transcriptome, body composition, hypothalamic expression of orexigenic and anorexigenic genes, blood serum markers and 24-hour core body temperature patterns. **RESULTS:** We found that late active phase exercise (ZT23) greatly upregulated pathways of lipid synthesis, glycolysis and NADH shuttles in LAE rats, compared to LAC or EAE. Conversely, LAE rats showed notably lower content of adipose tissue. In addition, LAE rats showed signs of impaired FGF21-adiponectin axis compared to other groups. **CONCLUSIONS:** Finally, LAE rats showed higher post-exercise core body temperature compared to other groups. Our results thus indicate that our exercise protocol induced an unusual effect characterized by enhanced lipid synthesis but reduced adipose tissue content in late active phase but not early active phase exercise during adolescence.

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#### **Circadian Disruption and the Risk of Developing Obesity.**

Duez H, Staels B. *Curr Obes Rep.* 2025 Feb 13;14(1):20.

**PURPOSE OF THE REVIEW:** This review summarizes recent evidence for a role of the clock in adipose tissue physiology and the impact of circadian desynchrony on the development of obesity. **RECENT FINDINGS:** Circadian disruptions due to shift work, late time eating and nighttime light exposure are associated with obesity and its metabolic and cardiovascular consequences. Studies in mice harboring tissue-specific gain/loss of function mutations in clock genes revealed that the circadian clock acts on multiple pathways to control adipogenesis, lipogenesis/lipolysis and thermogenesis. Time-restricted eating (TRE), aligning feeding with the active period to restore clock function, represents a promising strategy to curb obesity. While TRE has shown clear benefits, especially in participants at higher cardiometabolic risk, current studies are limited in size and duration. Larger, well-controlled studies are warranted to conclusively assess the effects of TRE in relation to the metabolic status and gender. Field studies in shift-workers, comparing permanent night shift versus rotating shifts, are also necessary to identify the optimal time window for TRE.

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#### **Cyclin-dependent kinase 5 (Cdk5) activity is modulated by light and gates rapid phase shifts of the circadian clock.**

Brenna A, Borsa M, Saro G, Ripperger JA, Glauser DA, Yang Z, et al. *Elife.* 2025 Feb 12;13.

The circadian clock enables organisms to synchronize biochemical and physiological processes over a 24 hr period. Natural changes in lighting conditions, as well as artificial disruptions like jet lag or shift work, can advance or delay the clock phase to align physiology with the environment. Within the

suprachiasmatic nucleus (SCN) of the hypothalamus, circadian timekeeping and resetting rely on both membrane depolarization and intracellular second-messenger signaling. Voltage-gated calcium channels (VGCCs) facilitate calcium influx in both processes, activating intracellular signaling pathways that trigger Period (Per) gene expression. However, the precise mechanism by which these processes are concertedly gated remains unknown. Our study in mice demonstrates that cyclin-dependent kinase 5 (Cdk5) activity is modulated by light and regulates phase shifts of the circadian clock. We observed that knocking down Cdk5 in the SCN of mice affects phase delays but not phase advances. This is linked to uncontrolled calcium influx into SCN neurons and an unregulated protein kinase A (PKA)-calcium/calmodulin-dependent kinase (CaMK)-cAMP response element-binding protein (CREB) signaling pathway. Consequently, genes such as Per1 are not induced by light in the SCN of Cdk5 knock-down mice. Our experiments identified Cdk5 as a crucial light-modulated kinase that influences rapid clock phase adaptation. This finding elucidates how light responsiveness and clock phase coordination adapt activity onset to seasonal changes, jet lag, and shift work.

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### Homme

#### **Melatonin-Loaded Hydrogel Modulates Circadian Rhythms and Alleviates Oxidative Stress and Inflammation to Promote Wound Healing.**

Wu S, Yang S, Ou L, Zhang H, Wang L, Feng B, et al. *ACS Appl Bio Mater.* 2025 Feb 17;8(2):1607-20.

Circadian rhythm disruption, commonly caused by factors such as jet lag and shift work, is increasingly recognized as a critical factor impairing wound healing. Although melatonin is known to regulate circadian rhythms and has potential in wound repair, its clinical application is limited by low bioavailability. To address these challenges, we developed an alginate-based dual-network hydrogel as a delivery system for melatonin, ensuring its stable and sustained release at the wound site. This approach enhances the efficacy of melatonin in modulating the wound healing process. We investigated the effects of circadian rhythm disruption on the wound microenvironment under the influence of the melatonin-loaded hydrogel with a focus on its biocompatibility, hemostatic properties, and antioxidant response functions. Additionally, we elucidated the mechanisms by which the melatonin-loaded hydrogel system promotes wound healing. Our findings provide insights into the relationship between circadian rhythm disruption and wound healing, offering a promising strategy for the management of chronic wounds associated with circadian rhythm disorders.

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#### **Circadian disruption by simulated shift work aggravates periodontitis via orchestrating BMAL1 and GSDMD-mediated pyroptosis.**

Wang Y, Li R, Ye Q, Fei D, Zhang X, Huang J, et al. *Int J Oral Sci.* 2025 Feb 25;17(1):14.

Approximately 20% to 30% of the global workforce is engaged in shift work. As a significant cause of circadian disruption, shift work is closely associated with an increased risk for periodontitis. Nevertheless, how shift work-related circadian disruption functions in periodontitis remains unknown. Herein, we employed a simulated shift work model constructed by controlling the environmental light-dark cycles and revealed that shift work-related circadian disruption exacerbated the progression of experimental periodontitis. RNA sequencing and in vitro experiments indicated that downregulation of the core circadian protein brain and muscle ARNT-like protein 1 (BMAL1) and activation of the Gasdermin D (GSDMD)-mediated pyroptosis were involved in the pathogenesis of that. Mechanically, BMAL1 regulated GSDMD-mediated pyroptosis by suppressing NOD-like receptor protein 3 (NLRP3) inflammasome signaling through modulating nuclear receptor subfamily 1 group D member 1 (NR1D1),

and inhibiting Gsdmd transcription via directly binding to the E-box elements in its promoter. GSDMD-mediated pyroptosis accelerated periodontitis progression, whereas downregulated BMAL1 under circadian disruption further aggravated periodontal destruction by increasing GSDMD activity. And restoring the level of BMAL1 by circadian recovery and SR8278 injection alleviated simulated shift work-exacerbated periodontitis via lessening GSDMD-mediated pyroptosis. These findings provide new evidence and potential interventional targets for circadian disruption-accelerated periodontitis.

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### **Clinical Chronobiology: Circadian Rhythms in Health and Disease.**

Tomatsu S, Abbott SM, Attarian H. *Semin Neurol.* 2025 Mar 10.

Circadian rhythms (CRs) are entrainable endogenous rhythms that respond to external stimuli and regulate physiological functions. The suprachiasmatic nucleus (SCN) in the hypothalamus is the mammalian master clock that synchronizes all other tissue-specific peripheral clocks, primarily through gamma-aminobutyric acid (GABA) and vasoactive intestinal polypeptide (VIP). The SCN follows Earth's 24-hour cycle by light entrainment through the retinohypothalamic tract. At the cellular level, the core clock genes CLOCK, BMAL1, PER1-PER3, CRY1, and CRY2 regulate CRs in a negative feedback loop. The circadian disruption of the sleep-wake cycle manifests in at least six distinct clinical conditions. These are the circadian rhythm sleep-wake disorders (CRSWDs). Their diagnosis is made by history, sleep diaries, and actigraphy. Treatment involves a combination of timed light exposure, melatonin/melatonin agonists, and behavioral interventions. In addition, CR disturbances and subsequent misalignment can increase the risk of a variety of illnesses. These include infertility and menstrual irregularities as well as diabetes, obesity, fatty liver disease, and other metabolic syndromes. In addition, a disruption in the gut microbiome creates a proinflammatory environment. CR disturbances increase the risk for mood disorders, hence the utility of light-based therapies in depression. People with neurodegenerative disorders demonstrate significant disturbances in their CRs, and in their sleep-wake cycles. Circadian realignment therapies can also help decrease the symptomatic burden of these disorders. Certain epilepsy syndromes, such as juvenile myoclonic epilepsy (JME), have a circadian pattern of seizures. Circadian disturbances in epilepsy can be both the consequence and cause for breakthrough seizures. The immune system has its own CR. Disturbances in these due to shift work, for instance, can increase the risk of infections. CR disturbances can also increase the risk of cancer by impacting DNA repair, apoptosis, immune surveillance, and cell cycle regulation. Moreover, the timing of chemotherapeutic agents has been shown to increase their therapeutic impact in certain cancers.

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### **Unveiling the novel role of circadian rhythms in sepsis and septic shock: unexplored implications for chronotherapy.**

Ramsay SD, Nenke MA, Meyer EJ, Torpy DJ, Young RL. *Front Endocrinol (Lausanne).* 2025;16:1508848.

Circadian rhythms are critical to coordinating body processes to external environmental cues, such as light and feeding, to ensure efficiency and maintain optimal health. These rhythms are controlled by 'clock' transcription factors, such as Clock, Bmal1, Per1/2, Cry1/2, and Rev-erbs, which are present in almost every tissue. In modern society, disruptions to normal circadian rhythms are increasingly prevalent due to extended lighting, shift work, and long-distance travel. These disruptions misalign external cues to body processes and contribute to diseases such as obesity and non-alcoholic fatty liver disease. They also exacerbate pre-existing health issues, such as depression and inflammatory bowel disease. The normal inflammatory response to acute infection displays remarkable circadian rhythmicity in humans with increased inflammatory activity during the normal night or rest period. Severe bloodborne infections, exemplified in sepsis and the progression to septic shock, can not only

disrupt the circadian rhythmicity of inflammatory processes but can be exacerbated by circadian misalignment. Examples of circadian disruptions during sepsis and septic shock include alteration or loss of hormonal rhythms controlling blood pressure and inflammation, white blood cell counts, and cytokine secretions. These changes to circadian rhythms hinder sepsis and septic shock recovery and also increase mortality. Chronotherapy and chronopharmacotherapy are promising approaches to resynchronise circadian rhythms or leverage circadian rhythms to optimise medication efficacy, respectively, and hold much potential in the treatment of sepsis and septic shock. Despite knowledge of how circadian rhythms change in these grave conditions, very little research has been undertaken on the use of these therapies in support of sepsis management. This review details the circadian disruptions associated with sepsis and septic shock, the influence they have on morbidity and mortality, and the potential clinical benefits of circadian-modulating therapies.

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### **Mood variation under dual regulation of circadian clock and light.**

Rahim AR, Will V, Myung J. *Chronobiol Int.* 2025 Feb;42(2):162-84.

The intricate relationship between circadian rhythms and mood is well-established. Disturbances in circadian rhythms and sleep often precede the development of mood disorders, such as major depressive disorder (MDD), bipolar disorder (BD), and seasonal affective disorder (SAD). Two primary factors, intrinsic circadian clocks and light, drive the natural fluctuations in mood throughout the day, mirroring the patterns of sleepiness and wakefulness. Nearly all organisms possess intrinsic circadian clocks that coordinate daily rhythms, with light serving as the primary environmental cue to synchronize these internal timekeepers with the 24-hour cycle. Additionally, light directly influences mood states. Disruptions to circadian rhythms, such as those caused by jet lag, shift work, or reduced daylight hours, can trigger or exacerbate mood symptoms. The complex and often subtle connections between circadian disruptions and mood dysregulation suggest that focusing solely on individual clock genes is insufficient to fully understand their etiology and progression. Instead, mood instability may arise from systemic misalignments between external cycles and the internal synchronization of circadian clocks. Here, we synthesize past research on the independent contributions of circadian clocks and light to mood regulation, drawing particularly on insights from animal studies that illuminate fundamental mechanisms relevant to human health.

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### **Association of self-monitoring performance of cognitive performance with personal diurnal preference when sleep-deprived.**

Nishimura Y, Ohashi M, Eto T, Hayashi S, Motomura Y, Higuchi S, et al. *Chronobiol Int.* 2025 Jan;42(1):122-32.

In modern society, many workers struggle with sleep deprivation due to their work schedules and excessive workloads. Accurate self-awareness and self-monitoring abilities are crucial for workers to adopt risk-coping strategies and protective behaviors when fatigued. The current study examined the relationship between chronotypes and self-monitoring performance during 24 h of sleep deprivation. The study involved 26 male adults in a two-night experiment, and participants' diurnal preferences were evaluated using the Morningness-Eveningness Questionnaire (MEQ). Self-monitoring performance was calculated by comparing actual task performance with self-rated predicted or post-estimated performance in the psychomotor vigilance task (PVT) and Digit Symbol Substitution Task (DSST). The study found that task and self-monitoring performances in the PVT and DSST were maintained until around 4:00 h, after which they began to deteriorate. Individuals with a higher MEQ score, indicating a stronger tendency towards a morning type, showed inaccurate self-monitoring, particularly in the final quarter of the sleep deprivation experiment, due to overly optimistic

predictions. However, only prediction accuracy and not post-estimation showed this correlation. This study highlights the importance of considering an individual's chronotype in workplace management, particularly in workplaces with irregular work timings, rotating shifts, and long working hours, to ensure better occupational safety.

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### **Association between shift work and eating behaviours, sleep quality, and mental health among Italian workers.**

Lotti S, Moretton M, Bulgari M, Costantini L, Dall'Asta M, De Amicis R, et al. *Eur J Nutr.* 2025 Feb 18;64(2):97.

**PURPOSE:** Recent studies indicate that shift work may affect workers' eating habits and overall well-being. This study aimed to assess differences in eating patterns, sleep quality, and mental health between Italian shift and non-shift workers, with a focus on individual chronotype and the type of shift work (day vs. night shift). **METHODS:** The cross-sectional study involved 322 subjects (166 shift and 156 non-shift workers). Eating habits were evaluated using a 7-day diary and the Medi-Lite questionnaire. Sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI), and mental health with the Depression Anxiety Stress Scales (DASS). Individual chronotype was defined using the Morningness-Eveningness Questionnaire. **RESULTS:** No significant differences in daily energy, macronutrient, and micronutrient intake between the two groups, nor in the temporal pattern of eating. However, shift workers had significantly ( $p < 0.05$ ) lower adherence to the Mediterranean diet (MD) ( $7.6 \pm 2.3$  vs  $8.1 \pm 2.2$ ) compared to non-shift workers. Shift workers also reported significantly poorer sleep quality (mean PSQI score  $7.6 \pm 3.7$  vs  $5.8 \pm 3.0$ ) and higher levels of anxiety and stress symptoms. Among shift workers, those with an evening chronotype had significantly lower MD adherence than those with a morning chronotypes. Additionally, night shift workers experienced more sleep disturbances compared to day ones. **CONCLUSION:** Shift workers reported lower MD adherence, poorer sleep quality, and a higher prevalence of anxiety and stress symptoms compared to a similar group of non-shift workers. Evening chronotypes and night shift work were associated with worse eating habits and sleep quality.

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### **Enhanced Circadian Phase Tracking: A 5-h DLMO Sampling Protocol Using Wearable Data.**

Lim D, Choi SJ, Song YM, Park HR, Joo EY, Kim JK. *J Biol Rhythms.* 2025 Feb 27:7487304251317577.

Circadian medicine aims to leverage the body's internal clock to develop safer and more effective therapeutics. Traditionally, biological time has been estimated using dim light melatonin onset (DLMO), a method that requires collecting saliva samples over a long period under controlled conditions, to ensure the observation of DLMO, making it time-consuming and labor-intensive. While some studies have mitigated this by reducing the length of the sampling window, they significantly failed to identify the DLMO for shift workers. In this study, we present a framework that reduces the DLMO experiment time for shift workers to just 5 h. This approach combines sleep-wake pattern data from wearable devices with a mathematical model to predict DLMO prospectively. Based on this prediction, we define a targeted 5-h sampling window, from 3 h before to 2 h after the estimated DLMO. Testing this framework with 19 shift workers, we successfully identified the DLMO for all participants, whereas traditional methods failed for more than 40% of participants. This approach significantly reduces the experiment time required for measuring the DLMO of shift workers from 24 h to 5 h, simplifying the circadian phase measurements for shift workers.

[Lien vers l'article](#)

**Dynamics of phase tumbling and the reentrainment of circadian oscillators.**

Liao G, Diekman CO, Bose A. *Math Biosci.* 2025 Mar;381:109381.

Circadian clocks are comprised of networks of cellular oscillators that synchronize to produce endogenous daily rhythms in gene expression and protein abundance. These clocks have evolved to align the physiology and behavior of organisms to the 24-h environmental cycles arising from Earth's rotation. Rapid travel across time zones causes misalignment between an organism's circadian rhythms and its environment, leading to sleep problems and other jet lag symptoms until the circadian system entrains to the external cycles of the new time zone. Experimental and modeling work has shown that phase tumbling, defined as desynchronizing networks of circadian oscillators prior to an abrupt phase shift of the light-dark cycle, can speed up the process of reentrainment. Here, we use a mathematical model of circadian oscillators and 2-D entrainment maps to analyze the conditions under which phase tumbling has a positive, neutral, or negative effect on reentrainment time. We find that whether or not phase tumbling is beneficial depends on the size of the external phase shift and the location of the perturbed oscillator with respect to the fixed points and invariant manifolds of the entrainment map.

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**Chronotype and Nursing Shift Work.**

Kalra Y. *Am J Nurs.* 2025 Mar 1;125(3):64.

The relief of finding an explanation for night shift exhaustion.

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**Sleep, Circadian Rhythms, and Lung Cancer.**

Cooper D, Lopez I, Kendzerska T. *Semin Respir Crit Care Med.* 2025 Feb 3.

Lung cancer is the leading cause of cancer-related mortality worldwide, with the prevalence of the disease continually rising. Therefore, identifying disease-modifying risk factors is critical, with increasing recognition of the impact of sleep quality/sleep disorders. This narrative review summarizes the evidence on the role of five domains of sleep on lung cancer incidence and progression: (i) sleep quality/duration, (ii) sleep disordered breathing, (iii) circadian rhythm disturbances, (iv) sleep-related movement disorders and (v) personal, environmental and social factors that modulate each of these associations. Epidemiological evidence supports reduced sleep duration, increased sleep duration, poor sleep quality, insomnia, obstructive sleep apnea, evening chronotype, peripheral limb movements in sleep, and less robustly for night shift work and restless leg syndrome to be associated with increased risk of lung cancer development, with potential impacts on cancer survival outcomes. Proposed mechanisms underlying the biological plausibility of these epidemiological associations are also explored, with common theories relating to immune dysregulation, metabolic alterations, reductions in melatonin, sympathetic overactivation, increased reactive oxygen species, production of protumorigenic exosomes and inflammation. We also summarized potential treatments addressing impaired sleep quality/sleep disorders and their ability to attenuate the risk of lung cancer and cancer survival. While evidence on reversibility is inconsistent, there are trends toward positive outcomes. Future research should focus on clinical trials to confirm cause and effect relationships, large epidemiologic studies for incidence/prognosis, clarification on the relative efficacy of treatment modalities, and more in vivo animal models to establish the molecular mechanisms underlying these relationships.

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**Bibliometric analysis of global research status and trends of circadian rhythms in cancer from 2004 to 2024.**

Chen Z, Jiang S, Liu Y, Zhang T, Zheng H, Mao Y, et al. *Chronobiol Int.* 2025 Feb;42(2):185-97.

Research linking circadian dysregulation to cancer development has received increasing attention recently. However, a comprehensive understanding of research hotspots and trends in this area remains limited. International studies on the circadian rhythms in cancer were retrieved and downloaded from the Web of Science database. Bibliometric analysis and visualization were performed using VOSviewer, CiteSpace, and HistCite. Three thousand three hundred and eighteen English articles from 2004 to 2024 were screened and evaluated. The increase in publications and citations reflected the rapid expansion of the field. Scholars and institutions in the United States have relatively high academic productivity and impact. *Chronobiology International* is the most popular journal. Key clustering analysis identified six themes: biochemistry and molecular biology, physiology and immunomodulation, night shift work and health effects, physiological and mental health, tumor therapy research, and oxidative stress and cancer-related mechanisms. Keyword burst analysis identified the regulation of circadian rhythms on cells and tumor microenvironment as the research frontiers. The role of circadian rhythms in tumor immunotherapy was a current research hotspot identified by reference co-citation clustering analysis. This study reveals the current status of research on the circadian rhythms in cancer and predicts future trends. These findings provide new ideas for developing novel cancer prevention and treatment strategies.

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## Reproduction

### Effects of the Maternal Work Environment on Psychological Distress During Pregnancy: A Cross-sectional Research-The Japan Environment and Children's Study.

Kobayashi S, Saijo Y, Itoh M, Tamura N, Tojo M, Iwata H, et al. *J Occup Environ Med.* 2025 Feb 1;67(2):89-99.

**OBJECTIVES:** As part of the "Japan Environment and Children's Study (JECS)," a national prospective birth cohort study, we examined the association between the maternal work environment and psychological distress during pregnancy in Japan. **METHODS:** Employing a cross-sectional design, we analyzed data from 42,797 participants, originally collected between 2011 and 2014. Associations between the maternal work environment and psychological distress (Kessler 6) were examined using generalized estimation equation models adjusted for confounding factors. **RESULTS:** Pregnant women who worked  $\geq 51$  hours/week had a 1.19-fold higher odds ratio (OR) of psychological distress than those who worked 36 to 40 hours/week (95% confidence intervals [CIs], 1.07-1.32). Pregnant women who worked  $\geq 5$  days/month of shift work had a 1.11-fold higher OR of psychological distress than those who worked 0 days/month (1.00-1.24). **CONCLUSIONS:** We observed an association between the maternal work environment and psychological distress during pregnancy.

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### What are the experiences of nurses returning to work following maternity leave: a scoping review.

Johnson E, Elder E, Kosiol J. *BMC Nurs.* 2025 Feb 28;24(1):230.

**BACKGROUND:** There are currently significant concerns regarding the shortage and retention of nurses across the globe. Approximately 90% of the global nursing workforce is currently made up of females, yet there remains a notable absence of literature surrounding the experiences of nurses returning to work following maternity leave. The return-to-work period following maternity leave is a complex transition where women are faced with a multitude of challenges which may lead to increased work-family conflict. This is of concern given that work-family conflict has been identified as a key contributor influencing nurses' intention to leave. Furthermore, it is not uncommon for mothers to take career breaks, work part-time, or leave the workforce altogether following maternity leave. Therefore, it is essential to explore nurses' experiences returning to work following maternity leave and the factors influencing their retention. **METHOD:** A scoping review was undertaken which was guided by the Arksey and O'Malley (2005) framework, in conjunction with the PRISMA (PRISMA-ScR) (2020) checklist. The search encompassed four databases, focusing on the inclusion of research studies published within the past 5 years. The Mixed Methods Appraisal Tool (MMAT) 2018 was utilised to ensure the inclusion of high-quality articles. **RESULTS:** In total, six studies were incorporated into the review, comprising of a diverse array of qualitative and quantitative research methodologies. These methodologies encompassed semi-structured interviews, focus groups, surveys, and self-assessments. From these studies, a variety of themes emerged, including the challenges of managing shift work, the level of support provided by supervisors, obstacles encountered in breastfeeding despite existing policies, difficulties associated with childcare, and levels of engagement within the workplace. **CONCLUSION:** Overall, the review highlighted several challenges and themes that nurses face when returning to work following maternity leave. Despite this, there is a gap in the literature regarding the factors that influence nursing retention following maternity leave. Future research should focus on further exploring the experiences of nurses returning to work following maternity and the factors that influence them to stay or leave.

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## Pathologies cardiovasculaires

### **The Impact of Poor Sleep Quality on Cardiovascular Risk Factors and Quality of Life.**

Onyegbule CJ, Muoghalu CG, Ofoegbu CC, Ezeorah F. *Cureus*. 2025 Jan;17(1):e77397.

This review article examines the impact of poor sleep quality on cardiovascular risk factors and quality of life. Insufficient sleep and disturbances in sleep have been linked to a variety of negative health outcomes, including an increased risk of cardiovascular disease, elevated blood pressure, obesity, and a reduced quality of life. This review explores the available evidence connecting poor sleep with these health conditions, analyzing the underlying mechanisms and pathways involved. Additionally, the challenges posed by night work, which can contribute to poor sleep and subsequent health problems, are discussed. The review also discusses evidence-based strategies for improving sleep quality, encompassing sleep hygiene practices, bright light therapy, cognitive behavioral therapy for insomnia, pharmacological interventions, and emerging digital health solutions. The aim is to analyze current research and emphasize the crucial role of prioritizing sleep quality in maintaining both cardiovascular health and quality of life.

[Lien vers l'article](#)

### **Study on the effect of occupational exposure on hypertension of steelworkers based on Lasso-Logistic regression model.**

Chen J, Zhao Z, Zheng Y, Hu J, Zhu H, Wang H, et al. *Public Health*. 2025 Feb;239:15-21.

**OBJECTIVES:** This study aimed to use a stable and predictive method: Lasso regression model to analyze hypertension's influencing factors and explore the interactions between occupational exposures. **STUDY DESIGN:** This has been a nested case-control study. **METHODS:** The case group consisted of 959 patients with high blood pressure found during the study. 959 hypertensive patients, matched 1:1 from the cohort based on the age  $\pm 2$  years and same gender distribution, served as the control group. Logistic regression has been performed to analyze the relationship between occupational exposures and hypertension after the variables were screened by the Lasso regression model and to explore the interactions between the various occupational exposures. **RESULTS:** The incidence rate of hypertension among steelworkers was 33.95 %. Noise, dust, high temperature, carbon monoxide (CO), and shift work have been found to be significantly associated with the risk of hypertension, which is 1.329, 1.370, 1.900, 1.309, and 1.427 times higher than that of the control group, respectively. In addition, a multiplicative interaction between dust and noise has been found ( $P = 0.038$ ). **CONCLUSION:** The study suggested that exposure to dust, high temperature, CO, noise, and shift work increases the risk of hypertension among steelworkers and that the risk of hypertension is more pronounced among workers exposed to both dust and noise.

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### **Understanding the mechanistic interlink between circadian misalignment and heart disease in night shift workers: Therapeutic role of behavioral interventions.**

Bou Serhal J, Fayyad-Kazan M, Kabrita CS. *Sleep Breath*. 2025 Feb 18;29(1):109.

**BACKGROUND:** Rotating and night shift work, especially in older workers, is a growing health concern of modern societies due to the associated high morbidity and mortality rates from cardiovascular disease (CVD). The resulting circadian misalignment disrupts neuroendocrine pathways that regulate cardiovascular physiology, risking myocardial tissue damage and heart dysfunction. **AIMS:** Considering the gaps in the literature as to how atypical work behaviors may disrupt the temporal link between the

central and myocardial oscillators at the level of the proteome and transcriptome, the primary goal of this review is to assess the molecular mechanisms linking disrupted biological rhythms to heart health, with a focus on core clock genes like BMAL1 and cardiac troponin I (cTnI) as a myocardial biomarker. MAJOR FINDINGS: Circadian misalignment can lead to cognitive decline, metabolic dysfunction, and immune disruption, all of which elevate CVD risk. BMAL1 has a key role in maintaining cardiovascular integrity, with its dysfunction associated with hypertension, arrhythmias, and myocardial injury. Additionally, disrupted sleep patterns influence the expression of clock genes, potentially leading to altered heart function and elevated levels of cardiac biomarkers like troponin. CONCLUSION: Circadian misalignment poses significant CVD risks, particularly for older workers. Future research should investigate how the expression of central and peripheral clock genes, as well as cardiac biomarkers is affected by shift work, especially in older individuals. Behavioral interventions such as chronotherapy, light therapy, and scheduled evening sleep may help mitigate these risks, but more studies are needed to assess their long-term effectiveness.

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### **Direct and Indirect Effects of Prolonged Exposure to Long Working Hours on Risk Stroke Subtypes in the CONSTANCES Cohort.**

Fadel M, Sembajwe G, Li J, Leclerc A, Pico F, Schnitzler A, et al. *J Stroke*. 2025 Jan;27(1):154-7.

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