LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Août 2026



Objectifs : réaliser une veille scientifique sur les horaires atypiques

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

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Horaires atypiques (HA)

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Job Strain and Nonstandard Work Schedules as Drivers of Accelerated Biological Aging.

Joyama Y, Taioli E, Thompson HM, Laskaris Z, Tuminello S. *J Occup Environ Med*. 2026 Jul 28.

OBJECTIVE: To evaluate associations between occupational characteristics and accelerated phenotypic aging among working-age U.S. adults. METHODS: This cross-sectional study used National Health and Nutrition Examination Survey (NHANES) 1999-2010 data from 12,090 working adults aged 20-65 years. Occupations were categorized as high, moderate, or low strain based on job strain and control. Work schedule was classified as day, evening/night, or other nonstandard shift. Phenotypic age acceleration was assessed using PhenoAge residuals. RESULTS: High strain (β = 0.44 years, 95% Confidence Interval [CI] 0.14-0.74) and moderate strain occupations (β = 0.49 years, 95% CI 0.12-0.85) were associated with higher PhenoAge residuals compared with those in low strain occupations. Evening/night shifts work was also associated with accelerated aging (β = 0.66 years, 95% CI 0.13-1.19). CONCLUSIONS: Occupational strain and evening/night shift work may contribute to accelerated phenotypic aging.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Associations between adverse working hours and nurses' sickness absence: a longitudinal analysis of e-roster data from acute hospital wards.

Emmanuel T, Griffiths P, Lamas-Fernandez C, Dall'Ora C. *BMJ Open*. 2026 Jul 21;16(7):e120066.

OBJECTIVE: To examine the associations between registered nurses' shift work patterns and sickness absence in hospital inpatient wards. DESIGN: Retrospective longitudinal study using 1.4 million e-roster and sickness absence records analysed with logistic mixed-effects models. SETTING: All adult acute inpatient hospital wards in two large healthcare organisations (Trusts) in England. PARTICIPANTS: Registered nurses (N=7515) working across 95 adult acute wards in 2015-2020.

PRIMARY OUTCOME MEASURE: Nurses' sickness absence in relation to the shift pattern configurations worked in the previous 7 days. Logistic mixed-effects models were adjusted for total working hours, bank hours, previous sickness and part-time status. RESULTS: Higher odds of sickness absence were significantly associated with each additional rest period of fewer than 11.5 hours (OR 1.23, 95% CI 1.19 to 1.27, p<0.001), change between day and night shifts (OR 1.09, 95% CI 1.04 to 1.13, p<0.001) and spell of 3 or more consecutive shifts (OR 1.24, 95% CI 1.16 to 1.32, p<0.001) in the previous 7 days. By accounting for nonlinearity, analyses revealed that working 70% of shifts as ≥12-hour shifts and 100% of shifts as night shifts were associated with increased odds of sickness (OR 1.68, 95% CI 1.53 to 1.84 and OR 1.07, 95% CI 1.01 to 1.13, respectively) when compared with working none of these shift types. Sensitivity analysis using 28-day exposure windows did not change the direction of effects; however, the magnitude and significance of some associations attenuated. CONCLUSIONS: This study highlights the organisational consequences of adverse working hours arrangements for registered nurses working in hospital wards. Short recovery periods, frequent shift rotations, consecutive working spells and high proportions of long and night shifts were associated with higher odds of sickness absence, with associations most apparent over 7-day exposure windows. Overall, these findings can inform shift planning policies that better support staff well-being through proactive management of sickness absence.

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

Design and Implementation of an Educational Escape Room for Clinical Simulation in Veterinary Emergency Training: Students' Perceptions.

Del Río-Martínez C, Bonastre C, López-Mínguez S, González Pastor C, Laliena Aznar J, Miana-Mena FJ. *J Vet Med Educ*. 2026 Jul 9:e20250175.

Emergency medicine presents unique educational challenges for veterinary students, who often face limited clinical exposure and high levels of stress during rotations. To address this, a gamified clinical simulation-designed as an escape room-was developed to simulate a night shift in a small animal emergency service. The activity combined computer-based scenarios with practical tasks using simulators and ultrasound phantoms, allowing students to work collaboratively through five sequential clinical challenges. Forty-five students, including final-year undergraduates and post-graduate interns, participated voluntarily in teams. Completion times and post-experience survey data were used to evaluate performance and perceptions. Participants reported high levels of enjoyment (4.84 ± 0.36), motivation (4.87 ± 0.40), and peer interaction (4.94 ± 0.30). They also perceived strong educational value, particularly for decision making (4.76 ± 0.49) and confidence in emergency procedures (4.46 ± 0.69). Qualitative feedback highlighted the value of simulation-based procedural training, emotional engagement, and the narrative structure of the activity. Although implementation requires simulation resources, the escape room demonstrated strong educational value and alignment with competency-based education frameworks. The integration of gamification and clinical simulation fostered active learning and reinforced both cognitive and procedural skills. This approach may serve as a replicable model for competency-based veterinary education in emergency and critical care training.

Lien vers l'article

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Lifetime exposure to shift work and risk of multiple sclerosis: retrospective and prospective cohort studies in UK Biobank.

Wyse C, Roguski A, Maguire R, Coogan A, Smith DJ, Lopez LM. *Occup Environ Med*. 2026 Jul 22;83(4):233-40.

BACKGROUND: Multiple sclerosis (MS) is an autoimmune disease with complex aetiology involving genetic, environmental and lifestyle factors. Shift work disrupts circadian rhythms and is a potential occupational risk factor for MS, with exposure before age 20 thought to be of additional risk. OBJECTIVE: To investigate associations between retrospective lifetime shift work exposure and MS diagnosis and between prospective shift work exposure and incident MS over 13 years of follow-up in the UK Biobank cohort. METHODS: Participants that were in work and free of MS at baseline were followed up for 13 years, and lifetime exposure to night, day and mixed shift work was assessed in a subset of participants. Logistic regression and Cox proportional hazard models were applied to test associations between shift work and MS diagnosis, controlling for demographic and lifestyle confounders. RESULTS: Lifetime exposure to mixed, day or night shift work was not associated with an increased risk of MS diagnosis. No significant associations were observed for early-life shift work exposure or in prospective analysis of those reporting shift work at baseline. Factors such as female

sex, smoking, childhood obesity and reduced sunlight exposure were consistently associated with higher MS risk. CONCLUSIONS: There was no evidence for an association between shift work and the risk of MS diagnosis in this cohort, in retrospective analysis of lifetime exposure or in prospective studies of shift work at baseline following 13 years of follow-up. Further research is needed to elucidate mechanisms and latitudinal variations in shift work-related MS risk.

Lien vers l'article

Occupational-circadian disruption and physical inactivity conjointly amplify fatty liver risk: based on liver ultrasound transient elastography.

Zhang Q, Sun QQ, Gu X, Cheng H. *Int J Occup Med Environ Health*. 2026 Jul 22;39(3):333-47.

OBJECTIVES: This study investigated the conjointly negative effects of floating shift work and physical inactivity on fatty liver disease (FLD) using ultrasound- based hepatic steatosis assessment. MATERIAL AND METHODS: Weighted multivariable logistic regression models were used to evaluate associations between work shifts, physical activity (PA), and FLD. Stratified and subgroup analyses were conducted to assess effect modification. Linear and quadratic regression models explored threshold effects of metabolic equivalent task (MET) levels on the degree of hepatic steatosis across shift types. RESULTS: Data from 653 participants revealed that compared with the control group (controlled attenuation parameter - CAP <248), the case group (CAP ≥ 248) had a significantly higher prevalence of floating shifts (53.8% vs. 43.5%, p = 0.008) and physical inactivity (27.8% vs. 19.1%, p = 0.032). In multivariable-adjusted models, floating shifts independently increased FLD risk (odds ratio (OR) = 1.40, p = 0.019), while PA showed a borderline association with lower FLD risk (OR = 0.57, p = 0.056). Strikingly, compared to the reference group (physically active day-shift workers), physically inactive floating-shift workers had a higher risk of FLD (OR = 2.01, p = 0.049), highlighting the effects of occupational and behavioral factors. Subgroup analyses identified advanced age (OR = 2.42, p = 0.034), obesity (OR = 12.87, p < 0.001), hypertension (OR = 2.66, p = 0.028), and diabetes (OR = 6.21, p = 0.017) as critical risk factors among floating shift workers. At moderate METs (200-400 h/week), CAP values between floating and day shift workers converged with minimal differences in the quadratic regression model. Sensitivity analyses confirmed the robustness of the primary findings: the FLD risk persisted after excluding liver diseases and with an alternative PA definition (≥22 MET-h/week). A stricter CAP threshold attenuated the shift work association. Notably, adjusting for dietary pattern attenuated but did not eliminate the significant link between shift work and FLD (OR = 1.39, p = 0.030). CONCLUSIONS: These findings emphasize the urgent need for workplace interventions targeting shift schedules to mitigate FLD risk, particularly in high-risk occupational populations. Int J Occup Med Environ Health. 2026;39(3):333-47.

Lien vers l'article

Supporting Nutritional Health of the UK Food Manufacturing Workforce: A Qualitative Study Exploring Insights From Employees.

Rogerson G, Hunt BR, Durrant L, Theobald HE, Philippou E, Hall WL, et al. *J Hum Nutr Diet*. 2026 Aug;39(4):e70310.

INTRODUCTION: Engagement of underserved groups, including low-paid, shift workers, men, and ethnic minorities, is a priority for workplace health and wellbeing practitioners. The aims of the study were to explore experiences and perceptions around nutritional health and wellbeing in UK food manufacturing shift work employees and identify priorities to take forward for research, policy and practice. METHODS: Online semi-structured interviews with shift work food manufacturing workers were conducted between May and July 2025. Interview guides were developed using the Theoretical Domains Framework, aiming to explore factors influencing healthy nutrition choices when at work (the target behaviour) and to understand perceptions of worksite nutritional health and wellbeing

provision. Data were analysed using a combined deductive framework and inductive thematic analysis approach; emergent themes were mapped to the COM-B model and linked to potential Behaviour Change Techniques. Findings were externally validated with food and beverage industry stakeholders. RESULTS: Interviews were conducted with 11 participants, 91% male, with a mean of 14 years of day and night shift work experience. Eight themes were identified including: (1) Having knowledge of healthy dietary choices for working on shift, (2) Physical consequences of dietary choices, (3) Intentions to make healthier dietary choices, (4) Influence of convenience on dietary choices, (5) Ability to access healthy dietary choices, (6) Social influence on dietary choices, (7) Emotional influence on dietary choices, (8) Ability to plan or monitor dietary intake. CONCLUSIONS: In addition to previously reported barriers around healthy food access while working atypical hours, UK food manufacturing staff face role-specific challenges, including inadequate breaks, health and safety regulations and exposure to food production. Workplace policies to improve access to healthy nutrition and protected breaks may be prerequisites for individual-level support for UK food manufacturing staff.

Lien vers l'article

Dietary pattern and night work: metabolic syndrome in healthcare workers.

Reis FLD, Brum MCB, Bertoloto JCF, Penha M, Toniasso SCC, Soares RF, et al. *Arch Endocrinol Metab*. 2026 Aug 1;70(4).

OBJECTIVE: To assess the relationship between night work, metabolic syndrome (MS) prevalence, and dietary patterns in healthcare workers at a large hospital in southern Brazil. SUBJECTS AND METHODS: A cross-sectional study was conducted with 156 healthcare workers (90 day-shift and 66 night-shift) from July 2023 to March 2024. Sociodemographic and occupational, sleep, dietary patterns, meal timing, anthropometric data, blood pressure, and lab test data were collected. RESULTS: Night-shift workers had higher blood pressure, lower HDL cholesterol, and 135% greater likelihood of developing MS than those who worked during the day. They consumed more fats and less fiber. Chrononutrition analysis showed night workers had later last meals ($p < 0.001$), longer intervals between first and last meals ($p < 0.001$), and shorter night fasting ($p < 0.001$). Ultra-processed food consumption was similar across shifts. A shorter interval between the first and last meal in night workers was linked to a 7% lower risk of MS. Findings suggest an association between night work and higher MS prevalence, with hypertension, abdominal obesity, unfavorable lipid profile, and disrupted eating timing. Circadian rhythm disruption and misaligned eating patterns, particularly prolonged eating windows and reduced nocturnal fasting, may contribute to the increased metabolic risk. CONCLUSION: Interventions targeting diet and chrononutrition are essential. Occupational health programs should address the specific challenges of night work.

Lien vers l'article

Erratum: Dietary pattern and night work: metabolic syndrome in healthcare workers.

Arch Endocrinol Metab. 2026 Jul 7;70(5).

Lien vers l'article

Body mass index links night work intensity with higher low-grade systemic inflammation: results from a field study in humans.

Nabe-Nielsen K, Papantoniou K, Arup A, Sallerup M, Nielsen HB, Schlünssen V, et al. *Int Arch Occup Environ Health*. 2026 Jul 14;99(6).

OBJECTIVE: To examine effects of night work on low-grade systemic inflammation, measured as high-sensitivity C-reactive protein (hsCRP concentration), in hospital-employed women. METHODS: We

analyzed baseline data from 929 women in the 1001 nights-cohort. Seven self-reported metrics captured night work history (never, past, current), night work duration (years) and recency (time since last night shift), current schedule (e.g., permanent night or 2- or 3-shift work), and intensity (number of weekly and consecutive night shifts, and night shifts in the past six days). We measured hsCRP concentration in blood. Associations between night work and log-transformed hsCRP concentration were estimated using generalized linear models: Model 1 adjusted for age and education; Model 2 additionally for body mass index (BMI), blood pressure, and health behaviors; Model 3 further for sleep duration and quality. RESULTS: Permanent night workers had a 49% higher hsCRP concentration than permanent day workers (estimate = 1.49; 95% CI: 1.07-2.10). In night shift workers, working ≥ 3 night shifts per week or ≥ 3 consecutive night shifts were associated with 36-53% higher hsCRP concentration compared with one weekly night shift or only single-night shifts. These associations were attenuated and became non-significant after adjustment for cardiometabolic risk factors. Additional analyses revealed that BMI largely attenuated the associations between night work intensity and hsCRP concentration. No associations were observed for other night work metrics. CONCLUSION: Permanent night work and higher night work intensity were associated with higher hsCRP concentration, with differences largely explained by BMI. Reducing night work intensity and targeting modifiable factors related to BMI may help reduce low-grade systemic inflammation among night workers.

Lien vers l'article

A cross-sectional survey to evaluate the status of digestion in rotating- and fixed-shift workers.

Madhavan Potti Lathadevi L, Chandran H, Irshad H, Parameswaran Nair L. *Front Med (Lausanne)*. 2026;13:1850861.

BACKGROUND: In the sustainment of health, the role of a well-functioning gut and effective digestion in sustaining health and contributing to disease development is immensely important. According to Ayurveda, digestive function is governed by Jaṭharāgni (digestive fire), and an impaired Jaṭharāgni (Mandagni) is considered a key factor in the initiation of many diseases. There are four types of expression of digestive fire (Jaṭharāgni) based on the predominance of the three humors, such as Vishamāgni (irregular digestion), 2. Tīkṣṇāgni (excessively intense digestion), 3. Mandāgni (slow digestion), and 4. Samāgni (balanced digestion). The state of Jaṭharāgni is influenced by several physiological factors, including season, time of day, age, constitution, dosha balance, and the quality and quantity of food consumed. Among shift workers, especially those engaged in rotating shifts, maintaining a regular lifestyle and dietary habits is often challenging. Disrupted sleep-wake cycle and an altered diet habit adversely affect normal gut physiology and impair digestion, metabolism, and gut transit time. The rising importance of shift work in modern society and an increase in the prevalence of metabolic and gastrointestinal disorders associated with the disruption of circadian rhythm highlight the need for research on digestive health among shift workers. Understanding the scientific framework on the relationship between Jaṭharāgni and altered work shifts and suggesting balanced lifestyle practices may contribute to the prevention of bad impacts on metabolic and digestive health. MATERIALS AND METHODS: A comparative, cross-sectional study was conducted among Information Technology (IT) employees from various companies in Technopark, Thiruvananthapuram, to assess the status of Jaṭharāgni among fixed-shift and rotating-shift workers. The sample size was calculated using Nassiuma's formula, and 350 employees were selected, comprising 175 fixed-shift workers and 175 rotating-shift workers (alternating between day and night shifts monthly) using a convenience sampling technique. Agnibala was assessed using a validated questionnaire published by Aparna Singh, Girish Singh, Kishore Patwardhan, and Sangeeta Gehlot, Department of Kriya Śarīra, Banaras Hindu University (BHU), Varanasi, India (2016 May) (27381899; PMCID: PMC 5871217). The questionnaire was validated using a Cronbach's alpha of 0.73 for the overall scale. For fixed-shift workers, Agnibala assessment was performed once during their routine work schedule. For rotating-shift workers, the assessment was carried out twice, once during the day-shift cycle and again during the night-shift cycle,

with data collection conducted at the end of each respective shift period to capture the influence of different work schedules on Jaṭharāgni status. Data were analyzed using the chi-squared test and the McNemar test. A p-value of < 0.05 was considered statistically significant. Cramer's V test and Cohen's test were used to calculate effect sizes for the chi-squared test and McNemar test, respectively. RESULTS AND DISCUSSION: The study indicated that most fixed-shift workers had an Agnibala status consistent with their Prakriti. In contrast, 61.7% of rotating-shift workers reported a change in their Agni status due to their job nature, with many shifting to Vishamagni during their night shifts. Statistical analysis confirmed that the nature of work significantly affects the Jaṭharāgni status, along with other factors such as Prakriti, habits, and diet. Based on these findings, it was recommended to adopt a diet and lifestyle plan tailored to Agni status to mitigate health impacts. CONCLUSION: This study findings suggest that rotating-shift work is associated with changes in the status of Agnibala, which may reflect disturbances in digestive and metabolic functioning. These observations indicate a possible relationship between shift work, circadian rhythm disruption, and digestive health. Although this study provides useful insights, further research involving larger populations, longitudinal designs, and molecular investigations is warranted to better understand these associations.

Lien vers l'article

PER1-related inflammatory signaling links night shift exposure to lower lung function in coal miners.

Liu Z, Pan H, Cui F, Yang Q, Yu Z, Chen J, et al. *iScience*. 2026 Aug 21;29(8):116919.

Cumulative night-shift exposure may disrupt circadian homeostasis and adversely relate to respiratory health. In a cross-sectional analysis of 9,464 coal miners, we found that greater cumulative night-shift exposure was associated with lower lung function after accounting for cumulative respirable dust exposure. Mendelian randomization analyses supported a potential causal link between shift work and reduced lung function and further indicated that genetically predicted lower lung function was associated with higher chronic obstructive pulmonary disease (COPD) risk. In a coal miner subgroup, lower PER1 expression partly accounted for the associations of cumulative night-shift exposure with forced expiratory volume in one second (FEV1) and forced vital capacity (FVC). Public transcriptomic and single-cell analyses showed lower PER1 expression in COPD and lung cancer-related datasets and suggested links to NF-κB-related inflammatory signaling. These findings suggest that PER1-related inflammatory signaling may represent a candidate molecular link between occupational circadian disruption and respiratory health impairment.

Lien vers l'article

Job Strain and Nonstandard Work Schedules as Drivers of Accelerated Biological Aging.

Joyama Y, Taioli E, Thompson HM, Laskaris Z, Tuminello S. *J Occup Environ Med*. 2026 Jul 28.

OBJECTIVE: To evaluate associations between occupational characteristics and accelerated phenotypic aging among working-age U.S. adults. METHODS: This cross-sectional study used National Health and Nutrition Examination Survey (NHANES) 1999-2010 data from 12,090 working adults aged 20-65 years. Occupations were categorized as high, moderate, or low strain based on job strain and control. Work schedule was classified as day, evening/night, or other nonstandard shift. Phenotypic age acceleration was assessed using PhenoAge residuals. RESULTS: High strain (β = 0.44 years, 95% Confidence Interval [CI] 0.14-0.74) and moderate strain occupations (β = 0.49 years, 95% CI 0.12-0.85) were associated with higher PhenoAge residuals compared with those in low strain occupations. Evening/night shifts work was also associated with accelerated aging (β = 0.66 years, 95% CI 0.13-1.19). CONCLUSIONS: Occupational strain and evening/night shift work may contribute to accelerated phenotypic aging.

Lien vers l'article

Metabolic biomarkers and cardiometabolic risk among night shift workers: evidence from night shift workers in Europe.

Harding BN, Laurell C, Thacher JD, Castaño-Vinyals G, Snigireva A, Garde AH, et al. *Eur J Public Health*. 2026 Jun 10;36(4).

Circadian disruption resulting from night shift work has been associated with cardiometabolic diseases, but the underlying biological pathways remain insufficiently understood. We analyzed data from the EPHOR-NIGHT cohort, including questionnaires, clinical assessments [body mass index (BMI), blood pressure (BP), waist/hip circumference], and plasma metabolites in blood samples (N = 860; day shift workers n = 362, night shift workers = 498) from Sweden, Spain, and Denmark. We applied multivariable linear regression to examine differences in cardiometabolic risk factors and metabolite levels between shift workers and examined associations between metabolites and cardiometabolic risk factors. Night shift work was associated with higher mean systolic BP (β = 1.89, 95%CI 0.00, 3.79 mmHg), higher mean BMI (β = 1.14, 95%CI 0.44, 1.84 kg/m2), and higher odds of hypertension (OR = 1.38, 95%CI 1.00, 1.89) and overweight/obesity (OR = 1.37, 95%CI 1.02, 1.82), compared to day shift work. Associations were stronger among women in sex-stratified analyses. Night shift workers had metabolic alterations, with lower fractions of polyunsaturated fatty acids, higher fractions of mono-unsaturated and saturated fatty acids, and higher levels of amino acids isoleucine, valine, and phenylalanine. These changes remained after multiple adjustments, including diet. Effects were more pronounced for those working more consecutive night shifts, more night shifts per week, and for permanent night schedules versus rotating shifts. The night shift-related metabolites were associated with higher BMI and higher blood pressure. Night shift work was associated with specific metabolic alterations linked to increased cardiometabolic risk. Our results suggest that reducing night shift intensity and consecutive nights may help mitigate these adverse effects.

Lien vers l'article

Work-related well-being and primary headache disorders among Japanese nurses: a cross-sectional structural equation modeling study.

Goto Y, Fujita T, Kimura S. *Ind Health*. 2026 Jul 29.

Acute care hospital nurses face occupational conditions linked to headache, including shift work and psychosocial stress, but pathways from work-related well-being (WRWB) to primary headache disorders remain uncharacterized in occupational settings. This cross-sectional study estimated the 1-year prevalence of primary headache disorders among 247 nurses from two acute care hospitals in Japan and examined whether WRWB is indirectly associated with headache outcomes via psychological health and sleep. Headache was classified according to the International Classification of Headache Disorders, 3rd edition. WRWB comprised work engagement, job satisfaction, and work-life balance satisfaction. Structural equation modeling was used to estimate indirect associations. The 1-year prevalence was 85.8% for any primary headache disorder, 35.2% for migraine, and 43.3% for tension-type headache (TTH). WRWB had indirect associations with any primary headache disorder (standardized β=-0.65, p<0.001), migraine (β=-0.85, p<0.001), and TTH (β=-0.60, p=0.015), but no direct associations. Pathways differed by subtype: migraine via psychological health (β=-0.47, p=0.004) and insomnia symptoms (β=-0.36, p=0.003), whereas TTH only via sleep duration (β=-0.10, p=0.041). Findings support integrating organizational and individual approaches into occupational headache management for nurses.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Evaluation of an AI-Based Constraint-Optimization Scheduler to Optimize On-Call Schedule Equity and Reduce Administrative Burden in a Pediatric Residency: Retrospective Comparative Study.

Gilad D, Farbstein-Aljanati T, Kassif Lerner R, Ashkenazi M, Pessach IM. *J Med Internet Res*. 2026 Jul 31;28:e88340.

BACKGROUND: Resident scheduling is a high-dimensional optimization problem with implications for workload, fatigue risk, and equity. Real-world evaluations of AI-based constraint-optimization in health care are limited. OBJECTIVE: This study aimed to evaluate an AI-based constraint-optimization scheduler versus a legacy rule-based scheduler for pediatric residency night calls. METHODS: This is a single-center retrospective before-after study at a 235-bed tertiary pediatric center. Twenty-four consecutive months of night-call rosters were analyzed: preimplementation (January to December 2024, legacy rule-based autoscheduler) and postimplementation (January to December 2025, AI-based constraint-programming scheduler combining a local-search metaheuristic solver with human-in-the-loop review). The analytic unit was the resident-month. Outcomes were workload distribution, threshold exceedances (>6 total and >2 weekend calls/month), undesirable sequences (consecutive weekend calls; call-rest-call; call-rest-call-rest-call), equity (mean absolute error from equal share [MAE-ES], root mean square error from equal share), publication lead time, as well as pre- and postsurvey experience. RESULTS: We analyzed 6519 shifts across 1530 resident-months (legacy: 803 resident-months/107 physicians; AI: 727/87; weekend share 28.8% [934/3246] vs 28.6% [935/3273]; service mix P=.99). Mean calls/resident-month did not decline (4.04 vs 4.50; P<.001), but within-period SD was approximately halved. Threshold exceedances fell from 133/803 (16.6%) to 28/727 (3.9%) for >6 calls per month (risk ratio [RR] 0.24, 95% CI 0.15-0.34) and 89/803 (11.1%) to 21/727 (2.9%) for >2 weekend calls (RR 0.27, 95% CI 0.16-0.40; both P<.001). Undesirable sequences declined: consecutive weekends 24.4→18.7/100 resident-months (RR 0.77; P=.02); call-rest-call 51.2→23.4 (RR 0.46); call-rest-call-rest-call 5.6→1.0 (RR 0.18; both P<.001). Equity improved overall and within every qualification stratum: MAE-ES -0.26 shifts (95% CI -0.28 to -0.23) and RMSE-ES -0.29 (95% CI -0.32 to -0.26); Senior, Advanced, and Novice strata were all P<.001 after Holm correction. Publication lead time more than doubled (10.7→21.2 d; Δ+10.5, Cohen d=4.78; Cliff δ=1.00; P<.001). Interrupted time-series confirmed immediate level shifts for >6-call exceedances (β=-8.88; P=.004), MAE-ES (β=-0.18; P<.001), call-rest-call (β=-13.17; P=.002), call-rest-call-rest-call (β=-2.35; P=.03), and >2 weekend exceedances (β=-7.32; P<.001), with stable postimplementation fairness slopes. Among survey respondents (n=47 pre; n=38 post), software satisfaction rose 6.77→8.71/10, perceived timeliness 3.28→4.61/5, perceived consecutive-night frequency 3.15→4.24, and perceived equity 2.98→3.61 (all P≤.006). CONCLUSIONS: An AI-based constraint-optimization scheduler was associated with significantly more equitable on-call workload across all qualification strata, large reductions in high-risk shift sequences and threshold exceedances, and a doubling of publication lead time, despite no reduction in mean per-physician burden once all physicians were retained. Multisite prospective replication is warranted before generalization.

Lien vers l'article

Sleep Quality and Physical Activity of Night Shift Nurses Working at Hospitals: A Cross-Sectional Survey Study.

Zydziunaite V. *Nurs Rep*. 2026 Jun 27;16(7).

Background/Objectives: The aim of the study was to explore the specific relationships between sleep quality, physical activity levels, and demographic characteristics (age, education level, and work experience) in night shift nurses working at hospitals. Understanding these relationships is critical for developing evidence-based scheduling, educational initiatives for sleep hygiene, and physical activity programs that can mitigate the negative impacts of night work, ultimately promoting nursing workforce sustainability and safer patient health outcomes. Methods: A cross-sectional design was implemented, involving 400 night shift nurses. Data were collected using a questionnaire, which included an Individual Characteristics Form, the Pittsburgh Sleep Quality Index and the International Physical Activity Questionnaire-Short Form. Results: The sleep quality of night shift nurses differed statistically significantly by age in almost all sub-scales ($p < 0.001$) except for the sub-scale "habitual sleep efficiency". A significant difference was found across groups, with sleep latency ($p = 0.038$ *) increasing as work experience grew. Nurses with more experience utilized sleep medications ($p = 0.014$ *) more frequently than less experienced ones. Physical activity levels differed significantly ($p < 0.05$): the youngest group showed a higher proportion of high physical activity (52.3%) compared to the oldest (28.9%). A statistically significant negative correlation was found between total physical activity and the total PSQI score ($r = -0.162$, $p = 0.001$). Conclusions: The data show that night shifts consistently disrupt nurses' sleep, and advancing age further compounds these difficulties. The elevated total Pittsburgh Sleep Quality Index (PSQI) scores verify severe sleep disruption across the sample. Physical activity operates as a beneficial behavioral modifier that significantly relates to better sleep quality, lower sleep latency, and less frequent use of sleep medications among night shift nurses.

Lien vers l'article

Shift Work and Happiness in Nursing: Identifying Influencing Factors Through Seligman Authentic Happiness Theory.

Kim J, Kim M, Kwak J, Yu S, Park S, Lee Y. *ANS Adv Nurs Sci*. 2026 Jun 25.

This descriptive survey study examined nursing professionalism, compassion competence, and factors influencing the happiness index among shift-working nurses based on Authentic Happiness Theory. Data were collected from 208 nurses at a university hospital in Seoul and analyzed using descriptive statistics, correlation analysis, and multiple regression. The happiness index was significantly associated with nursing professionalism and compassion competence, which were also positively correlated. Nursing professionalism, compassion competence, gender, and marital status were identified as significant predictors of the happiness index, explaining 37% of the variance.

Lien vers l'article

Associations between adverse working hours and nurses' sickness absence: a longitudinal analysis of e-roster data from acute hospital wards.

Emmanuel T, Griffiths P, Lamas-Fernandez C, Dall'Ora C. *BMJ Open*. 2026 Jul 21;16(7):e120066.

OBJECTIVE: To examine the associations between registered nurses' shift work patterns and sickness absence in hospital inpatient wards. DESIGN: Retrospective longitudinal study using 1.4 million e-roster and sickness absence records analysed with logistic mixed-effects models. SETTING: All adult acute inpatient hospital wards in two large healthcare organisations (Trusts) in England. PARTICIPANTS: Registered nurses (N=7515) working across 95 adult acute wards in 2015-2020. PRIMARY OUTCOME MEASURE: Nurses' sickness absence in relation to the shift pattern configurations

worked in the previous 7 days. Logistic mixed-effects models were adjusted for total working hours, bank hours, previous sickness and part-time status. RESULTS: Higher odds of sickness absence were significantly associated with each additional rest period of fewer than 11.5 hours (OR 1.23, 95% CI 1.19 to 1.27, p<0.001), change between day and night shifts (OR 1.09, 95% CI 1.04 to 1.13, p<0.001) and spell of 3 or more consecutive shifts (OR 1.24, 95% CI 1.16 to 1.32, p<0.001) in the previous 7 days. By accounting for nonlinearity, analyses revealed that working 70% of shifts as ≥12-hour shifts and 100% of shifts as night shifts were associated with increased odds of sickness (OR 1.68, 95% CI 1.53 to 1.84 and OR 1.07, 95% CI 1.01 to 1.13, respectively) when compared with working none of these shift types. Sensitivity analysis using 28-day exposure windows did not change the direction of effects; however, the magnitude and significance of some associations attenuated. CONCLUSIONS: This study highlights the organisational consequences of adverse working hours arrangements for registered nurses working in hospital wards. Short recovery periods, frequent shift rotations, consecutive working spells and high proportions of long and night shifts were associated with higher odds of sickness absence, with associations most apparent over 7-day exposure windows. Overall, these findings can inform shift planning policies that better support staff well-being through proactive management of sickness absence.

Lien vers l'article

Professional well-being on the night shift: Implications for patient safety in Emergency Departments.

Canut-Fusté E. *Enferm Clin (Engl Ed)*. 2026 Jul 20:502506.

Lien vers l'article

Efficacy and Adherence to a Supervised Aerobic Exercise Training Intervention in Night-Shift Hospital Nurses: A Randomized Controlled Trial.

Brennan AM, Green JF, Carnero EA, Sparks LM, Goodpaster BH, Robinson PS, et al. *Faseb j*. 2026 Jul 31;40(14):e72147.

Increasing physical activity (PA) levels may mitigate adverse consequences of shift work, including increased risk for cardiometabolic disease. However, structured exercise interventions in this population are limited. The primary objectives of this randomized controlled trial are to 1) evaluate the efficacy of a 12-week supervised exercise training intervention on cardiometabolic risk, body composition, aerobic fitness, and muscle power among shift-working nurses and 2) explore the feasibility of the intervention. Physically inactive (n = 26) night shift-working acute care nurses (33.2 ± 8.2 years) were randomized into either wait-list control (CON) or aerobic exercise (EX) for 12 weeks. Aerobic exercise training consisted of progressive supervised exercise on a cycle ergometer and treadmill 3 days/week. Cardiometabolic outcomes (fasting glucose, insulin, lipid panel) were measured using standard laboratory assays, body composition by dual-energy X-ray absorptiometry, PA by accelerometry, strength by hand-grip dynamometry, muscle power by isokinetic dynamometry, and cardiorespiratory fitness by graded exercise test (VO(2)max). Participants completed 96.2% ± 4.2% of the prescribed exercise sessions and 97% ± 4.2% of sessions were performed within the prescribed heart rate range. There were no significant between-group changes in cardiometabolic risk, body composition, PA, muscle strength, or muscle power. EX improved VO(2)max (+0.19 ± 0.17 L/min) compared to CON (-0.04 ± 0.12 L/min), independent of baseline, age, sex, and change in fat-free mass. Structured, supervised aerobic exercise consistent with recommended guidelines is an attainable and efficacious strategy for improving fitness in night shift-working acute care hospital nurses. Our novel data support the implementation and continued investigation of PA interventions in this under-studied population.

Lien vers l'article

Santé psychique

Latent Class Analysis of Shift Work Patterns Among Nurses and Its Impact on Anxiety-Depression Comorbidity: A Multicenter Cross-Sectional Study.

Zhao C, Shi X, Fan M, Huang M, Yang Y, Niu Y, et al. *Depress Anxiety*. 2026;2026:8160605.

OBJECTIVE: Relatively few population-based studies have explored the relationship between shift work patterns and anxiety-depression comorbidity among nurses. This study aimed to identify different patterns of nurse shift work and assess their association with anxiety-depression comorbidity. DESIGN: This study was based on the Nurses' Environmental and Occupational Exposure and Health Nexus (NEON) cohort. A self-designed questionnaire was used to collect general demographic information and shift work details. Anxiety and depressive symptoms were evaluated using the generalized anxiety disorder-7 (GAD-7) and the patient health questionnaire-9 (PHQ-9), respectively. Latent class analysis (LCA) was performed to identify homogeneous groups of shift work. A three-step approach of LCA, involving logistic regression models, was applied to examine associations between various shift patterns and anxiety-depression comorbidity. Sleep quality served as a stratification factor for the subgroups. RESULTS: Three latent classes were identified among 2791 shift nurses: Class 1: high-frequency, high-seniority group (N = 441, 15.80%); Class 2: low-frequency, low-seniority group (N = 835, 29.92%); Class 3: low-frequency, high-seniority group (N = 1515, 54.28%). Binary logistic regression analysis showed that, compared with Class 2, Class 3 had increased risks of anxiety, depression, and comorbid anxiety and depression by 54.8% (OR = 1.548, 95% CI 1.304-1.838), 30.6% (OR = 1.306, 95% CI 1.096-1.555), and 47.6% (OR = 1.476, 95% CI 1.245-1.749), respectively. Moreover, Class 1 had the highest risk of these conditions in both unadjusted and adjusted models. Sleep quality had no significant modifying effect. CONCLUSIONS: This study identified distinct patterns in nurses' shift work. Different patterns were significantly associated with anxiety-depression comorbidity. Targeted interventions addressing specific shift patterns may improve nurses' mental health and contribute to achieving broader health goals.

Lien vers l'article

Circadian rhythms and depression: A narrative review of human research.

Wu Q, Lei X. *Chronobiol Int*. 2026 Jul 26:1-23.

Depression is a serious mental and psychological disorder, characterized by a high incidence rate, high disability rate and high recurrence rate. It is a major problem that urgently needs to be solved in the field of global public health. Circadian rhythms regulate various physiological and behavioral processes in the human body. Previous studies have shown that there is a close connection between circadian rhythmicity and depression. Factors such as shift work, jet lag, social jet lag, chronotypes, and light at night exposure are all related to the occurrence and development of depression. An in-depth exploration of the neural mechanisms related to circadian rhythms and depression can help us better understand the relationship between the two. At present, non-pharmacological intervention methods based on circadian rhythm regulation, such as light therapy, sleep deprivation and cognitive behavioral therapy for insomnia have demonstrated clinical value in improving depression. Future research can also focus on the in-depth application of wearable devices, explore diverse and precise intervention methods, conduct in-depth longitudinal studies, and use various brain imaging devices to explore neural mechanisms, etc. providing theoretical basis and practical directions for the early prevention, precise diagnosis and personalized treatment of depression.

Lien vers l'article

Burnout Differences Between Shift-Based and Fixed-Schedule Nursing Shifts Around the World: A Systematic Review and Meta-analysis.

Vitale E, Halemani K, Shetty A, Baumann SL. *Nurs Sci Q*. 2026 Jul 9:8943184261462328.

This paper reports on the finding of a systematic review and meta-analysis of studies from around the world on burnout of nurses working rotating shifts compared with fixed shifts. The present systematic review and meta-analysis was registered in PROSPERO with ID No. CRD420261380531. CINAHL Complete, PubMed, Scopus, and Web of Science were used. We included all quasi-experimental, observational, cross-sectional, retrospective, and prospective studies recording scores in burnout and related dimensions comparing nurses who worked fixed shifts and those who worked day shifts. Our findings revealed no statistically significant differences between the two groups across all analyses, despite the presence of high and statistically significant heterogeneity ($.0001 \leq p \leq .03$). Additional research is needed to assess shift work factors that may contribute to burnout.

Lien vers l'article

The effect of night shift work on daytime sleepiness and physiological health among pediatric nurses in Northern Ghana: a cross-sectional survey.

Nukpezah RN, Tadri M, Evans RA, Niyagnan TN, Ibrahim MM. *Sci Rep*. 2026 May 11;16(1).

Pediatric nurses constitute a critical workforce in Ghana due to the continuous and high-intensity demands of child care. However, their occupational health outcomes remain underexplored, particularly in northern Ghana. This study assessed the effect of night shift work on daytime sleepiness and physiological health among pediatric nurses in the Tamale Metropolis, Northern Ghana. A cross-sectional survey was conducted among 175 pediatric nurses. A stratified sampling technique was used to ensure proportional representation of pediatric nurses from each health facility, followed by simple random sampling for participant selection. Data were collected using a structured questionnaire incorporating the Epworth Sleepiness Scale (ESS) and Night Shift Physiological Health Assessment Scale (NSPHAS). Appropriate inferential statistics were used, with statistical significance set at $p < 0.05$. The mean daytime sleepiness score following night shift work was 10.12 ($SD = 5.55$), with 20.6% of participants exhibiting severe excessive daytime sleepiness. The highest chance of dozing was reported when lying down to rest in the afternoon (31.4%). Sleep disturbances recorded the highest mean physiological health score (2.87 ± 0.98), followed by gastrointestinal disturbances and eating habit disruptions (2.29 ± 0.91), and cardiovascular and physical strain (2.28 ± 0.91). Significant differences in physiological health outcomes were also observed across sociodemographic and work-related characteristics ($p < 0.05$). Night shift work is associated with increased daytime sleepiness and physiological health disturbances among pediatric nurses. Context specific interventions, including improved shift scheduling and targeted sleep health education, may help reduce these adverse outcomes.

Lien vers l'article

Within-person differences in night-shift burden and well-being after ICU versus non-ICU night shifts among resident physicians: a paired survey study.

Li K, Liu T, Pan X, Shen Z, Fang X. *BMC Med Educ*. 2026 Jun 5;26(1).

BACKGROUND: Night shifts are integral to residency training but may disrupt sleep and recovery. ICU versus non-ICU comparisons are often confounded by between-person differences, and night-shift exposure is often operationalized using simple shift counts rather than more proximal indicators of sleep disruption and recovery. METHODS: We conducted a single-center within-person paired survey study (August 2025-January 2026) in a tertiary teaching hospital. Residents completed the same

questionnaire within 24 h after one non-ICU night shift (T1) and after their second ICU night shift (T2). Night-shift burden was assessed using self-reported indicators including duty duration, sleep during the shift, work-related awakenings/calls, and post-shift recovery. Within-person ICU versus non-ICU differences were examined using paired analyses. Associations with emotional exhaustion were evaluated using generalized estimating equations (GEE) with a Gaussian family, exchangeable working correlation structure, robust standard errors, and prespecified burden indicators. RESULTS: Sixty-one residents provided paired responses. Compared with non-ICU night shifts, ICU night shifts were characterized by higher duty duration category ($P < 0.001$), sleep during the shift shifted toward lower categories (1.95 ± 0.72 vs. 2.72 ± 0.92; $P < 0.001$), and work-related awakenings/calls shifted toward higher categories (3.39 ± 0.71 vs. 2.79 ± 0.99; $P < 0.001$). Emotional exhaustion was higher after ICU night shifts (mean paired difference + 3.39; 95% CI 1.00 to 5.79; $P = 0.006$), and life satisfaction was lower (- 8.90; 95% CI - 11.41 to - 6.40; $P < 0.001$). In the adjusted GEE model, ICU timepoint remained associated with higher exhaustion ($\beta = 2.94$; 95% CI 0.12 to 5.76; $P = 0.041$), and work-related awakenings/calls were strongly associated with higher exhaustion ($\beta = 3.37$; 95% CI 1.37 to 5.38; $P < 0.001$). CONCLUSIONS: Within the same residents, ICU night shifts were associated with greater night-shift burden and poorer immediate well-being than non-ICU night shifts. These findings should be interpreted in light of the single-center design, modest sample size, self-reported measures, and fixed measurement order. A multidimensional burden framework may help training programs identify modifiable aspects of night duty, including sleep opportunity, interruption load, and recovery time.

Lien vers l'article

Troubles cognitifs et de la vigilance

Efficacy of an anonymous, preventive, personalized online counselling to improve shift workers' sleep quality: a randomized controlled trial.

Retzer L, Graessel E, Feil M, Lehmann R, Stemmler M, Richter K. *Sci Rep*. 2026 Jul 29;16(1).

Shift work is associated with an increased risk of sleep disorders, yet tailored prevention and treatment programs remain rare and understudied. Cognitive behavioral therapy for insomnia is the first-line treatment for insomnia in the general population. We thus developed an anonymous online counselling service based on cognitive behavioral principles, adapted it to shift workers' needs, and evaluated it in a sample of German shift workers from various industries. This prospective, randomized, controlled superiority trial compares two parallel groups: an intervention group that received four personalized counselling messages and completed four weekly sleep diaries, and a waiting-list control-group that completed sleep diaries only during the four-week waiting period. In the Intention to Treat sample ($n = 66$), significant improvements were observed in both groups for the primary outcome, sleep efficiency, and for the secondary outcomes, symptoms of insomnia and depression. Daytime sleepiness did not improve in either group. However, improvements were not significantly greater in the treatment than in the control group. We can thus not demonstrate superiority of the counselling intervention over the control condition, where repeated sleep diary completion and study participation may themselves have had therapeutic effects. Limitations regarding time frame and sample size, as well as implications for research and practice are discussed.Trial registration: The study was registered with the German Clinical Trials Register DRKS under the trial ID DRKS00017777 (https://drks.de/search/en/trial/DRKS00017777). Date of registration: 14.01.2020. This study was registered during the early stages of data collection. Of the 27 participants in the final sample, the first four had initiated data collection at the date of registration. No complete data sets were available at that time.

Lien vers l'article

Sleep Quality and Physical Activity of Night Shift Nurses Working at Hospitals: A Cross-Sectional Survey Study.

Zydziunaite V. *Nurs Rep*. 2026 Jun 27;16(7).

Background/Objectives: The aim of the study was to explore the specific relationships between sleep quality, physical activity levels, and demographic characteristics (age, education level, and work experience) in night shift nurses working at hospitals. Understanding these relationships is critical for developing evidence-based scheduling, educational initiatives for sleep hygiene, and physical activity programs that can mitigate the negative impacts of night work, ultimately promoting nursing workforce sustainability and safer patient health outcomes. Methods: A cross-sectional design was implemented, involving 400 night shift nurses. Data were collected using a questionnaire, which included an Individual Characteristics Form, the Pittsburgh Sleep Quality Index and the International Physical Activity Questionnaire-Short Form. Results: The sleep quality of night shift nurses differed statistically significantly by age in almost all sub-scales ($p < 0.001$) except for the sub-scale "habitual sleep efficiency". A significant difference was found across groups, with sleep latency ($p = 0.038$ *) increasing as work experience grew. Nurses with more experience utilized sleep medications ($p = 0.014$ *) more frequently than less experienced ones. Physical activity levels differed significantly ($p < 0.05$): the youngest group showed a higher proportion of high physical activity (52.3%) compared to the oldest (28.9%). A statistically significant negative correlation was found between total physical activity and the total PSQI score ($r = -0.162$, $p = 0.001$). Conclusions: The data show that night shifts consistently disrupt nurses' sleep, and advancing age further compounds these difficulties. The elevated total Pittsburgh Sleep Quality Index (PSQI) scores verify severe sleep disruption across the sample. Physical activity operates as a beneficial behavioral modifier that significantly relates to better sleep quality, lower sleep latency, and less frequent use of sleep medications among night shift nurses.

Lien vers l'article

EEG brain network analysis of mind-wandering characteristics and its modulation by shift work in high-risk industries.

Xin Q, Hao S, Hongbin C, Xiaoqin W, Jian W, Lu L, et al. *Cogn Neurodyn*. 2026 Dec;20(1):131.

Mind-wandering (MW), a form of attentional disengagement during operational tasks, has emerged as a critical cognitive risk factor for unsafe behavior in high-risk industries. Moreover, the disruption of circadian rhythms induced by shift work further amplifies the risks associated with MW in operational contexts. However, existing research has largely relied on short duration experiments conducted under controlled laboratory conditions, leaving the neural mechanisms of MW in authentic high risk operational contexts insufficiently understood. Even fewer studies have empirically examined how shift work influences MW from the perspective of brain network organization. In response to this research gap, the present study employs Lab-in-the-Field experiments to analyze the brain network characteristics of workers in high-risk industries, aiming to elucidate the potential mechanisms by which MW and shift work jointly impact operational safety. The results demonstrated that MW significantly prolonged response times, and that shift work further exacerbated this negative effect. EEG based brain network analysis further showed that MW was accompanied by changes in brain network resource allocation, with a particularly evident decline in hub efficiency in the left prefrontal cortex. Moreover, shift work was found to affect cognitive states predominantly by altering the structural topology of brain networks, rather than by simply modulating the overall strength of functional connectivity. This study validates the brain network reorganization underlying MW and provides scientific evidence for developing cognitive state monitoring tools and targeted intervention strategies based on brain network topological features.

Lien vers l'article

Efficacy of lemborexant on sleep quality and neurocognitive outcomes among hospital rotating shift workers: A randomized, double-blind, placebo-controlled trial.

Taweepunturat T, Dechachongjumroen A, Sithinamsuwan P, Suphanklang J. *Sleep Med*. 2026 Oct;146:109056.

OBJECTIVE/BACKGROUND: Rotating shift work affects circadian alignment and sleep continuity, resulting in cognitive impairment and low-grade systemic inflammation in healthcare professional. We assessed the effectiveness of lemborexant 5 mg (LEM5) on sleep, neurocognitive function, inflammatory biomarkers, and health-related quality of life in hospital rotating shift workers experiencing sleep disorders. PATIENTS/METHOD: Rotating shift workers aged 20 to 60 years, experiencing inadequate sleep opportunity and suboptimal sleep quality, were randomized in a 1:1 ratio to receive LEM5 or a matching placebo for a duration of 3 weeks, with follow-up extending to 6 weeks. Sleep was evaluated by Fitbit Inspire 2 actigraphy and approved Thai versions of questionnaires (ESS, PSQI). Cognitive outcomes included MoCA, DSST, and GP. Plasma BDNF, IL-6, and CRP levels were assessed at baseline and at week 6. RESULTS: Forty-seven participants were randomized (LEM5 n = 25, placebo n = 22), and all completed the follow-up. LEM5 yielded significant improvements in MoCA, DSST, and GP completion times for both hands (all $p < 0.001$). LEM5 significantly decreased IL-6 and CRP levels, whereas variations in BDNF remained comparable between groups. Actigraphy revealed persistent benefit over 42 days in TST, sSOL, WASO, deep NREM sleep, REM sleep, and SE. The PSQI and EQ-5D visual analogue scores shown considerable improvement with LEM5. Somnolence and nightmares were more prevalent with LEM5; nevertheless, no significant adverse events occurred. CONCLUSIONS: LEM 5 improved sleep architecture, cognitive function, inflammatory profiles, and health-related quality of life in rotating shift healthcare workers, indicating its promise as a therapeutic intervention for this high-risk demographic.

Lien vers l'article

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Li K, Liu T, Pan X, Shen Z, Fang X. *BMC Med Educ*. 2026 Jun 5;26(1).

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night-shift burden and poorer immediate well-being than non-ICU night shifts. These findings should be interpreted in light of the single-center design, modest sample size, self-reported measures, and fixed measurement order. A multidimensional burden framework may help training programs identify modifiable aspects of night duty, including sleep opportunity, interruption load, and recovery time.

Lien vers l'article

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Nukpezah RN, Tadri M, Evans RA, Niyagnan TN, Ibrahim MM. *Sci Rep*. 2026 May 11;16(1).

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Lien vers l'article

Sleep and Substance Use Among Firefighters: Associations with Alcohol, Caffeine, and Nicotine Use.

Reichenberger DA, Lee LJ, Hebl J, Ayeni AO, Robinson Ii LD, Watkins SL, et al. *Nat Sci Sleep*. 2026;18:605149.

PURPOSE: Firefighters are at high risk for sleep disruption due to shift work. Use of alcohol, caffeine, and nicotine can also affect sleep. Thus, we evaluated daily, bidirectional associations between substance use and actigraphy-assessed sleep among firefighters. PATIENTS AND METHODS: Micro-longitudinal data were drawn from 120 firefighters participating in the Shiftwork in Firefighters (SWIFT) Study. Participants completed surveys on daily alcohol and caffeine use, current and lifetime tobacco use, and wore actigraphy devices to assess sleep timing, duration, and quality (2,617 observations). Multilevel models were used to examine both between- and within-person associations between substance use and subsequent sleep, and between sleep and next-day substance use. Models were adjusted for covariates (shift schedule, on-shift status, nighttime call volume, and naps). RESULTS: Alcohol use demonstrated strong bidirectional associations with sleep. Greater within-person alcohol consumption predicted shorter sleep and earlier waketimes, while later sleep timing and shorter sleep predicted greater next-day alcohol use. Unexpectedly, greater caffeine consumption was associated with higher sleep efficiency and fewer nighttime awakenings at the between-person level and longer total sleep time at the within-person level. Current between-person use of smokeless tobacco was associated with approximately 30 minutes shorter total sleep time, whereas lifetime cigarette use

showed no association with sleep outcomes. CONCLUSION: Substance use among firefighters exhibited substance-specific and temporally dynamic relationships with sleep. Nicotine and caffeine effects were largely person-dependent, whereas daily alcohol showed consistent bidirectional effects on sleep. These findings highlight potential intervention targets aimed at improving sleep and reducing alcohol-related risk among firefighters.

Lien vers l'article

Principal component analysis of pre-sleep artificial light at night exposure patterns and the associations with sleep disturbances in Hong Kong shift-working nurses and daytime office workers.

Li B, Liu Y, Li W, Ma JYT, Huss A, Chan J, et al. *Occup Environ Med*. 2026 Jul 30.

BACKGROUND: This study investigated actigraphy-measured pre-sleep artificial light at night (ALAN) exposure patterns on non-workdays and their associations with sleep parameters among Hong Kong shift-working nurses and daytime office workers. METHODS: Using a 7-day actigraphy-measured longitudinal study design, we recruited 136 shift nurses and 66 matched daytime office workers (July 2022-February 2023). ALAN exposure metrics and sleep parameters were derived from actigraphy data, supplemented by sociodemographic surveys and sleep-activity diaries. Principal component analysis (PCA) was performed on log-transformed light values to identify ALAN exposure patterns; mixed-effect models analysed associations with total sleep time (TST), sleep onset latency, wake after sleep onset (WASO) and sleep timing. RESULTS: Shift nurses were younger (34.8 vs 36.0 years), showing no significant difference in TST (6.6 vs 6.8 hours, p=0.447) compared with daytime office workers. PCA identified Light PC1 (overall intensity) and Light PC2 (temporal pattern) patterns. In the adjusted models, wrist-worn Light PC1 showed strong associations with shorter TST (β=-0.59, SE=0.08, p<0.001), reduced WASO (β=-0.20, SE=0.04, p<0.001), later sleep onset (β=0.20, SE=0.07, p=0.003) and earlier wake-up time (β=-0.65, SE=0.09, p<0.001). Bedroom Light PC1 showed similar but weaker associations (TST: β=-0.21, SE=0.09, p=0.028). Light PC2 was not significantly associated with any sleep outcomes. Sensitivity analyses confirmed PCA's model fit, and subgroup analyses revealed no significant interaction effects (all p>0.05). CONCLUSION: Our findings suggest sleep interventions should prioritise reducing personal light exposure before bed. Future studies could clarify the roles of specific light properties.

Lien vers l'article

Data-Driven Scheduling Strategies to Minimize Fatigue in Rotating Night-Shift Nurses.

Kim SH, Jang G, Lee Y, Lee S, Hwang H, Shin S, et al. *J Nurs Manag*. 2026;2026(1):e9994492.

BACKGROUND: Shift work is essential for continuous patient care but disrupts circadian rhythms, leading to increased fatigue, burnout, and the risk of errors. Existing guidelines for managing nurse fatigue remain broad and often lack actionable strategies for roster design and staffing. AIM: This study aimed to identify optimal shift patterns and sleep-wake schedules that minimize fatigue among rotating night-shift nurses, using mathematical modeling to provide actionable recommendations for nursing management. METHODS: A quantitative observational study was conducted with 273 nurses working 8-h rotating three-shift systems in three Korean hospitals. Sleep was monitored over 14 days using wearable devices, supplemented with survey data. Fatigue was estimated using a validated mathematical model based on the two-process model of sleep regulation, and simulations were applied to evaluate alternative shift sequences and sleep-wake strategies. RESULTS: Night shifts resulted in the shortest sleep (mean 5.0 h) and the highest fatigue, with over half of work hours predicted to be spent in a fatigued state. Three consecutive day or evening shifts yielded the most favorable outcomes, with cumulative sleep exceeding 26 h and fatigue limited to less than 1 hour. Conversely, three consecutive night shifts resulted in the poorest outcomes, with fatigue affecting 34.7% of work hours. Quick return patterns (< 11 h between shifts) significantly increased fatigue

despite comparable sleep durations. Model-derived recommendations-such as immediate postshift sleep following night duty-improved recovery and reduced cumulative fatigue. CONCLUSIONS: Limiting consecutive night duties, avoiding quick returns, and supporting tailored sleep routines may reduce fatigue among rotating night-shift nurses. IMPLICATIONS FOR NURSING MANAGEMENT: These findings provide managers with practical, evidence-based guidance for roster design, policy development, and staff education. Incorporating fatigue modeling into workforce planning can enhance nurse well-being, reduce error risks, and promote sustainable healthcare delivery.

Lien vers l'article

Associations Between Fatigue and Sleep Among Night-Shift Nurses: Mediating Role of Depressive Symptoms and Social Support.

Gu Y, Huang Q, Ni S, Dai C, Ren W. *J Nurs Manag*. 2026;2026(1):e5828649.

BACKGROUND: This study examined the association between fatigue and sleep disturbance among night-shift nurses during the COVID-19 pandemic and the mediating roles of depressive symptoms and social support. METHODS: A cross-sectional survey was conducted involving 1667 night-shift nurses from multiple hospitals. The Pittsburgh Sleep Quality Index (PSQI), Fatigue Scale-14, Hospital Anxiety and Depression Scale, and Social Support Rating Scale were used for assessment. Correlation analysis and mediation effect analysis were performed using SPSS 26.0 and PROCESS macro. RESULTS: Poor sleep (PSQI ≥ 6) was reported by 70.7% of nurses. Increased workload (89.7%) and fear of infection (58.1%) were significantly associated with worse sleep (both $p < 0.05$). Fatigue correlated positively with depression ($r = 0.607$, $p < 0.001$) and sleep disturbance ($r = 0.550$, $p < 0.001$) and negatively with social support ($r = -0.242$, $p < 0.001$). Mediation analysis identified three pathways: depressive symptoms alone (30.25% of the total effect), social support alone (0.80%), and the sequential depression ⟶ social support path (2.23%). CONCLUSIONS: Among night-shift nurses, fatigue is directly and indirectly associated with poorer sleep quality via three mediating pathways: depressive symptoms alone, social support alone, and the sequential effect of depressive symptoms on social support. Interventions should address these pathways to improve sleep in night-shift nurses under high-load public health emergency contexts. IMPLICATIONS FOR NURSING MANAGEMENT: For night-shift nurses facing excess workload during public health emergencies, managers could adopt a tiered strategy: (1) optimize shift schedules to reduce fatigue and (2) strengthen peer and family support systems. Regular monitoring of sleep and fatigue indicators is recommended to evaluate intervention effectiveness under such high-stress contexts.

Lien vers l'article

HA comme facteur de risque

Généralités et prévention

Health Problems and Associated Factors Among Grain Handlers in Bangladesh: A Cross-Sectional Study.

Ferdous N, Rahman MA, Anee AM, Nishi NJ, Ahasan MF, Khan AM, et al. *Cureus*. 2026 Jun;18(6):e110849.

Background Grain handlers are exposed to several occupational hazards, including grain dust, heat, smoke, heavy physical workload, prolonged working hours, and repetitive movements. These exposures may increase the risk of respiratory, musculoskeletal, eye, skin, and gastrointestinal problems. This study aimed to assess health problems and associated factors among grain handlers in Bangladesh. Methods A cross-sectional study was conducted among 292 grain handlers working in rice mills in Munshiganj Sadar Upazila, Dhaka Division, Bangladesh, in 2021. Data were collected through face-to-face interviews using a semi-structured questionnaire. Socio-demographic characteristics, work-related factors, and self-reported health problems were assessed. Descriptive statistics were used to summarize the findings. Bivariable and multivariable logistic regression analyses were performed to identify factors associated with health problems. Results The mean age of the respondents was 38.04±11.01 years, with a male-to-female ratio of 5:1. Most workers worked >48 hours per week (86.3%) and reported overtime work (86.3%). Respiratory problems were the most common health problem, reported by 227 workers (77.7%), followed by musculoskeletal problems in 189 (64.7%), eye problems in 73 (25.0%), gastrointestinal problems in 49 (16.8%), and skin problems in 48 (16.4%). The most common symptoms were cough in 203 (69.5%), lower back pain in 107 (36.6%), red eye in 65 (22.3%), itching in 48 (16.4%), and abdominal pain in 29 (9.9%). In the adjusted analysis, no factor was significantly associated with respiratory problems. Eye problems were less likely among workers in the boiling section than among those in the drying section (AOR=0.40, 95% CI: 0.17-0.96; p=0.039). Primary education was associated with lower odds of skin problems compared with no formal education (AOR=0.39, 95% CI: 0.17-0.88; p=0.024). Musculoskeletal problems were significantly more common among workers aged 39-58 years than among those aged 19-38 years (AOR=2.71, 95% CI: 1.35-5.44; p=0.005) and among loading/unloading workers compared with drying workers (AOR=2.23, 95% CI: 1.10-4.53; p=0.026). Gastrointestinal problems were more likely among workers working >48 hours per week than among those working ≤48 hours per week (AOR=4.05, 95% CI: 1.16-14.15; p=0.029). Conclusion Grain handlers in Bangladesh experience a high burden of occupational health problems, particularly respiratory and musculoskeletal problems. Age, education, section of job, and weekly working hours were associated with selected health problems. Because of the cross-sectional design and reliance on self-reported outcomes, these findings should be interpreted as associations rather than causal effects. Improved occupational safety measures, including dust control, ventilation, ergonomic interventions, scheduled rest periods, health education, personal protective equipment, and regular health screening, are needed to protect this vulnerable workforce.

Lien vers l'article

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

Occupational Heat Stress in Industrial Workers: Modifiable Predictors and Machine Learning Risk Classification in Northeast India.

Srinivasan K, Saikia D, Seethy A, Bhattacharjee M, Sinha A, Loganathan S, et al. *J Occup Environ Med*. 2026 Aug 1;68(8):e570-e5.

BACKGROUND: Occupational heat stress poses a growing threat to worker health and productivity in low- and middle-income countries. This study investigated modifiable predictors of heat stress among industrial workers and evaluated machine-learning models for risk classification. METHODS: A cross-sectional field-based study was conducted among 1300 workers from the chemical, construction, and packaging industries. Environmental, physiological, occupational, and behavioral data were collected using standardized questionnaires and field measurements. Multivariable regression and machine-learning models were applied to identify predictors and classify heat stress risk. RESULTS: Manual labor, long working hours, alcohol use, and inadequate hydration increased risk, while water availability, showers, and uniforms were protective. Random Forest performed best (accuracy: 72.6%; area under the curve: 0.777). CONCLUSIONS: Heat stress risk is strongly influenced by modifiable workplace and behavioral factors. Random Forest offers a reliable tool for surveillance and early prevention.

Lien vers l'article

Association of occupational burnout and perceived healthcare service quality with medical disputes among physicians and medical technicians: a cross-sectional study in China.

Liu Z, Wang J, Zou W, Qi Z, Shen L. *BMC Health Serv Res*. 2026 Jul 13.

PURPOSE: This study aimed to investigate the associations between occupational burnout, perceived healthcare service quality, and medical disputes among physicians and medical technicians, and to identify factors associated with medical disputes from their perspective. METHODS: A cross-sectional study was conducted among 1570 participants in Xuzhou, China, between October and November 2025. Hierarchical logistic regression was used to assess the associations of perceived healthcare service quality and occupational burnout with medical disputes. RESULTS: Among 1570 respondents, 283 (18.0%) reported experiencing at least one medical dispute in the past year. Higher perceived healthcare service quality (OR = 0.980, 95% CI: 0.963, 0.997) was associated with lower odds of medical disputes. In contrast, higher occupational burnout (OR = 1.059, 95% CI: 1.037, 1.082), male gender (OR = 2.459, 95% CI: 1.802, 3.357), working 40-55 (OR = 2.006, 95% CI: 1.112, 3.618) or over 55 h per week (OR = 2.408, 95% CI: 1.307, 4.437), seeing 20-30 (OR = 1.725, 95% CI: 1.184, 2.513), 30-40 (OR = 1.734, 95% CI: 1.037, 2.899) or more than 40 patients daily (OR = 1.899, 95% CI: 1.305, 2.765), and turnover intention (OR = 1.741, 95% CI: 1.233, 2.459) were associated with higher odds of disputes. CONCLUSIONS: Higher burnout levels, longer working hours, and greater daily patient volumes were

associated with an increased likelihood of reporting medical disputes, whereas higher perceived healthcare service quality was associated with a decreased likelihood of reporting such experiences. Healthcare organizations may consider implementing interventions that target workload management, burnout reduction, and communication improvement.

Lien vers l'article

Secondary traumatic stress among healthcare workers in Egypt and the mediating role of workplace protective factors.

El-Feky AA, Abuzeid MS, Atalla AA, El Korashy NM, Hammad RA, El-Shenawy A. *Sci Rep*. 2026 Jul 17;16(1).

Healthcare workers are occupationally exposed to traumatic events, placing them at risk of secondary traumatic stress (STS) a condition characterized by intrusion, avoidance, and arousal symptoms. To determine the prevalence of STS among healthcare workers, identify early warning signs, evaluate the effectiveness of workplace preventive measures, and identify factors associated with STS. A cross-sectional study was conducted from October to December 2025 among 783 healthcare workers in critical care units at Tanta University Hospitals, Egypt. Data were collected using a structured self-administered questionnaire including the Secondary Traumatic Stress Scale (STSS), an early warning signs scale, and a preventive measures scale. Multivariate logistic regression was used to identify associated factors with STS. The frequency of STS was 64.5%, with a total mean score of 58.16 ± 11.18. The most frequent early warning signs were chronic exhaustion (3.43 ± 1.126), increased anxiety about safety (3.18 ± 1.156), and difficulty maintaining work-life boundaries (3.17 ± 1.206). A strong positive correlation was observed between STS score and warning signs score ($r = 0.76$, $p < 0.01$). Multivariate logistic regression identified physicians (AOR = 2.14), working > 40 h/week (AOR = 2.07), > 8-night shifts/month (AOR = 2.56), absence of preventive measures (AOR = 2.87), and sick leave history (AOR = 1.89) as significant associated factors of severe STS. Mediation analysis revealed that social support mediated the relationship between occupational stressors and secondary traumatic stress, with a significant indirect effect (0.105, 95% CI: 0.062-0.148) accounting for 23.4% of the total effect. STS is highly prevalent among Egyptian healthcare workers and is significantly associated with modifiable workplace factors. The absence of essential organizational interventions highlights critical gaps in occupational health protection. Routine surveillance, mandatory debriefing, and enhanced organizational support are urgently needed.

Lien vers l'article

Santé psychique

Prevalence and factors associated with burnout syndrome among anesthesiology residents in Rio Grande do Sul, Brazil: a multicenter cross-sectional study.

Bagatini A, Junqueira FS, Magadan ED, Hecktheuer SR, Aquino RB, Mendes FF, et al. *Braz J Anesthesiol*. 2026 Jul–Aug;76(4):844771.

BACKGROUND: Burnout syndrome is characterized by emotional exhaustion, depersonalization, and low personal accomplishment. Anesthesiology residents are particularly vulnerable due to prolonged working hours, cognitive overload, and exposure to stressful clinical situations. This study aimed to estimate the prevalence of burnout and explore associated occupational and psychosocial factors among anesthesiology residents in Rio Grande do Sul, Brazil. METHODS: This multicenter cross-sectional study included residents from 6 training centers accredited by the Brazilian Society of Anesthesiology. Data were collected using an anonymous online questionnaire and the Portuguese-validated Maslach Burnout Inventory-Human Services Survey (MBI-HSS). Burnout was defined by high

emotional exhaustion (≥ 25), high depersonalization (≥ 10), and low personal accomplishment (≤ 32). Associations were analyzed using Fisher's exact test ($p < 0.05$). RESULTS: Ninety-two residents participated (response rate, 84.4%). The overall prevalence of burnout was 26.1% (95% CI 17.5%-36.3%). High emotional exhaustion occurred in 72.8%, depersonalization in 42.4%, and low personal accomplishment in 43.5%. Burnout was significantly associated with living alone ($p = 0.036$) and psychotropic medication use ($p = 0.017$). A weekly workload of 60 hours or more ($p = 0.068$) was not significantly associated with burnout. Female residents showed higher emotional exhaustion ($p = 0.039$). CONCLUSION: Burnout prevalence among anesthesiology residents in Rio Grande do Sul was high, predominantly characterized by emotional exhaustion. Institutional strategies focusing on psychosocial support, workload management, and mental health promotion may improve residents' well-being and professional performance.

Lien vers l'article

Job burnout and work-family conflict among emergency nurses in China: a cross-sectional study based on the job demands-resources model.

Chen X, Zhang H, Dai M, Chen X, Gao Y. *Front Public Health*. 2026;14:1869989.

BACKGROUND: Job burnout and work-family conflict have become prevalent occupational health issues in the healthcare industry. Emergency department (ED) nurses face dual pressures from high-intensity work environments and multiple role responsibilities, making them highly susceptible to job burnout. This study aimed to describe the current status of job burnout and work-family conflict among ED nurses, and explore their correlation as well as the associated factors of job burnout, so as to provide empirical evidence for formulating targeted occupational health intervention measures for ED nurses. OBJECTIVE: Based on the Job Demands-Resources (JD-R) model, this study investigated the current status of job burnout and work-family conflict among ED nurses, and analyzed the correlational relationship between work-family conflict and job burnout, intending to provide evidence-based references for improving the occupational health status of emergency nursing staff. METHODS: A cross-sectional survey was conducted from December 26, 2023-January 18, 2024. A total of 1,540 ED nurses from 30 hospitals were enrolled in the study. Data were collected via a self-designed sociodemographic questionnaire and two standardized scales for assessing job burnout and work-family conflict. Descriptive statistics, Pearson correlation analysis, and multiple linear regression analysis were performed using SPSS 26.0 (IBM Corporation, Armonk, New York, United States) to analyze the correlational relationships among variables. RESULTS: All 1,540 distributed questionnaires were valid for analysis. Most participants were female, held a bachelor's degree, and had children. The average total score of job burnout was 4.77 (SD = 6.16), with subscale scores of 11.30 (SD = 7.76) for emotional exhaustion, 8.61 (SD = 7.58) for cynicism, and 13.79 (SD = 10.04) for professional efficacy. The average total score of work-family conflict was 42.48 (SD = 16.21), including 18.27 (SD = 6.88) for work-to-family conflict and 24.21 (SD = 10.75) for family-to-work conflict. Correlation analysis showed that the total score and the scores of the two dimensions of work-family conflict were positively correlated with the total score and the scores of all three dimensions of job burnout ($r = 0.493, 0.553, 0.389$; all $P < 0.001$). Multiple linear regression analysis identified significant associated factors of job burnout, including parental status (B = -1.126, 95% CI: -2.041 to -0.211, P = 0.016), weekly working hours of 49-58 h (B = 1.010, 95% CI: 0.005-2.015, P = 0.049), weekly working hours of ≥ 59 h (B = 2.503, 95% CI: 1.128-3.878, P < 0.001), monthly night shift frequency of ≥ 9 times (B = 1.324, 95% CI: 0.344-2.303, P = 0.008), and work-to-family conflict (B = 0.449, 95% CI: 0.397-0.501, P < 0.001). CONCLUSIONS: Long working hours and frequent night shifts are closely correlated with aggravated emotional exhaustion, and work-family role conflict is significantly associated with higher job burnout levels among ED nurses. Hospital administrators should formulate targeted intervention strategies, including reasonably regulating working hours, reducing excessive night shifts, and building a family-supportive organizational atmosphere, to alleviate job burnout and stabilize the emergency nursing workforce.Lien vers l'article

Troubles cognitifs et de la vigilance

How physical activity and nutrition are associated with sleep health among female nurses: A cross-sectional study.

Hu CJ, Huang MF, Lin YT. *Work*. 2026 Jul 16:10519815261470414.

BackgroundInsomnia has become a severe issue among shift workers worldwide, particularly among female nurses.ObjectiveThis study explored the associations between physical activity and nutrition-related behaviors and insomnia among female nurses in Taiwan.MethodsWe used a cross-sectional design with convenience sampling. The study included 328 female hospital nurses with at least one year of work experience. We assessed sociodemographic and work data, insomnia level, physical activity, and nutrition-related behaviors using insomnia and health-promotion lifestyle scales. We used descriptive statistics, independent samples t-tests, and Pearson's chi-square tests to analyze the relationships with insomnia. We performed multiple logistic regression analysis to examine the associations of sociodemographic and work-related factors, physical activity, and nutrition-related behaviors with insomnia.ResultsSignificant differences between the insomnia and non-insomnia groups were observed in daily working hours, shift-work type, physical activity, and nutrition-related behaviors. In the adjusted model, working 10-12 h per day was associated with higher odds of insomnia (AOR = 2.21, 95% CI: 1.20-4.07), whereas higher physical activity scores (AOR = 0.92, 95% CI: 0.85-0.99) and healthier nutrition-related behaviors (AOR = 0.91, 95% CI: 0.84-0.98) were associated with lower odds of insomnia.ConclusionsThese findings suggest that physical activity and nutrition-related behaviors are practical, modifiable correlates of insomnia among female nurses, though causal inferences cannot be drawn due to the cross-sectional design. These results may inform future workplace-based strategies related to physical activity and nutrition to support sleep health among female nurses.

Lien vers l'article

Travail posté et de nuit facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Association Between Gastroesophageal Reflux Symptoms and Temporomandibular Disorders in Healthcare Professionals: The Role of Shift Work, Oral Parafunctions, and Psychological Distress.

Özsaray MF, Özsaray B, Pilatin Şahin E. *J Clin Med*. 2026 Jul 7;15(13).

Background/Objectives: Shift work is associated with circadian disruption, sleep disturbances, and psychological distress, all of which may influence both reflux-related symptoms and temporomandibular disorder (TMD)-related complaints. However, the relationships among reflux-related symptom burden, TMD severity, oral parafunctional behaviors, and psychological distress in healthcare professionals remain insufficiently understood. To evaluate the association between reflux-related symptom burden, assessed using the Gastroesophageal Reflux Disease Health-Related Quality of Life (GERD-HRQL) questionnaire, and TMD severity among healthcare professionals, and to investigate the potential roles of shift work, oral parafunctional behaviors, and psychological distress in this relationship. Methods: This cross-sectional observational study included healthcare professionals working at a tertiary hospital. Data were collected using validated questionnaires, including the GERD-HRQL, Fonseca Anamnestic Index, Oral Behavior Checklist (OBC), Depression Anxiety Stress Scale-21 (DASS-21), and Epworth Sleepiness Scale (ESS). Participants were categorized as shift workers (≥4 night shifts/month) and non-shift workers. Correlation and multivariable regression analyses were performed. Results: A total of 240 participants were included. Higher GERD-HRQL scores were positively correlated with TMD severity ($r = 0.31$, 95% CI: 0.19 to 0.42, $p < 0.001$), oral parafunctional behavior scores ($r = 0.28$, 95% CI: 0.16 to 0.39, $p < 0.001$), and DASS-21 stress scores ($r = 0.35$, 95% CI: 0.23 to 0.46, $p < 0.001$). Shift workers demonstrated significantly higher GERD-HRQL scores and TMD severity scores than non-shift workers, with small-to-moderate effect sizes. In multivariable analysis, higher TMD severity, OBC score, stress score, and shift-work exposure showed adjusted associations with higher GERD-HRQL scores. The model explained 32% of the variance in reflux-related symptom burden ($R(2) = 0.32$; adjusted $R(2) = 0.29$). Conclusions: Higher GERD-HRQL scores, reflecting reflux-related symptom burden rather than objectively confirmed GERD, showed weak to small-to-moderate associations with TMD severity, oral parafunctional behaviors, psychological distress, and shift-work exposure among healthcare professionals. These findings indicate co-occurrence of gastrointestinal, temporomandibular, behavioral, and psychosocial symptom domains within this occupational population. Longitudinal studies using objective diagnostic methods are required to clarify the directionality and clinical significance of these associations.

Lien vers l'article

The relationship between nurses' hedonic hunger and self-esteem.

Gördeles N, Koraş Sözen K, Çiçek Z. *Work*. 2026 Jul 15:10519815261468719.

BackgroundHedonic hunger, defined as eating driven by pleasure rather than physiological need, is associated with unhealthy eating. Nurses' shift work, workload, and emotional stress may increase

maladaptive eating, but its association with self-esteem remains unclear.ObjectıveTo examine the relationship between hedonic hunger and self-esteem among nurses and identify associated sociodemographic, occupational, and psychosocial factors.MethodsThis descriptive correlational study included 206 working nurses in a training and research hospital in Türkiye. Participants were recruited by convenience sampling. Data were collected between January 1 and August 31, 2025 using the Descriptive Characteristics Form, Power of Food Scale, and Rosenberg Self-Esteem Scale. Data were analyzed using IBM SPSS Statistics version 24.0. Normality was assessed with the Shapiro-Wilk test; Mann-Whitney U, Kruskal-Wallis, and Spearman correlation tests were used. Significance was accepted as $p < 0.05$.ResultsNurses had moderate hedonic hunger (3.42 ± 0.86) and self-esteem (14.00 ± 2.64). Hedonic hunger was significantly higher among male nurses, those with 6-10 years of experience, and those reporting irritability or fatigue, whereas nurses with chronic disease had lower levels of both variables ($p < 0.05$). A weak positive correlation was found between hedonic hunger and self-esteem ($r = 0.187$, $p = 0.007$).ConclusıonsHedonic hunger and self-esteem among nurses appear to be associated with emotional, lifestyle-related, and occupational factors. Protected meal breaks, healthier food access, and psychosocial support may help promote healthy eating behaviors and well-being among nurses.

Lien vers l'article

Editorial: Strategies for workplace design to reduce obesity and metabolic risks.

Ebrahimi MH, Keikha M, Dianati M. *Front Public Health*. 2026;14:1866218.

By synthesizing findings from five recent occupational cohort studies, this review outlines evidence-based strategies for workplace design that can systematically reduce obesity and cardio metabolic risk across diverse professional settings.

Lien vers l'article

QuantiFERON-TB Gold Plus Conversion Among Healthcare Workers: A Retrospective Cohort Study on Occupational and Metabolic Factors.

Barnabei S, Somma G, Andreadi S, Magrini A, Santacroce E, Ferrari C, et al. *Healthcare (Basel)*. 2026 Jul 22;14(14).

Background: Healthcare workers (HCWs) remain at risk of occupational exposure to Mycobacterium tuberculosis. Although workplace-related risk factors have been extensively investigated, the contribution of host metabolic factors to tuberculosis infection (TBI) susceptibility remains poorly understood. This study evaluated QuantiFERON-TB Gold Plus (QFT-Plus) conversion and its association with demographic, occupational, and metabolic risk factors. Methods: A retrospective cohort study was conducted among 3309 HCWs undergoing annual routine occupational health surveillance at Policlinico Tor Vergata in Rome (Italy) from 2017 to 2025. Data included age, sex, job category, night-shift work, departmental risk level, and biochemical parameters (lipid profile, blood glucose, and vitamin D levels). Associations with QFT-Plus conversion were assessed using univariate analyses, binary logistic regression, and multivariate Cox regression models. Results: During follow-up, 87 participants (2.6%) experienced QFT-Plus conversion. In univariate analysis, age ≥ 40 years (3.98% vs. 1.50%; $p < 0.001$) and hypercholesterolemia (3.8% vs. 2.1%; $p = 0.004$) were significantly associated with conversion. However, neither variable remained statistically significant in multivariate analyses (age: $p = 0.734$; hypercholesterolemia: $p = 0.834$). Occupational factors, including job category, night-shift work, and assignment to high-risk departments, were not significantly associated with QFT-Plus conversion. Likewise, hyperglycemia and vitamin D deficiency showed no significant associations. Conclusions: QFT-Plus conversion incidence was low, supporting the effectiveness of current hospital infection control measures in this low-incidence setting. No demographic, occupational, or metabolic

factor emerged as an independent predictor of conversion. These findings should be interpreted considering the limited number of conversion events and the multifactorial nature of TBI susceptibility.

Lien vers l'article

Glycemic Variability and Continuous Glucose Monitoring in Occupational Health: A Narrative Review of Emerging Evidence and Potential Applications in Working Populations.

Andreadi A, Andreadi S, Todaro F, Cerilli M, Lodeserto P, Pinto G, et al. *Healthcare (Basel)*. 2026 Jul 3;14(13).

BACKGROUND: Fasting plasma glucose, glycated hemoglobin (HbA1c), and oral glucose tolerance testing remain central to the diagnosis and monitoring of dysglycemia, but they mainly reflect the average glycemic exposure or discrete time-point measurements and may not capture intraday and interday glucose fluctuations. Glycemic variability (GV) has been associated with oxidative stress, endothelial dysfunction, inflammation, and diabetes-related complications, although much of the evidence derives from experimental, clinical, and diabetes-care settings rather than occupational cohorts. AIM: This narrative review examines the physiological basis, measurement, and potential occupational relevance of GV and continuous glucose monitoring (CGM) in working populations. METHODS: Literature was narratively selected from biomedical databases, major guidelines, consensus statements, and occupational-health sources, prioritizing reviews, clinical guidelines, cohort studies, mechanistic studies, and CGM studies. No systematic search, risk-of-bias assessment, or quantitative synthesis was performed. MAIN FINDINGS: CGM is an established technology in selected diabetes-care contexts and provides metrics such as coefficient of variation, time in range, time above range, and time below range. Its use in occupational medicine, however, remains investigational outside selected clinical circumstances. Work-related factors such as shift work, circadian disruption, sleep loss, psychosocial stress, irregular meal timing, sedentary behavior, and variable physical workload may influence glucose regulation, but direct evidence linking these exposures to CGM-measured GV in workers remains limited. IMPLICATIONS: Potential applications include research on occupational determinants of metabolic health, monitoring of workplace lifestyle interventions, and individualized management of workers with diabetes in safety-sensitive roles, provided that consent, confidentiality, clinical follow-up, equity, and data-governance safeguards are ensured. CONCLUSIONS: GV assessment may complement traditional metabolic markers in selected occupational-health contexts, but routine CGM-based surveillance of general worker populations is not currently supported by sufficient evidence. Further longitudinal and interventional studies are required.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

Nursing Practice Environment, Work-Family Conflict, and Turnover Intention Among Female Nurses With Children Under 18 years of Age in Japan: A Nationwide Cross-Sectional Study.

Zheng L, Kawasaki H, Guo W, Toda M, Shimpuku Y. *J Nurs Manag*. 2026;2026(1):e5439285.

OBJECTIVE: To investigate the levels of the nursing practice environment, work-family conflict, and turnover intention and explore the mediating role of work-family conflict between the nursing practice environment and turnover intention among female nurses with children under 18 years. METHODS: An online survey recruited 305 registered female nurses from 45 prefectures across Japan between July and September 2025. Variables were measured using demographic data, scales of maternal feeling of childcare burden, the practice environment of the nursing work index, work-family conflict, and turnover intention. Data analyses were performed using one-way analysis of variance, t-tests, Pearson correlation analysis, multivariate linear regression analysis, and the Process 4.0 macro plug-in method (SPSS v. 26.0). RESULTS: Turnover intention among female nurses differed significantly according to their cohabitation status, youngest child's age, department, shift pattern, weekly overtime hours, night-shift frequency, and the schedule notice period. Nurses who lived alone with children, had a child aged 16-18, with weekly overtime more than 8 h, and received schedules only 1-3 days in advance showed significantly higher turnover intention. Participants scored 12.50 ± 7.22 on the maternal feeling of childcare burden scale, 2.41 ± 0.51 on the practice environment scale, 55.74 ± 11.88 on the work-family conflict scale, and 15.20 ± 4.89 on the turnover intention scale. Higher work-family conflict was associated with greater turnover intention ($B = 0.118$, $SE = 0.023$, $\beta = 0.282$, $p < 0.001$) after controlling for the nursing practice environment. CONCLUSIONS: Among female nurses with children under 18 years of age, work-family conflict significantly mediated between the nursing practice environment and turnover intention. Reducing overtime and improving schedule predictability were critical, particularly for nurses living alone with their children and those with adolescents. Resources should foster supportive workplace culture that enhances task efficiency to manage workloads and minimize excessive overtime. Beyond the hospital, long-term cultural change promoting equitable distribution of domestic labor is essential.

Lien vers l'article

Perceived stress and structural empowerment profiles among clinical nurses: a latent profile analysis in occupational health.

Zhao W, Guo F, Hao WN. *Front Public Health*. 2026;14:1869234.

BACKGROUND: Healthcare workers, particularly nurses, face high occupational stress andinadequate organizational support, which threaten workforce stability and public health service quality. Structural empowerment is a core organizational resource for improving occupational health and wellbeing among nurses. OBJECTIVE: To identify latent profiles of structural empowerment among clinical nurses, examine their distribution characteristics, and explore associations with perceived stress and occupational factors, to support evidence-based occupational health interventions and workforce management strategies. METHODS: A cross-sectional survey was conducted among 518 clinical nurses from a tertiary general hospital in Inner Mongolia, China. We collected demographic data using a general information questionnaire. Structural empowerment was measured using the six-dimensional Conditions of Work Effectiveness Questionnaire-II, and perceived stress was assessed with the Perceived Stress Scale-10. Latent profile analysis was performed in Mplus8.3 to identify empowerment profiles, followed by pairwise binary logistic regression to examine the cross-sectional associations between perceived stress, demographic variables, and profile membership. RESULTS: The mean score of structural empowerment among clinical nurses was (43.76 ± 12.93), and the mean score of perceived stress was (26.83 ± 7.92). The optimal latent profile model was a 4-class model: low structural empowerment group (66.6%, n = 345), moderate-low structural empowerment group

(10.2%, n = 53), moderate structural empowerment group (11.4%, n = 59), and high structural empowerment group (11.8%, n = 61). Multivariate Logistic regression analysis showed that monthly night shift frequency in the past year, self-rated health status, involvement in or occurrence of nursing adverse events in the past year, and perceived stress were core influencing factors of structural empowerment. CONCLUSION: Structural empowerment among clinical nurses comprises four levels: low, moderate-low, moderate, and high. It is influenced by night shift frequency, self-rated health, nursing adverse events, and perceived stress. These findings support targeted interventions: optimizing shift scheduling, reducing work stress, prioritizing nurse health, and reframing adverse events as learning opportunities, to enhance nurse wellbeing, workforce stability, and public health service delivery.

Lien vers l'article

Clinical nurses as digital guardians: unlocking the key determinants of digital resilience in the AI era.

Yu M, Chen J, Yu R, Zhou M, Fan X, Geng R, et al. *Front Public Health*. 2026;14:1794227.

BACKGROUND: As artificial intelligence (AI) integrates into healthcare, clinical nurses need digital resilience to adapt to technological changes. However, little is known about the digital resilience of practicing nurses. This study aimed to investigate the current status and influencing factors of digital resilience among clinical nurses. DESIGN: A quantitative, descriptive, cross-sectional study was conducted in two tertiary hospitals in Nantong City, China. METHODS: A convenience sample of 460 clinical nurses completed questionnaires assessing general characteristics, AI literacy, organizational support, self-efficacy, and digital resilience. Multiple linear regression was used to identify influencing factors. RESULTS: The mean digital resilience score was 123.05 ± 11.80 (possible range 39-195), indicating a moderate-to-high level. Monthly income, number of night shifts per month, participation in AI-related training, AI literacy, organizational support, and self-efficacy were significant predictors (all $P < 0.05$). These variables collectively accounted for 78.9% of the variance. CONCLUSION: Digital resilience among clinical nurses is influenced by multiple factors. Nursing managers should implement systematic training, optimize shift schedules, enhance organizational support, and foster self-efficacy to improve digital resilience.

Lien vers l'article

Prevalence of secondary traumatic stress and its associated factors among oncology nurses: a multicenter cross-sectional study.

Wang L, Xu X, Yang X, Wang T. *Front Public Health*. 2026;14:1889359.

BACKGROUND: Although secondary traumatic stress (STS) is common in nurses and is associated with various psychological disorders such as anxiety and depression, the prevalence and its associated factors of STS specifically among oncology nurses remain unclear. This study aimed to determine the prevalence of STS and its associated factors among oncology nurses. METHODS: A cross-sectional correlational study was conducted using convenience sampling to recruit nurses from five tertiary hospitals in Sichuan Province, China, between July and December 2025. Data collection tools included a demographic information questionnaire, the Secondary Traumatic Stress Scale, and the Pittsburgh Sleep Quality Index. Univariate analysis and binary logistic regression were employed to explore the factors associated with STS among oncology nurses. RESULTS: Among the 536 enrolled oncology nurses, 342 (63.8%) were screened positive for STS symptoms based on the STSS threshold. Age (31-45 years: OR = 0.412, 95% CI: 0.181-0.929, p = 0.033; 46-60 years: OR = 0.315, 95% CI: 0.113-0.874, p = 0.026), educational background (undergraduate: OR = 0.637, 95% CI: 0.416-0.976, p = 0.038; postgraduate: OR = 0.505, 95% CI:0.467-0.851, p = 0.015), work experience (11-20 years: OR = 0.466, 95% CI: 0.351-0.658, p = 0.034; > 20 years: OR = 0.319, 95% CI:0.268-0.545, p = 0.017), night shift (OR = 1.752, 95% CI: 1.289-2.563, p = 0.035), sleep quality (OR = 2.354, 95% CI: 2.014-3.513, p < 0.001),

and self-regulatory fatigue (OR = 1.647, 95% CI: 1.157-2.256, p < 0.001) were identified as significantly associated factors of STS among oncology nurses. CONCLUSION: Our findings revealed that STS was highly prevalent among oncology nurses and was significantly correlated with age, educational background, work experience, night shift, sleep quality, and self-regulatory fatigue. These findings suggest that nursing managers should prioritize STS prevention by providing individualized psychosocial interventions, such as mindfulness training, resilience cultivation, peer support, and sleep hygiene education.

Lien vers l'article

Factors Associated With Junior Residents' Choice of the Obstetrics and Gynecology Specialty: A Longitudinal Survey Based on 2025 Career Decisions.

Mori K, Komatsu H, Sakaguchi K, Dofutsu M, Isobe M, Taniguchi F. *J Obstet Gynaecol Res*. 2026 Aug;52(8):e70428.

AIM: In Japan, the chronic shortage of obstetric-gynecologists exists in reality. To tackle the issue, we aim to identify the factors that promote or discourage junior residents' choice of the obstetrics-gynecology (Ob/Gyn) specialty. METHODS: We conducted a questionnaire survey of junior residents at the Summer School (SS) in 2023 and the Plus One Project 2 (POP2) in 2024 (preparatory educational events). One hundred and twenty-two and 179 junior residents responded, respectively. In 2025, they decided whether to specialize in Ob/Gyn. We collected anonymized data on their decisions. Using the data, as a longitudinal study, we conducted a logistic regression analysis to examine how their preferences regarding working conditions are associated with their decisions. RESULTS: There are several significant findings. First, those who consider the workplace's urban location more important are more likely to choose the Ob/Gyn specialty, according to the SS data. Second, concerns about the risk of lawsuits, fewer deliveries in the workplace, and low income prevent them from specializing in Ob/Gyn, according to the SS data. Third, those who consider annual income more important are more likely to choose the Ob/Gyn specialty, according to the POP2 data. Fourth, those who think that a sufficiently small number of night shifts is more important are less likely to specialize in Ob/Gyn, according to the POP2 data. CONCLUSION: The findings are provisional. However, after further data collection and analysis updates, this study may inform what should be done to increase the number of Ob/Gyn specialists in Japan.

Lien vers l'article

Predictors of Nursing Care Rationing in Polish Healthcare Settings: A Cross-Sectional Study Using BERNCA-R.

Manulik S, Czapla M, Vellone E, Barisone M, Juárez-Vela R, Ross C, et al. *J Clin Nurs*. 2026 Jul 23.

AIMS: To identify demographic, organisational and psychological predictors of nursing care rationing among nurses working in Polish healthcare settings and to examine its associations with burnout, coping strategies and depressive symptoms. DESIGN: A cross-sectional study. METHODS: The study was conducted between February and September 2025 among 434 nurses employed in various healthcare settings in Poland. Data were collected using the Basel Extent of Rationing of Nursing Care-Revised (BERNCA-R), the Maslach Burnout Inventory (MBI), the Mini-COPE and the Beck Depression Inventory (BDI). Descriptive statistics and univariate and multivariable linear regression analyses were performed. REPORTING METHOD: This study adhered to the STROBE guidelines for cross-sectional studies. RESULTS: The mean BERNCA-R score indicated moderate levels of care rationing. In the multivariable model, higher care rationing was associated with shift work, higher patient loads, employment in professional unions and higher income levels. Living in medium-sized cities was associated with lower rationing levels. Additionally, the coping strategy 'turning to religion' showed a small but significant positive association with care rationing. The most frequently rationed activities

included patient conversations, emotional support, patient education, proper documentation and shift handovers. CONCLUSIONS: Nursing care rationing is influenced by organisational and workforce-related factors. Workload and shift organisation emerged as key modifiable determinants. Addressing these may reduce care rationing and improve care quality and safety. IMPLICATIONS FOR THE PROFESSION AND/OR PATIENT CARE: Rationing is strongly influenced by modifiable organisational factors, including staffing and shift organisation. High patient loads and shift work increase the risk of missed care, particularly in communication, documentation and patient support. Optimising staffing and work organisation may enhance patient safety. IMPACT: This study highlights organisational drivers of missed care in a Central European context and provides evidence to inform staffing strategies and healthcare policy. PATIENT OR PUBLIC CONTRIBUTION: None.

Lien vers l'article

Determinants of nursing care rationing among nurses employed in surgical and conservative hospital wards.

Manulik S, Czapla M, Vellone E, Aldossary H, Juárez-Vela R, Martínez-Sabater A, et al. *BMC Nurs*. 2026 Jul 17;25(1).

AIM: To identify factors associated with nursing care rationing among nurses employed in surgical and conservative hospital wards. MATERIALS AND METHODS: This cross-sectional study included 383 nurses employed in surgical (n = 161) and conservative (n = 222) hospital wards. Nursing care rationing was assessed using the Basel Extent of Rationing of Nursing Care-Revised (BERNCA-R), whereas life satisfaction and dispositional optimism were evaluated using the Satisfaction with Life Scale (SWLS) and the Life Orientation Test-Revised (LOT-R), respectively. Group differences were analysed using non-parametric tests, and factors associated with nursing care rationing were identified using univariate and multivariate linear regression analyses. RESULTS: The mean nursing care rationing score in the whole group was 1.31 (SD = 0.90), whereas mean life satisfaction and dispositional optimism scores were 21.30 (SD = 6.57) and 14.85 (SD = 3.93), respectively. No significant differences between surgical and conservative ward nurses were observed in sociodemographic characteristics (all $p > 0.05$). Shift work was independently associated with higher levels of nursing care rationing in both surgical ($\beta = 0.364$; $p = 0.022$) and conservative wards ($\beta = 0.290$; $p = 0.035$). In conservative wards, completion of specialist courses was independently associated with lower levels of care rationing ($\beta = -0.272$; $p = 0.039$). CONCLUSIONS: Organisational determinants appear to be more strongly associated with nursing care rationing than individual psychological resources. Shift work was the factor most strongly associated with missed nursing care irrespective of ward profile, whereas completion of specialist courses was associated with lower levels of care rationing in conservative wards.

Lien vers l'article

Secondary traumatic stress among healthcare workers in Egypt and the mediating role of workplace protective factors.

El-Feky AA, Abuzeid MS, Atalla AA, El Korashy NM, Hammad RA, El-Shenawy A. *Sci Rep*. 2026 Jul 17;16(1).

Healthcare workers are occupationally exposed to traumatic events, placing them at risk of secondary traumatic stress (STS) a condition characterized by intrusion, avoidance, and arousal symptoms. To determine the prevalence of STS among healthcare workers, identify early warning signs, evaluate the effectiveness of workplace preventive measures, and identify factors associated with STS. A cross-sectional study was conducted from October to December 2025 among 783 healthcare workers in critical care units at Tanta University Hospitals, Egypt. Data were collected using a structured self-administered questionnaire including the Secondary Traumatic Stress Scale (STSS), an early warning signs scale, and a preventive measures scale. Multivariate logistic regression was used to identify

associated factors with STS. The frequency of STS was 64.5%, with a total mean score of 58.16 ± 11.18. The most frequent early warning signs were chronic exhaustion (3.43 ± 1.126), increased anxiety about safety (3.18 ± 1.156), and difficulty maintaining work-life boundaries (3.17 ± 1.206). A strong positive correlation was observed between STS score and warning signs score ($r = 0.76$, $p < 0.01$). Multivariate logistic regression identified physicians (AOR = 2.14), working > 40 h/week (AOR = 2.07), > 8-night shifts/month (AOR = 2.56), absence of preventive measures (AOR = 2.87), and sick leave history (AOR = 1.89) as significant associated factors of severe STS. Mediation analysis revealed that social support mediated the relationship between occupational stressors and secondary traumatic stress, with a significant indirect effect (0.105, 95% CI: 0.062-0.148) accounting for 23.4% of the total effect. STS is highly prevalent among Egyptian healthcare workers and is significantly associated with modifiable workplace factors. The absence of essential organizational interventions highlights critical gaps in occupational health protection. Routine surveillance, mandatory debriefing, and enhanced organizational support are urgently needed.

Lien vers l'article

Latent profiles of humanistic care competence among psychiatric nurses: a cross-sectional study.

Dou L, Wang H, Dou J, Zhang Q, Zheng Q, Liu N, et al. *Front Psychol*. 2026;17:1861314.

OBJECTIVE: Humanistic care competence is critical to ensuring the quality of care for psychiatric patients, yet it shows substantial individual heterogeneity. This study aimed to identify latent profiles of humanistic care competence among psychiatric nurses and explore its influencing factors to provide evidence for the development of targeted intervention strategies. METHODS: A cross-sectional study was conducted among 288 psychiatric nurses recruited through convenience sampling. Data on demographic characteristics, humanistic care competence, empathy, work environment, and social support were collected using standardized questionnaires. Humanistic care competence was operationalized based on the Knowing, Courage, and Patience dimensions of the Caring Ability Inventory (CAI). Latent profile analysis was conducted using these three dimensions. Univariate analysis and binary logistic regression were subsequently performed to identify factors associated with latent class membership. RESULTS: Two latent profiles were identified: a High humanistic care competence-Low Courage group (83.0%) and a Low humanistic care competence-High Courage group (17.0%). The High humanistic care competence-Low Courage group was characterized by higher Knowing and Patience and lower Courage, whereas the opposite pattern was observed in the Low humanistic care competence-High Courage group. Using the latter as the reference group, binary logistic regression showed that older age, female gender, higher empathy, a more favorable work environment, higher social support, and fewer night shifts significantly predicted membership in the High humanistic care competence-Low Courage group (all $p < 0.05$). CONCLUSION: Psychiatric nurses' humanistic care competence can be categorized into two distinct latent profiles characterized by contrasting patterns of Knowing, Courage, and Patience. Older age, female gender, higher empathy, a supportive work environment, greater social support, and lower night shift frequency were associated with the higher competence profile.

Lien vers l'article

Drivers of Professional Satisfaction in Emergency Medicine Residency Training in the US.

Akhavan AR, Scott KW, Hewes P, Kinney E, Pavic B, Simmons J, et al. *AEM Educ Train*. 2026 Aug;10(4):e70228.

BACKGROUND: Physician wellness discussions often center on burnout and negative aspects of clinical practice. Less is known about what brings professional satisfaction to physicians, particularly among emergency medicine (EM) residents. Understanding drivers of professional satisfaction is important for the future of the specialty as they may influence residents' career decisions. This study aimed to

identify drivers of professional satisfaction among a national cohort of EM residents. METHODS: We conducted a mixed methods study using a survey administered following the 2024 ABEM In-Training Examination to EM residents in ACGME-accredited programs. The single-item, free-text survey question asked: "List the top 3 drivers of your professional satisfaction in EM." Responses were linked to resident demographics, year in training, and program length. Using an exploratory, sequential mixed methods design, we developed a codebook via team-based thematic analysis. We subsequently quantified theme prevalence, summarized the top 10 themes, and compared the top 5 themes across strata by demographics and program characteristics. RESULTS: 3914 of 9820 eligible residents (39.9%) responded. Our team identified 41 unique themes from these responses. The top 10 drivers of professional satisfaction by frequency were: (1) EM community/team culture, (2) positive impact on patients, (3) work-life balance, (4) bedside patient interactions, (5) clinical variety, (6) shift work flexibility, (7) financial compensation, (8) opportunities for procedures, (9) EM clinical skill set, and (10) critical care opportunities. The most prevalent themes did not vary by resident demographics. CONCLUSION: In a national cohort of EM residents, we identified a list of key drivers of professional satisfaction that clustered into a small number of highly prevalent themes. The most important factors were related to the people and culture of the program and making a positive impact on patients. These findings may inform strategies to strengthen EM resident professional fulfillment and support the future of the specialty.

Lien vers l'article

Santé psychique

Occupational burnout and risk of suicidality in healthcare professionals: a PRISMA-guided systematic review.

Ungurianu A, Marina V. *Front Psychiatry*. 2026;17:1841611.

BACKGROUND: Burnout, an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed, is increasingly recognized as a critical threat to the mental health of healthcare professionals. Prolonged exposure to work-related stressors may increase the risk of suicidality, including suicidal ideation, suicide attempts, and suicide deaths. This systematic review aimed to synthesize existing evidence on the association between burnout and suicidality in healthcare professionals and to identify vulnerable subgroups and intervention priorities. METHODS: We conducted a systematic review in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (PROSPERO registration: CRD420251037488). PubMed, Scopus, Web of Science, and PsycINFO were searched for studies published between January 2005 and December 2024. Eligible studies included healthcare professionals and, where methodologically relevant, closely related high-stress occupational populations used as comparator cohorts assessed with validated burnout instruments and reporting suicidality or closely related suicide-proximal psychological outcomes. Data were extracted independently by two reviewers, and risk of bias was evaluated using the Newcastle-Ottawa Scale. Where appropriate, findings were synthesized narratively and through meta-analysis. RESULTS: A total of 29 studies met the inclusion criteria and 10 studies were included in the meta-analysis. Strong associations were consistently observed between burnout and suicidality, with emotional exhaustion and depersonalization emerging as the most robust predictors. Reduced personal accomplishment demonstrated weaker or inverse associations. Nurses and physicians were identified as particularly vulnerable, with pandemic-era studies reporting higher effect sizes compared to pre-pandemic research. Overall methodological quality was moderate to high, and heterogeneity was partly explained by profession, region, and burnout instrument used. CONCLUSIONS: Burnout, particularly emotional exhaustion and depersonalization, is consistently associated with increased suicidality among healthcare professionals, with supporting evidence from related high-stress occupational populations. Vulnerable groups include women clinicians, younger

professionals, and those engaged in rotating or night-shift work. These findings highlight the need for systematic burnout surveillance, confidential access to mental health support, and organizational reforms such as safe staffing ratios and workload regulation. Integrating suicide-prevention strategies into occupational health frameworks is urgently required to protect clinician wellbeing and sustain healthcare system resilience.

Lien vers l'article

Occupational burnout, sources of work-related stress, and Effort-Reward imbalance among hospital-based radiographers in Indonesia: A nationwide survey.

Rahmawati NA, Ma'rifah AWN, Putra AM, Lutfiya I, Rohmah S, Muhaimin, et al. *Radiography (Lond)*. 2026 Aug 1;32(6):103526.

INTRODUCTION: Radiographers face various risks related to technical demands, radiation safety, workload, and workforce limitations. No research in Indonesia has comprehensively examined burnout outcomes, sources of work stress, and perceived effort-reward. This national survey aims to explore occupational burnout, sources of work-related stress, and effort-reward imbalance among hospital-based radiographers in Indonesia. METHODS: This cross-sectional study involved 511 hospital-based radiographers in several provinces in Indonesia using convenience sampling. An online questionnaire was distributed, assessing demographic data, job characteristics, source of stress risk using the HSE Stress Indicator Tool, effort-reward imbalance using the Effort-Reward Imbalance Questionnaire (ERI), and burnout levels using the Oldenburg Burnout Inventory (OLBI). Data were analyzed descriptively and statistically. RESULTS: The prevalence of burnout was 47.2% (n = 241), followed by disengagement (21.3%; n = 109), no burnout (22.5%; n = 115), and exhaustion (9.0%; n = 46). Most respondents reported an effort-reward ratio of less than 1, indicating that the perceived reward is commensurate with the effort. Job control, manager and peer support, and role clarity were identified as domains requiring improvement. The relationship between employment status, shift work patterns, and availability of psychological counseling services and burnout showed $p < 0.05$. CONCLUSION: Burnout is a problem among hospital radiographers in Indonesia. While rewards are generally commensurate with effort, improvements are needed in terms of job control, manager and peer support, and role clarity. Work shift patterns, employment status, and the availability of psychological counseling services are associated with burnout. IMPLICATION FOR PRACTICE: Healthcare institutions should prioritize comprehensive organizational interventions to reduce burnout, including healthier shift systems, stronger workplace support, improved role clarity, equitable working conditions, and accessible psychological counseling services. These strategies may enhance radiographers' well-being.

Lien vers l'article

Identifying Key Predictors and Developing a Machine Learning Model for Nurse Burnout in China.

Li Z, Fan Q, Gan X, Wei J, Chen Y, Ying Y. *J Nurs Manag*. 2026;2026(1):e8179894.

BACKGROUND: Increasing work pressure has elevated burnout risk among Chinese nurses; identifying associated factors and developing predictive models are essential for early intervention. AIMS: This study aims to develop a nurse burnout prediction model based on machine learning algorithms in order to assist nursing management in the future. STUDY DESIGN: A cross-sectional online survey of 1391 Chinese nurses (burnout rate: 75.7%) was conducted from June to September 2025 using snowball sampling. Burnout was measured by MBI-GS, and 25 candidate variables were collected. Data were split 80/20 into training/validation sets. After variable selection (Boruta ∩ Group LASSO), seven algorithms were compared. Model evaluation used AUC, PR-AUC, calibration, DCA, and SHAP. The optimal threshold (Youden index) defined three risk tiers, and a Shiny web calculator was developed. RESULTS: Random forest achieved the best test performance (AUC = 0.879, PR-AUC = 0.940, and sensitivity = 0.870). Key features included colleague relationship, work duration, exercise frequency,

and night shift hours. SHAP analysis showed that harmonious colleague relationships, longer work duration, and regular exercise were associated with lower predicted risk, whereas longer night shifts and frequent training/exams were associated with higher predicted risk. Model calibration (HL p = 0.3505) and DCA confirmed clinical benefit. A Shiny web calculator was developed. CONCLUSION: The random forest model effectively predicts nurse job burnout with good discrimination and calibration. The Shiny web calculator developed based on this model provides a practical tool for early identification and stratified intervention in nursing management. External validation is needed to further confirm generalizability. RELEVANCE TO CLINICAL PRACTICE: The predictive model can be integrated into hospital human resource and nursing information systems to enable automatic assessment of burnout risk. This facilitates early identification of high-risk nurses, allowing managers to implement timely interventions such as adjusted schedules and psychological support. The deployed online calculator provides an accessible tool for dynamic monitoring and proactive management, supporting data-driven decision-making to improve nursing workforce stability and healthcare service quality. PERMISSION TO REPRODUCE MATERIAL FROM OTHER SOURCES: No materials from other sources were used in this manuscript that require permission. REPORTING GUIDELINES: This study followed the TRIPOD + AI statement. The completed TRIPOD + AI checklist is provided as supporting information.

Lien vers l'article

Job burnout and work-family conflict among emergency nurses in China: a cross-sectional study based on the job demands-resources model.

Chen X, Zhang H, Dai M, Chen X, Gao Y. *Front Public Health*. 2026;14:1869989.

BACKGROUND: Job burnout and work-family conflict have become prevalent occupational health issues in the healthcare industry. Emergency department (ED) nurses face dual pressures from high-intensity work environments and multiple role responsibilities, making them highly susceptible to job burnout. This study aimed to describe the current status of job burnout and work-family conflict among ED nurses, and explore their correlation as well as the associated factors of job burnout, so as to provide empirical evidence for formulating targeted occupational health intervention measures for ED nurses. OBJECTIVE: Based on the Job Demands-Resources (JD-R) model, this study investigated the current status of job burnout and work-family conflict among ED nurses, and analyzed the correlational relationship between work-family conflict and job burnout, intending to provide evidence-based references for improving the occupational health status of emergency nursing staff. METHODS: A cross-sectional survey was conducted from December 26, 2023-January 18, 2024. A total of 1,540 ED nurses from 30 hospitals were enrolled in the study. Data were collected via a self-designed sociodemographic questionnaire and two standardized scales for assessing job burnout and work-family conflict. Descriptive statistics, Pearson correlation analysis, and multiple linear regression analysis were performed using SPSS 26.0 (IBM Corporation, Armonk, New York, United States) to analyze the correlational relationships among variables. RESULTS: All 1,540 distributed questionnaires were valid for analysis. Most participants were female, held a bachelor's degree, and had children. The average total score of job burnout was 4.77 (SD = 6.16), with subscale scores of 11.30 (SD = 7.76) for emotional exhaustion, 8.61 (SD = 7.58) for cynicism, and 13.79 (SD = 10.04) for professional efficacy. The average total score of work-family conflict was 42.48 (SD = 16.21), including 18.27 (SD = 6.88) for work-to-family conflict and 24.21 (SD = 10.75) for family-to-work conflict. Correlation analysis showed that the total score and the scores of the two dimensions of work-family conflict were positively correlated with the total score and the scores of all three dimensions of job burnout (r = 0.493, 0.553, 0.389; all P < 0.001). Multiple linear regression analysis identified significant associated factors of job burnout, including parental status (B = -1.126, 95% CI: -2.041 to -0.211, P = 0.016), weekly working hours of 49-58 h (B = 1.010, 95% CI: 0.005-2.015, P = 0.049), weekly working hours of ≥ 59 h (B = 2.503, 95% CI: 1.128-3.878, P < 0.001), monthly night shift frequency of ≥ 9 times (B = 1.324, 95% CI: 0.344-2.303, P = 0.008), and work-to-family conflict (B = 0.449, 95% CI: 0.397-0.501, P < 0.001).

CONCLUSIONS: Long working hours and frequent night shifts are closely correlated with aggravated emotional exhaustion, and work-family role conflict is significantly associated with higher job burnout levels among ED nurses. Hospital administrators should formulate targeted intervention strategies, including reasonably regulating working hours, reducing excessive night shifts, and building a family-supportive organizational atmosphere, to alleviate job burnout and stabilize the emergency nursing workforce.

Lien vers l'article

Troubles cognitifs et de la vigilance

Sleep Worry Among Clinical Nurses: A Cross-Sectional Study.

Zhou X, Wang X. *Am J Nurs*. 2026 Aug 1;126(8):36-40.

BACKGROUND: Sleep-related worry is recognized as a significant determinant of sleep quality. Yet the prevalence and correlates of sleep worry among clinical nurses have not been well established. PURPOSE: This cross-sectional study aimed to investigate the prevalence and correlates of sleep worry among clinical nurses in order to guide the development of targeted intervention strategies. METHODS: Clinical nurses employed at a large urban hospital in China from June to November 2024 were recruited for this study. A rigorously developed and validated sleep worry scale was used to assess each nurse's level of sleep worry. Correlational analysis was used to identify significant associations between variables of interest and sleep worry. Multiple linear regression analysis was used to identify significant influencing factors of sleep worry. RESULTS: A total of 285 clinical nurses were included in the study. Within this cohort, the prevalence of sleep worry was 64%; the mean sleep worry scale score was 32.14. Correlation analysis revealed significant associations between sleep worry and participants' age, work department, professional title, years of nursing experience, and number of night shifts per month. Multiple linear regression analysis identified age, work department, professional title, years of nursing experience, and number of night shifts per month as significant influencing factors of sleep worry. CONCLUSIONS: The high prevalence of sleep worry among clinical nurses underscores the need for targeted and effective intervention strategies. The identified influencing factors provide valuable guidance for the development of these strategies. Such measures are essential to effectively mitigate sleep worry among clinical nurses, thereby potentially enhancing their overall well-being and job performance.

Lien vers l'article

Analysis of sleep quality and its influencing factors among residents in Chengguan District of Lhasa.

Zhang L, Zhao H, Xu M, Jiang Y, Zhang B, Zhou D, et al. *BMC Public Health*. 2026 May 14;26(1).

BACKGROUND: The aim of this study was to assess the quality of sleep and its determinants among residents of the Chengguan District in Lhasa, to provide foundational evidence for future intervention studies targeting sleep disorders in high-altitude populations. METHODS: We conducted a cross-sectional study in Chengguan District, Lhasa, between March and June 2023. Using a four-stage cluster random sampling design, 3,742 eligible residents were recruited. Data were collected using a custom Sociodemographic and Health-related Information Form and the Pittsburgh Sleep Quality Index (PSQI). RESULTS: The mean Pittsburgh Sleep Quality Index (PSQI) score of the residents in the Chengguan District of Lhasa was 4.58 ± 3.03, and the prevalence rate of sleep disorders was 15.3%. Binary logistic regression analysis revealed that factors significantly correlated with sleep disorders encompassed being female, being of Han ethnicity or other ethnic minorities, possessing a high level of education, being married, divorced, or widowed, alcohol intake, taking naps lasting more than 30 min, using electronic products for over 30 min at night, suffering from chronic diseases, experiencing perceived

stress, cognitive performance, engaging in shift work, and exposure to residential noise (χ^2 = 690.207, P < 0.001). CONCLUSIONS: The prevalence of sleep disorders is high among residents in the Chengguan District of Lhasa. Demographic and sociological factors, lifestyle habits, physical and mental health status, occupational factors, and residential noise appear to influence sleep quality. Therefore, it would be beneficial for relevant authorities to focus on these susceptible populations in future interventions, aiming to enhance sleep quality and overall quality of life through environmental improvements, lifestyle modifications, strategic scheduling, and the provision of psychological support.

Lien vers l'article

How physical activity and nutrition are associated with sleep health among female nurses: A cross-sectional study.

Hu CJ, Huang MF, Lin YT. *Work*. 2026 Jul 16:10519815261470414.

BackgroundInsomnia has become a severe issue among shift workers worldwide, particularly among female nurses.ObjectiveThis study explored the associations between physical activity and nutrition-related behaviors and insomnia among female nurses in Taiwan.MethodsWe used a cross-sectional design with convenience sampling. The study included 328 female hospital nurses with at least one year of work experience. We assessed sociodemographic and work data, insomnia level, physical activity, and nutrition-related behaviors using insomnia and health-promotion lifestyle scales. We used descriptive statistics, independent samples t-tests, and Pearson's chi-square tests to analyze the relationships with insomnia. We performed multiple logistic regression analysis to examine the associations of sociodemographic and work-related factors, physical activity, and nutrition-related behaviors with insomnia.ResultsSignificant differences between the insomnia and non-insomnia groups were observed in daily working hours, shift-work type, physical activity, and nutrition-related behaviors. In the adjusted model, working 10-12 h per day was associated with higher odds of insomnia (AOR = 2.21, 95% CI: 1.20-4.07), whereas higher physical activity scores (AOR = 0.92, 95% CI: 0.85-0.99) and healthier nutrition-related behaviors (AOR = 0.91, 95% CI: 0.84-0.98) were associated with lower odds of insomnia.ConclusionsThese findings suggest that physical activity and nutrition-related behaviors are practical, modifiable correlates of insomnia among female nurses, though causal inferences cannot be drawn due to the cross-sectional design. These results may inform future workplace-based strategies related to physical activity and nutrition to support sleep health among female nurses.

Lien vers l'article

Development and Internal Validation of an Explainable Machine Learning Model for Compassion Fatigue Risk Stratification Among Clinical Nurses in China.

Chen M, Che C. *Risk Manag Healthc Policy*. 2026;19:617883.

BACKGROUND: Compassion fatigue (CF) is a significant occupational challenge among nurses and is associated with adverse workforce and patient-care outcomes. In China's demanding healthcare system, identifying nurses at elevated risk of CF may help inform targeted support strategies. This study aimed to develop and internally validate an explainable machine learning (ML)-based model for CF risk stratification among clinical nurses. METHODS: A cross-sectional survey was conducted among 969 clinical nurses in Liaoning Province, China. CF status was classified using established Professional Quality of Life Scale questionnaire cutoff criteria. A hybrid approach combining the Boruta algorithm and Least Absolute Shrinkage and Selection Operator regression was employed. Eight ML algorithms were developed and compared. Model performance was evaluated using the area under the receiver operating characteristic curve (AUC), accuracy, recall, and F1-score. Shapley Additive exPlanations (SHAP) analysis was used to interpret the optimal model and quantify the contribution of important risk factors. RESULTS: Based on questionnaire-defined criteria, 56.2% of participants were classified as

having elevated CF symptoms. Among the evaluated algorithms, the Naïve Bayes (NB) model demonstrated the best overall performance, achieving an AUC of 0.924 (95% confidence interval [CI]: 0.894-0.954) in the testing set. It also showed favorable calibration and potential net benefit. SHAP analysis indicated that social support, work engagement, and mindfulness were important protective factors, whereas exposure to workplace violence, frequent night shifts, prolonged daily working hours, and department assignment were important risk factors associated with elevated CF symptom classification. CONCLUSION: The NB-based model demonstrated strong discrimination and interpretability for stratifying nurses at elevated risk of CF within this study population. The findings highlight potentially modifiable factors associated with elevated CF symptoms and may support targeted occupational health strategies. External and prospective validation studies are still needed before broader implementation in clinical or administrative settings.

Lien vers l'article

Validation and Feasibility of a Consumer-Grade Wearable Sleep Monitoring Device and Exploratory Evaluation of Sleep Characteristics and Associated Factors Among Nurses: A Feasibility Observational Cohort Study.

Lim SH, Aloweni F, Ong P, Ang SY. *JMIR Nurs*. 2026 Jul 16;9.

BACKGROUND: Background: Shift work disorder and insufficient sleep are prevalent among nurses, leading to fatigue, reduced well-being, and potential safety concerns. Increasing use of wearable sleep-tracking devices presents an opportunity to evaluate nurses' sleep quality objectively. OBJECTIVE: Objective: The primary objective was to evaluate the feasibility of wearable-based sleep monitoring and to obtain preliminary evidence of agreement with validated actigraphy among nurses. The secondary objective was to describe nurses' sleep characteristics and examine exploratory associations between sociodemographic characteristics, shift patterns, sleep hygiene, and sleep parameters. METHODS: Methods: A two-phase feasibility observational cohort study was conducted in a tertiary hospital in Singapore. In Phase 1, five nurses concurrently wore a consumer-grade wrist-worn wearable Apple Watch Series 10 and a validated actigraph (GENEActiv®) for two weeks. Preliminary agreement between Apple Watch and GENEActiv® was examined using intraclass correlation coefficients (ICC). Feasibility was determined via wear compliance and completeness of data. In Phase 2, 50 nurses working rotating or single shifts completed demographic and work-related questionnaires and Sleep Hygiene Index. Multiple linear regression analyses were performed to examine exploratory associations between selected covariates and sleep parameters, with adjustment for age, sex, Body Mass Index (BMI), parental status, workplace, total length of service, and sleep hygiene. RESULTS: Results: Apple Watch showed preliminary evidence of agreement with GENEActiv® for total sleep time, in-bed wake time, and sleep efficiency (ICC= 0.95, 0.72, and 0.69, respectively), with high wear compliance and minimal missing data, supporting feasibility for sleep monitoring. Mean total sleep time was 381 ± 55 min, and mean sleep efficiency was 94.8%. Shift nurses reported poorer sleep hygiene than non-shift nurses; however, shift work status was not independently associated with sleep outcomes after adjustment. Higher BMI was associated with shorter total sleep time (B = -3.76 minutes per kg/m², p = 0.01), reduced rapid eye movement sleep (B = -1.18 minutes, p = 0.03), shorter core sleep (B = -2.72 minutes, p = 0.02) and reduced time in bed (B = -4.05 minutes, p < 0.01). Age was negatively associated with deep sleep duration, with older age associated with less deep sleep (B = -1.00 minutes per year, p < 0.01). CONCLUSIONS: Conclusion: Apple Watch-based monitoring was feasible and showed preliminary agreement with actigraphy. Nurses obtained less sleep than recommended, and BMI and age were associated with sleep outcomes in exploratory analyses. These findings support larger studies and workplace strategies to improve sleep opportunity and healthy sleep behaviours. CLINICALTRIAL: Not applicable.

Lien vers l'article

Chronobiologie

Animal

Timing of feeding mitigates metabolic effects of circadian disruption.

Skinner NJ, Acosta-Rodríguez VA, Rijo-Ferreira F, Tups A, Takahashi JS. *NPJ Biol Timing Sleep*. 2026 Jul 27;3(1).

Disrupted light-dark cycles and mistimed feeding are recognized metabolic stressors. In this study, we investigated the independent and combined effects of a 12:12 light:dark cycle, advanced by 6 h every 6 days (Chronic Disruption; CD), and time-restricted feeding on the metabolic health of male C57BL/6J mice. Ad libitum mice under the CD cycle gained significantly more body weight and body fat compared to animals under a control light cycle (LD), despite similar caloric intake and wheel running activity. Using specialized equipment to dissociate light cues from nutrient access, we demonstrate that light-cycle disruption induces metabolic dysfunction specifically through fragmented and misaligned eating patterns. Crucially, restricting food access to a 12-h window synchronized with the shifting dark phase abrogated the weight gain and adiposity observed in the ad libitum group. Conversely, shifting the feeding window under a stable light cycle significantly reduced food intake and weight gain, revealing that feeding regularity is a primary determinant of energy balance independent of light-cycle stability. Overall, while the light-dark cycle is the dominant zeitgeber for activity, the temporal consolidation of food intake is the primary driver of metabolic alignment, offering a potential intervention for managing metabolic risk in shift workers.

Lien vers l'article

Simulated shift work Schedules disrupts circadian rhythms and behavior in mice.

Duan JY, Huang XT, Duan AY, Ma L, Chen W, Luo Q. *Function (Oxf)*. 2026 Jul 10.

Shift work has become a major cause of circadian rhythm disruption in modern society. This study investigated the systemic consequences of shift schedules by subjecting mice to different light-dark (LD) cycles: non-24-hour cycles (rapidly rotating Groups A and B) and 24-hour cycles (Group C and Control group). We performed behavioral tests, serum hormone measurements, transcriptomic analysis of SCN genes, and gut microbiome analysis. The results showed that the mice exhibited significant body weight gain after altering LD cycle compared with the control group. In groups exposed to non-24-hour cycles, the circadian expression rhythms of core clock genes (Per, Cry, Bmal1) in the SCN were lost. GO and KEGG enrichment analyses revealed that genes in the SCN losing rhythmicity were significantly enriched in metabolic and regulatory pathways, disrupting endocrine and metabolic rhythms and ultimately compromising health. The circadian rhythms of key hormones like melatonin (MT) and dopamine (DA) were also lost. Concurrently, these central disruptions drove peripheral pathology, including gut microbiota dysbiosis (altered Firmicutes/Bacteroidota ratio, reduced Verrucomicrobia) and a profound loss of gut microbial diurnal oscillations. Behaviorally, this multi-system discord manifested as significantly increased anxiety-like, depression-like behaviors and fatigue ($P<0.05$), while spatial memory remained intact, indicating selective affective vulnerability. SCN collapse together with hormonal chaos, desynchronizes the gut microbiome, potentially promoting inflammation and metabolic dysfunction that further disrupts central regulation. These findings provide a physiological foundation for understanding the health consequences of circadian disruption and may help guide the future design of healthier shift work schedules.

Lien vers l'article

Homme

Chronotype and its association with eating behaviour and psychosocial well-being in shift workers: A systematic review.

Franky Giltelin EN, Mohd Fahmi Teng NI, Isa SNI, Md Nor N, Maluin SM, Juliana N. *Chronobiol Int*. 2026 Jul 22:1–14.

Shift work is increasingly common in modern societies but is strongly associated with misalignments of natural circadian rhythms, which may negatively impact dietary behaviour and psychosocial well-being. Chronotype, an individual's natural sleep-wake preference, influences adaptation to shift work and its associated lifestyle challenges. This systematic review aimed to examine the relationship between chronotype on both eating behaviour and psychosocial well-being among shift workers. A systematic search was conducted in accordance with PRISMA 2020 guidelines. Literature searches were performed in Web of Science, Scopus, PubMed, and Cochrane from database inception until April 2026. Eligible studies included research involving adult shift workers reporting on chronotype in relation to eating behaviour and psychosocial aspects. Quality appraisal was performed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools. Twenty-nine studies met the inclusion criteria, comprising primarily nurses and healthcare workers, with additional representation from manufacturing and services sectors. Evening chronotypes consistently exhibited less healthy dietary habits, including irregular meal timing, skipping breakfast, delayed food intake, greater consumption of energy-dense foods, lower fibre intake, and higher alcohol use. Additionally, psychosocial outcomes showed similar patterns, with evening types reported significantly higher levels of depression, anxiety, stress, emotional exhaustion, and burnout compared to morning and intermediate types. Misalignment between chronotype and shift schedule further amplifies these effects, whereas alignment improved job satisfaction and well-being. Sleep disturbances, a contributing factor that can exacerbate psychosocial issues, were observed to be more common in evening types as compared to morning and intermediate types. Evening chronotype is a key vulnerability factor for both unhealthy eating habits and impaired psychosocial well-being among shift workers. Organisational strategies such as chronotype-sensitive scheduling, access to healthier food options, and tailored psychosocial support may mitigate these risks. Future longitudinal and interventional research is needed to establish causal pathways and to evaluate the effectiveness of chronotype-based workplace interventions.

Lien vers l'article

Circadian Disruption Exacerbates Innate Immune Responses by Modulating the Bistability of Pro-Inflammatory Signaling: A Dynamical Modeling Study.

Zhou Q, Ouyang Q, Wang H. *Biomedicines*. 2026 Jun 26;14(7).

Background/Objectives: Circadian disruption resulting from factors such as jet lag, shift work, or aging leads to exaggerated inflammatory responses and increased disease susceptibility. However, the core dynamical mechanism by which circadian disruption exacerbates innate immune responses remains poorly understood. Methods: We develop an integrated mathematical model coupling the mammalian circadian clock with antigen-induced innate immune responses, incorporating key regulatory interactions including glucocorticoid modulation and pro-inflammatory positive feedback loops. Results: The model successfully recapitulates experimental data regarding homeostatic immune circadian oscillations and time-dependent gating of acute inflammatory responses. Dynamic analyses reveal that the circadian clock exerts its gating function by modulating the bistable characteristics within pro-inflammatory positive feedback loops. Circadian disruption, simulated as jet lag or age-related reduction in clock gene amplitude, reshapes this bistable landscape and prolongs residence duration in the pathological hyperinflammatory state. Conclusions: This shift not only amplifies acute cytokine bursts but also sustains exaggerated inflammatory activity, providing a mechanistic

explanation for acute tissue injury and chronic low-grade inflammation (inflammaging) under these circadian disruption scenarios.

Lien vers l'article

Circadian rhythms and depression: A narrative review of human research.

Wu Q, Lei X. *Chronobiol Int*. 2026 Jul 26:1-23.

Depression is a serious mental and psychological disorder, characterized by a high incidence rate, high disability rate and high recurrence rate. It is a major problem that urgently needs to be solved in the field of global public health. Circadian rhythms regulate various physiological and behavioral processes in the human body. Previous studies have shown that there is a close connection between circadian rhythmicity and depression. Factors such as shift work, jet lag, social jet lag, chronotypes, and light at night exposure are all related to the occurrence and development of depression. An in-depth exploration of the neural mechanisms related to circadian rhythms and depression can help us better understand the relationship between the two. At present, non-pharmacological intervention methods based on circadian rhythm regulation, such as light therapy, sleep deprivation and cognitive behavioral therapy for insomnia have demonstrated clinical value in improving depression. Future research can also focus on the in-depth application of wearable devices, explore diverse and precise intervention methods, conduct in-depth longitudinal studies, and use various brain imaging devices to explore neural mechanisms, etc. providing theoretical basis and practical directions for the early prevention, precise diagnosis and personalized treatment of depression.

Lien vers l'article

Impact of light on the human body with particular emphasis on women's reproductive health.

Tadros-Zins M, Krekora M, Zych-Krekora K. *Ginekol Pol*. 2026;97(6):504-9.

Light exposure plays a fundamental role in human physiology, influencing circadian rhythms, hormonal regulation, and reproductive health. This review examines the multifaceted impact of natural and artificial light on women's reproductive function, with particular emphasis on mechanisms underlying light-mediated biological processes. Evidence demonstrates that light exposure affects melatonin secretion, which in turn modulates reproductive hormones including luteinizing hormone, follicle-stimulating hormone, and sex steroids. Disruption of natural light-dark cycles through shift work, artificial light at night, or circadian misalignment has been associated with menstrual irregularities, ovulatory dysfunction, reduced fertility, and adverse pregnancy outcomes. Conversely, adequate vitamin D synthesis through ultraviolet light exposure supports ovarian function and metabolic health. Recent studies reveal that continuous light exposure can induce anovulation through disruption of the leucine-mTOR-autophagy axis, while circadian rhythm disturbances correlate with polycystic ovary syndrome. This article synthesizes current knowledge on photobiological mechanisms, clinical implications, and therapeutic applications of light modulation in gynecological practice.

Lien vers l'article

Metabolome-microbiome convergence under circadian disruption accelerates mammary tumorigenesis: multi-omics integration insights.

Sarkar M, Ogunlusi O, Stewart T, Muller E, Seeley EH, Sarkar TR. *BMC Cancer*. 2026 Jul 17.

Circadian rhythm disruption (CRD), common in shift work and jet lag, promotes mammary tumorigenesis through coordinated reprogramming of tumor metabolism and the local microbiome. CRD increased immunosuppressive metabolites - kynurenic acid, spermidine, and argininosuccinic acid - that suppressed effector T-cell activity and drove macrophage polarization toward anti-inflammatory

phenotypes. 16S rRNA sequencing revealed enrichment of immune-modulatory Firmicutes and Bacilli within CRD tumors. Experimental and multi-omics integrative analyses strongly support metabolome-microbiome crosstalk driving immune suppression under CRD. Inhibition of arginase-1 (ARG1) with nor-NOHA restored cytotoxic T-cell responses and reduced lung metastases. These findings establish metabolome-microbiome interactions as a central mechanism of CRD-induced immunosuppression and metastasis, revealing potential therapeutic targets for circadian disruption-associated breast cancer.

Lien vers l'article

EEG brain network analysis of mind-wandering characteristics and its modulation by shift work in high-risk industries.

Xin Q, Hao S, Hongbin C, Xiaoqin W, Jian W, Lu L, et al. *Cogn Neurodyn*. 2026 Dec;20(1):131.

Mind-wandering (MW), a form of attentional disengagement during operational tasks, has emerged as a critical cognitive risk factor for unsafe behavior in high-risk industries. Moreover, the disruption of circadian rhythms induced by shift work further amplifies the risks associated with MW in operational contexts. However, existing research has largely relied on short duration experiments conducted under controlled laboratory conditions, leaving the neural mechanisms of MW in authentic high risk operational contexts insufficiently understood. Even fewer studies have empirically examined how shift work influences MW from the perspective of brain network organization. In response to this research gap, the present study employs Lab-in-the-Field experiments to analyze the brain network characteristics of workers in high-risk industries, aiming to elucidate the potential mechanisms by which MW and shift work jointly impact operational safety. The results demonstrated that MW significantly prolonged response times, and that shift work further exacerbated this negative effect. EEG based brain network analysis further showed that MW was accompanied by changes in brain network resource allocation, with a particularly evident decline in hub efficiency in the left prefrontal cortex. Moreover, shift work was found to affect cognitive states predominantly by altering the structural topology of brain networks, rather than by simply modulating the overall strength of functional connectivity. This study validates the brain network reorganization underlying MW and provides scientific evidence for developing cognitive state monitoring tools and targeted intervention strategies based on brain network topological features.

Lien vers l'article

Body mass index links night work intensity with higher low-grade systemic inflammation: results from a field study in humans.

Nabe-Nielsen K, Papantoniou K, Arup A, Sallerup M, Nielsen HB, Schlünssen V, et al. *Int Arch Occup Environ Health*. 2026 Jul 14;99(6).

OBJECTIVE: To examine effects of night work on low-grade systemic inflammation, measured as high-sensitivity C-reactive protein (hsCRP concentration), in hospital-employed women. METHODS: We analyzed baseline data from 929 women in the 1001 nights-cohort. Seven self-reported metrics captured night work history (never, past, current), night work duration (years) and recency (time since last night shift), current schedule (e.g., permanent night or 2- or 3-shift work), and intensity (number of weekly and consecutive night shifts, and night shifts in the past six days). We measured hsCRP concentration in blood. Associations between night work and log-transformed hsCRP concentration were estimated using generalized linear models: Model 1 adjusted for age and education; Model 2 additionally for body mass index (BMI), blood pressure, and health behaviors; Model 3 further for sleep duration and quality. RESULTS: Permanent night workers had a 49% higher hsCRP concentration than permanent day workers (estimate = 1.49; 95% CI: 1.07-2.10). In night shift workers, working ≥ 3 night shifts per week or ≥ 3 consecutive night shifts were associated with 36-53% higher hsCRP

concentration compared with one weekly night shift or only single-night shifts. These associations were attenuated and became non-significant after adjustment for cardiometabolic risk factors. Additional analyses revealed that BMI largely attenuated the associations between night work intensity and hsCRP concentration. No associations were observed for other night work metrics. CONCLUSION: Permanent night work and higher night work intensity were associated with higher hsCRP concentration, with differences largely explained by BMI. Reducing night work intensity and targeting modifiable factors related to BMI may help reduce low-grade systemic inflammation among night workers.

Lien vers l'article

Chronodisruption as an Emerging Determinant of Weight Loss Trajectories after Metabolic Bariatric Surgery: A Scoping Review.

Pantelis AG, Pafili Z, Tseliou V, Dimitrakopoulou E, Moysidis M, Lapatsanis DP. *Obes Surg*. 2026 Jul 29.

Chronodisruption, i.e. the misalignment between endogenous circadian rhythms and behavioral or environmental cues, is an underrecognized determinant of weight outcomes following metabolic bariatric surgery (MBS). This scoping review synthesizes evidence from 18 primary human studies examining associations of chronodisruption with post-bariatric weight outcomes across six domains: sleep quality and timing, chronotype, social jetlag, chrononutrition, shift work, and seasonality. There is preliminary evidence that late bedtime, poor sleep quality, evening chronotype, high social jetlag, late meal timing, and shift work are each associated with suboptimal clinical response or accelerated recurrent weight gain, though most included studies did not adjust for key confounders including surgical type, caloric intake, and depression. Surgery does not appear to correct the underlying circadian misalignment. Light at night remains entirely unexamined in post-MBS populations despite robust population-level evidence linking it to obesity risk. Prospective evaluation of chronobiological profiling as a component of multidisciplinary bariatric evaluation is warranted, but current evidence remains insufficient to support its routine clinical adoption.

Lien vers l'article

Chrononutrition, Circadian Rhythms, and Genetic Susceptibility in Noncommunicable Diseases: Sex-Specific Perspective.

Minari TP, Vilela-Martin JF, Pisani LP. *Nutr Rev*. 2026 Jul 29.

Obesity, diabetes, and hypertension are major global health burdens influenced not only by lifestyle factors but also by genetic predisposition, sleep quality, chrononutrition, and circadian rhythms. This review examined how these factors interact in metabolic and cardiovascular diseases, with emphasis on sex-specific differences. A narrative review was conducted using PubMed, Scopus, and Web of Science databases for studies published between 2006 and 2026. A total of 112 studies were synthesized, including randomized trials, observational studies, systematic reviews, meta-analyses, Mendelian randomization, and mechanistic investigations. Evidence indicates that genetic susceptibility and circadian disruption contribute significantly to obesity, diabetes, and hypertension. Sleep deprivation, obstructive sleep apnea, and circadian misalignment were consistently associated with insulin resistance, appetite dysregulation, elevated blood pressure, and increased cardiometabolic risk, particularly among shift workers. Hormonal and metabolic pathways involving leptin, ghrelin, cortisol, and melatonin appear to mediate these effects. Important sex differences were observed, with women showing greater vulnerability to sleep-related appetite disturbances and men presenting a higher prevalence of visceral adiposity, sleep apnea, and hypertension. Chrononutrition strategies, including time-restricted eating and Mediterranean dietary patterns, showed beneficial effects on sleep quality, glycemic control, inflammation, and metabolic health. Emerging evidence also suggests bidirectional interactions between gut microbiota rhythmicity and circadian regulation.

Genetic predisposition, sleep disturbances, and circadian disruption interact to influence metabolic and cardiovascular disease risk. Integrative approaches combining chrononutrition, sleep hygiene, circadian alignment, and personalized nutritional strategies may improve the prevention and management of cardiometabolic diseases.

Lien vers l'article

Association between circadian rhythm disturbances and cognitive decline in the elderly: a systematic review.

Lopes LG, Oliveira AS, Fingergut CC, Brito GNE, Gonzalez JVP, Donato KO, et al. *Neurol Sci*. 2026 Jul 16;47(8).

BACKGROUND: Circadian rhythm dysregulation may contribute to sleep-wake disorders and cognitive impairment. In the elderly, circadian abnormalities have been observed in Mild Cognitive Impairment (MCI), suggesting a possible association between neurocognitive deficits and circadian dysfunctions. OBJECTIVE: To analyze the association between circadian rhythm disturbances and cognitive decline in the population aged ≥ 60 years. METHODS: This systematic review included studies evaluating the association between circadian rhythm disturbances and cognitive decline in elderly individuals aged 60 years or older, with self-reported or objectively measured sleep data and cognitive assessment via questionnaires. Studies tracking progression from MCI to Alzheimer's disease (AD) were retained, as they capture circadian changes across the MCI-to-dementia continuum. Studies that evaluated other sleep disorders and/or other conditions of cognitive impairment exclusively or that did not specify the mean age of the participants were excluded. RESULTS: Ten studies were included, totaling 5,731 participants (5,707 eligible for analysis). Circadian exposures were organized into three domains: (1) actigraphic rest-activity rhythm metrics (amplitude, robustness, interdaily stability, intradaily variability, and acrophase); (2) sleep quality and architecture parameters (efficiency, fragmentation, latency, WASO, and melatonin timing); and (3) circadian-disrupting lifestyle exposures (rotating night shift work). Across these domains, circadian dysregulation was consistently associated with a higher risk of development or progression of MCI and dementia. CONCLUSION: Circadian and sleep disturbances negatively impact cognitive health in the elderly, reinforcing the need for further research on this association and its public health implications.

Lien vers l'article

PER1-related inflammatory signaling links night shift exposure to lower lung function in coal miners.

Liu Z, Pan H, Cui F, Yang Q, Yu Z, Chen J, et al. *iScience*. 2026 Aug 21;29(8):116919.

Cumulative night-shift exposure may disrupt circadian homeostasis and adversely relate to respiratory health. In a cross-sectional analysis of 9,464 coal miners, we found that greater cumulative night-shift exposure was associated with lower lung function after accounting for cumulative respirable dust exposure. Mendelian randomization analyses supported a potential causal link between shift work and reduced lung function and further indicated that genetically predicted lower lung function was associated with higher chronic obstructive pulmonary disease (COPD) risk. In a coal miner subgroup, lower PER1 expression partly accounted for the associations of cumulative night-shift exposure with forced expiratory volume in one second (FEV1) and forced vital capacity (FVC). Public transcriptomic and single-cell analyses showed lower PER1 expression in COPD and lung cancer-related datasets and suggested links to NF-κB-related inflammatory signaling. These findings suggest that PER1-related inflammatory signaling may represent a candidate molecular link between occupational circadian disruption and respiratory health impairment.

Lien vers l'article

Nutritional adaptation to circadian misalignment: implications for musculoskeletal health in modern lifestyles.

Liu H, Xin Y. *Front Nutr*. 2026;13:1833858.

Circadian rhythms regulate metabolic, endocrine, and cellular processes essential for maintaining musculoskeletal health. Accumulating experimental and epidemiological evidence indicates that circadian disruption, driven by modern lifestyle factors such as shift work, sleep restriction, and irregular eating patterns, is associated with an increased risk of musculoskeletal disorders. This narrative review summarizes current evidence linking circadian misalignment to alterations in bone, skeletal muscle, and cartilage biology. At the mechanistic level, disruption of core clock gene expression and desynchronization between central and peripheral clocks lead to hormonal imbalance, metabolic dysfunction, and chronic low-grade inflammation. These pathways are associated with bone loss, impaired muscle protein synthesis, and accelerated cartilage degeneration. Findings from both animal and human studies support associations with osteoporosis, sarcopenia, and osteoarthritis. Chrononutrition has emerged as a potential strategy to mitigate these effects. Approaches such as time-restricted eating, alignment of food intake with the biological day, and optimized protein distribution may help restore circadian alignment and improve musculoskeletal outcomes. In conclusion, integrating circadian biology with nutritional timing provides a promising framework for the prevention and management of musculoskeletal disorders, although large-scale human interventional trials with validated clinical endpoints are needed to confirm benefit.

Lien vers l'article

Internal Circadian Misalignment of the Human Metabolome Links Night Shiftwork to Metabolic Impairment.

Kubicki M, McHill AW, Melanson EL, Reisdorph N, Wright KP, Jr., Depner CM. *J Biol Rhythms*. 2026 Jul 13:7487304261459478.

Circadian misalignment, as experienced during shiftwork, impairs glucose metabolism and body weight regulation, yet the underlying biochemical mechanisms remain incompletely understood. Characterizing how circadian misalignment alters circulating metabolites provides a promising avenue to help identify these mechanisms. Although data from metabolomics studies have identified circulating metabolites with daily rhythms, it is not comprehensively known which rhythms shift during circadian misalignment and whether such shifts relate to metabolic impairment. We conducted 24-hour (h) metabolomic profiling every 4 h in 14 healthy adults (8 women) aged 26.4 ± 1.2 years (mean ± SD), undergoing a 6-day simulated night-shiftwork protocol. 24-h modeling analyses identified metabolite rhythms influenced by circadian versus behavioral cycles (sleep, food intake) and quantified internal circadian misalignment using acrophase shifts. Metabolic outcomes included glucose homeostasis (test meals) and energy expenditure (EE; whole-room calorimetry). Night-shiftwork produced widespread alterations in metabolite rhythms, with significant internal misalignment in multiple metabolites across pathways including pyrimidine metabolism, bile acid-microbiome signaling, and lipid metabolism. During misalignment, glucose and insulin area under the curve increased ($p < 0.05$) and EE decreased ($p < 0.05$). Internal misalignment of uridine and glycoursodeoxycholic acid was associated ($p < 0.05$) with impaired glucose tolerance, while their circulating concentrations were associated with decreased EE. Misalignment of uridine and glycoursodeoxycholic acid suggests dysregulated pyrimidine and bile acid-microbiome pathways as potential mechanisms linking circadian misalignment to cardiometabolic disease risk.

Lien vers l'article

Evaluation of the Effectiveness of Chrononutrition Education Provided to Neonatal Nurses.

Kabakci Saridağ KN, Kiliçarslan E. *Adv Neonatal Care*. 2026 Jul 21.

BACKGROUND: Chrononutrition refers to aligning nutrient intake with biological rhythms, and human milk demonstrates natural circadian variation. In neonatal intensive care units (NICUs), infants often receive expressed milk, and mismatches between expression and feeding times may affect the development of infants' circadian rhythms. Nurses can play a critical role in maintaining this alignment through proper labeling, storage, and preparation. PURPOSE: This study purposed to evaluate the effectiveness of the "Chrononutritional Properties of Human Milk" training program on NICU nurses' adherence to time-appropriate expressed milk preparation. METHODS: This quasi-experimental study with a pretest-posttest design included 15 NICU nurses in Türkiye. Data were collected using a Descriptive Characteristics Form and a Chrononutrition Monitoring Form. The training consisted of 6 sessions (2 online and 4 face-to-face) delivered over a 5-month period. Following the intervention, nurses' milk preparation practices were observed for an additional 5 months. Descriptive statistics and Chi-square tests were used for analysis, with significance set at $P < .05$. RESULTS: Before the training, 1232 milk preparation procedures were observed, and 55.7% were chrononutritionally appropriate. After the training, 1240 procedures were recorded, and 66.5% were appropriate, representing a significant overall improvement ($\chi 2 = 30.619$; $P = .001$). Day-shift nurses demonstrated significant improvement ($P = .001$), whereas no significant change was observed during night shifts ($P = .452$). IMPLICATIONS FOR PRACTICE AND RESEARCH: The training improved adherence to chrononutrition-based milk preparation. Incorporating chrononutrition principles into routine NICU education may strengthen developmental care. Future studies with larger, multicenter samples are needed to confirm these results.

Lien vers l'article

Circadian Disruption in Nurses Working Night Shift: What We Know, What We Miss.

Guha A, Hittle BM. *Workplace Health Saf*. 2026 Sep;74(9):505.

Lien vers l'article

Meal Timing Jetlag is associated with anxiety, depressive and insomnia symptoms in a French-speaking online cohort: A cross-sectional analysis of ALIMENTAL 2.

Fond G, Coelho J, Stubbs B, Yon DK, Achour Y, Akbaraly T, et al. *J Affect Disord*. 2026 Nov 15;413:122229.

BACKGROUND: Chrono-nutrition - when, not only what, one eats relative to circadian timing - is an emerging determinant of mental health. We tested whether Meal Timing Jetlag (MTJL), the workday-to-free-day discordance in eating schedules, is associated with anxiety (primary outcome) and with depressive and insomnia symptoms (secondary), independently of sleep-based circadian misalignment. METHODS: Cross-sectional analysis of the ALIMENTAL 2 French-speaking online cohort ($n = 2945$). Sleep timing was assessed with the Munich Chronotype Questionnaire and meal timing with a Food Timing Screener. Outcomes were the GAD-7 (anxiety), CES-D (depression) and ISI (insomnia). Multivariable models adjusted for age, sex, BMI, unemployment, financial difficulty and shift work, with dose-response, logistic and BMI-stratified sensitivity analyses. RESULTS: In the primary model ($n = 2817$), MTJL was independently associated with anxiety ($\beta = +0.47$/h, 95% CI [0.14, 0.79], $p = 0.005$). The relationship was J-shaped (non-linearity $p = 0.020$; slope above 1 h + 1.03/h, $p < 0.001$). MTJL was also associated with depressive symptoms ($\beta = +1.81$, 95% CI [1.00, 2.61], $p < 0.001$) and insomnia severity ($\beta = +0.90$, 95% CI [0.47, 1.33], $p < 0.001$). Sleep-based circadian phase and sleep social jetlag were not. The per-hour anxiety effect is modest (≈12% of the GAD-7 minimal clinically important difference). LIMITATIONS: The cross-sectional design cannot establish causality; reverse

causation cannot be excluded. The cohort was online and 80% female, limiting generalisability. CONCLUSIONS: Meal-timing regularity may be a candidate behavioural correlate of anxiety, depression and insomnia, warranting longitudinal and interventional confirmation before any clinical recommendation.

Lien vers l'article

Sleep and aging: The role of DNA methylation.

Davinelli S, Scapagnini G, Medoro A. *Exp Gerontol*. 2026 Sep;222:113205.

Although its evolutionary origins remain poorly understood, sleep is a highly conserved physiological process crucial to animal life and widely recognized as a major determinant of human healthspan. Sleep disturbances are a major public health concern, particularly among older adults, contributing to impaired cognitive function, chronic disease risk, and reduced quality of life. Age-related sleep disturbances are associated with epigenetic changes, especially altered DNA methylation patterns within genes and regulatory regions involved in circadian rhythms, neuroplasticity, metabolism, and inflammation. Over the past decade, epigenetic clocks, which measure DNA methylation patterns at specific CpG sites, have been used to estimate chronological age, assess biological aging, and predict health outcomes and mortality risk. Using epigenetic clocks and genome-wide methylation studies, emerging evidence has linked sleep disturbances and sleep-disrupting conditions, such as insomnia, obstructive sleep apnea, and shift work, to accelerated biological aging. Sleep-related changes in DNA methylation contribute to epigenetic age acceleration by influencing key aging processes, including inflammation, oxidative stress, telomere maintenance, lipid metabolism, and immune function. However, these methylation alterations might be, at least in part, reversible, highlighting opportunities to develop interventions that improve sleep disturbances and slow biological aging.

Lien vers l'article

Can Disruption of Circadian Rhythms Be Linked to Radiation-Induced Acute Myeloid Leukaemia?

Czyzak A, O'Brien G, Lopez-Riego M, Cruz-Garcia L, Badie C. *Cancers (Basel)*. 2026 Jul 14;18(14).

Acute myeloid leukaemia (AML) remains a highly lethal malignancy with poor prognosis in adults above 60 years old and often occurs after radiation exposure. Emerging evidence suggests that circadian rhythm disruption, prevalent in shift workers, may contribute to cancer development. Clock genes (CGs) regulate fundamental cellular processes, including the DNA damage response (DDR), cell cycle progression, and haematopoiesis. In the absence of substantial experimental data, this review examines the potential pathways linking circadian clock dysregulation to radiation-induced AML (rAML) and evaluates how temporal disruption may modulate leukaemogenesis and radiation-induced effects. The evidence was synthesised on core clock components (BMAL1, CLOCK, PER, CRY, REV-ERB, ROR), their dysregulation in AML, and their roles in radiation response. Epigenetic and post-transcriptional regulatory mechanisms, including m(6)A RNA modification and sirtuin-mediated chromatin remodelling, were evaluated for their contribution to circadian-regulated DNA repair capacity. Multiple CGs demonstrated aberrant expression in AML, with BMAL1 showing tissue-specific dysregulation, and PER1/2/3 was consistently downregulated in peripheral blood. Clock proteins directly regulate DNA damage checkpoints through interactions with ATM/CHK2 and p53 pathways. Circadian disruption enhances inflammatory signalling, promotes accumulation of myeloid-derived suppressor cells, and accelerates immune senescence. Moreover, radiation exposure modulates CG expression, which may alter repair fidelity and increase leukaemogenic risk. Understanding these connections in the context of disrupted circadian rhythms could help identify at-risk populations and improve shift workplace health policies.

Lien vers l'article

The Circadian-Light-Hygiene Hypothesis: A Potential Modulator of Fertility and Birthrate Trends.

Gubin D, Stefani O, Cornelissen G, Touitou Y. *Biology (Basel)*. 2026 Jun 26;15(13).

Human fertility has declined sharply since 1950, and a growing body of evidence suggests that while conventional socioeconomic factors are well-established drivers of the broader demographic transition, they do not fully account for the timing and breadth of this trend. This review examines the Circadian-Light-Hygiene hypothesis, which proposes that daily light exposure is a fundamental regulator of reproductive health. We synthesize findings from photobiology, endocrinology, reproductive medicine, and epidemiology to evaluate how artificial light at night, insufficient daytime light, and irregular light-dark patterns may disrupt the hormonal timing systems that support reproduction. The available evidence indicates that such disruption can alter melatonin signaling, circadian gene regulation, and neuroendocrine rhythms, with downstream effects on ovulation, sperm quality, endometriosis, polycystic ovary syndrome, pregnancy outcomes, and developmental programming. Urbanization, screen use, and shift work appear to amplify these effects, while genetic variation may modify individual susceptibility. Although direct causal evidence in humans remains limited for several endpoints, the convergence of observational, experimental, and translational data supports circadian-light misalignment as a plausible, additional modulator of fertility decline, and a potentially modifiable contributor. Optimizing daily light exposure may therefore represent a low-cost and scalable strategy for improving reproductive health.

Lien vers l'article

"More Kairos, Less Chronos": Sleep, circadian rhythms and the path to cardiovascular, neurological and metabolic protection.

Calcaterra G, Akurati S, Punjabi N, Iacobellis G, Varghese RT. *Diabetes Res Clin Pract*. 2026 Aug;238:113387.

Sleep supports cardiovascular, metabolic, neurologic, and psychological health. Beyond duration, circadian alignment is crucial because regular sleep, light exposure, feeding, and activity synchronize central and peripheral clocks. Modern chronodisruption from artificial light, irregular schedules, shift work, late eating, and insufficient sleep misaligns these rhythms and increases chronic disease risk. This review summarizes evidence linking sleep and circadian disruption to cardiovascular disease, metabolic dysfunction, and neurodegeneration. The American Heart Association's Life's Essential 8 recognizes sleep as a core cardiovascular health metric, reflecting evidence that sleep duration, timing, regularity, and quality add predictive value beyond traditional risk factors. We also review data from cohorts, proteomics, wearables, and artificial intelligence showing that objective sleep traits can predict cardiometabolic and neurologic outcomes. Both short and long sleep duration are associated with adverse metabolic outcomes, likely through partly distinct mechanisms. Finally, we discuss clinical implications, including light hygiene, meal timing, sleep disorder treatment, sleep metrics for early risk detection, and links between circadian disruption, gut microbiota metabolic reprogramming, clock-gene regulation, and diet-based strategies targeting gut-liver and metabolic pathways.

Lien vers l'article

Circadian Rhythms in Dermatology: Mechanisms, Clinical Implications, and Chronotherapy Opportunities.

Bozkurt F. *Adv Skin Wound Care*. 2026 Jul 20.

OBJECTIVE: Circadian rhythms regulate key cutaneous processes including DNA repair, keratinocyte proliferation, wound healing, and immune responses. Disruption of circadian timing contributes to photoaging, inflammatory dermatoses, nocturnal pruritus, and carcinogenesis. This review synthesizes

current evidence and highlights translational opportunities, aiming to bridge molecular insights with clinical dermatology. DATA SOURCES: A literature search was conducted in PubMed, Scopus, and Web of Science from January 1990 to March 2025 using terms such as "circadian rhythm," "clock genes," "chronotherapy," "skin," "dermatology," "photoaging," "melatonin," "vitamin D," "psoriasis," "pruritus," and "skin cancer." STUDY SELECTION: Of 360 records identified, 101 unique publications remained after duplicate removal. Fifty-two were excluded after abstract review. Forty-nine full texts were assessed, and 39 met the inclusion criteria. DATA EXTRACTION: Studies relevant to circadian regulation of skin physiology, dermatologic conditions, and therapeutic implications were included. Human, animal, and in vitro studies were analyzed, with emphasis on translational findings. DATA SYNTHESIS: Circadian genes (CLOCK, BMAL1, PER, CRY) regulate epidermal renewal, pigmentation, and repair. DNA repair peaks during the active phase, whereas ultraviolet exposure in the rest phase increases mutagenesis. Melatonin and vitamin D metabolites enhance photoprotection and regeneration. Clinical conditions, including psoriasis, nocturnal itch, and skin cancer, are influenced by circadian misalignment, especially in shift workers. Preliminary evidence suggests that aligning therapies with circadian timing may improve efficacy and reduce toxicity. CONCLUSIONS: Circadian biology provides a unifying framework for skin physiology and disease. Chronotherapy and biomarker-guided approaches represent promising strategies, but translation into practice requires validation in large, well-designed trials.

Lien vers l'article

Population-scale molecular reconstruction of human circadian phase from blood biomarkers.

Albiñana C, Richmond R, Wang B, Urpa L, Crouse JJ, Zeng Y, et al. *medRxiv*. 2026 Jul 13.

Circadian timing influences human physiology and disease risk, yet scalable measures of molecular circadian phase are lacking. Here we infer circadian phase from circulating blood biomarkers in UK Biobank. Among 3,228 plasma biomarkers, 58% exhibit significant diurnal variation, with harmonic modeling identifying acrophase clustering consistent with canonical circadian patterns and independent constant-routine datasets. Machine-learning models trained on plasma proteomics predict sampling time ($R^2 \approx 0.68$) and retain substantial accuracy with ~60 proteins. We define a novel construct, circadian acceleration (CA), as deviation from the population-average phase; CA is temporally stable, associates with chronotype and shift work, and responds to environmental perturbation. CA is heritable (h^2 (SNP) ≈0.10) and genetically correlated with chronotype and accelerometry-derived sleep traits. These results establish plasma proteomics as a scalable approach for population-level molecular circadian phenotyping.

Lien vers l'article

The Gastro-Circadian Metabolic Axis: A Comprehensive Framework for Chronotherapy in Gastroenterology.

Alkhaldi M, Vicente AF, Fansey V, Salins RM, Mahmoo A, Alamgir M, et al. *Cureus*. 2026 Jun;18(6):e110724.

Circadian rhythms exert fundamental control over gastrointestinal and metabolic physiology, governing 24-hour patterns of motility, secretion, nutrient absorption, microbial activity, immune regulation, and hepatic metabolism. Accumulating evidence indicates that the gastrointestinal tract is not an isolated system but is tightly integrated with systemic metabolic and neuroendocrine networks, forming a coordinated gastro-circadian metabolic axis (GCMA). This axis links molecular clocks in the gut, liver, adipose tissue, and skeletal muscle with rhythmic inputs from the gut microbiome, feeding-fasting cycles, autonomic signaling, and enteroendocrine mediators. Disruption of circadian alignment, through shift work, sleep deprivation, irregular meal timing, or nocturnal light exposure, leads to desynchronization between central and peripheral clocks, promoting inflammation, impaired

epithelial barrier function, dysbiosis, altered bile acid signaling, insulin resistance, and disturbed energy homeostasis. These mechanisms contribute to a wide spectrum of gastrointestinal disorders, including gastroesophageal reflux disease, functional dyspepsia, irritable bowel syndrome, metabolic dysfunction-associated steatotic liver disease, inflammatory bowel disease, and potentially gastrointestinal malignancies. This review synthesizes molecular, translational, and clinical evidence to position the GCMA as a unifying framework for understanding circadian influences on digestive and metabolic disease. Importantly, it highlights emerging therapeutic opportunities in chronotherapy, including time-optimized pharmacotherapy, chrononutrition, and microbiota-targeted interventions. While current translation is limited by interindividual chronotype variability and heterogeneous clinical evidence, advances in wearable circadian monitoring, multi-omics profiling, and computational modeling offer promising avenues for precision implementation. Integrating GCMA principles into clinical practice may improve disease outcomes and establish circadian alignment as a cornerstone of preventive and therapeutic gastroenterology.

Lien vers l'article

Conduites addictives

The association between night shift work and elevated risk of smoking use among ride-hailing drivers: findings from a cross-sectional study.

Yan T, Su J, Hu B, Song X, Wang Z, Wang S, et al. *Front Public Health*. 2026;14:1739252.

BACKGROUND AND OBJECTIVES: Night shift work is linked to smoking in traditional occupations, while the association with substance use among ride-hailing drivers is unknown. This study examined the associations of night shift work with tobacco and alcohol use behaviors among ride-hailing drivers in China, a vulnerable and understudied occupational group. METHODS: A cross-sectional study for ride-hailing drivers in Beijing, China (PWS study), was conducted and assessed night shift, smoking and drinking habits via structured questionnaires. Heavy smokers and high intensity drinking workers were further identified based on established standards. Multivariable logistic regression models were performed and adjusted for sociodemographic and occupational covariates (sex, age, income, etc.) to evaluate the associations of night shift work with tobacco and alcohol consumption habits. RESULTS: Among 858 ride-hailing drivers, 23% worked night shift. Night shift workers exhibited significantly higher smoking prevalence (59.4% vs. 47.7%) and higher smoking index (0 vs. 140), compared with day shift workers. In the logistic regression model, night shift workers had significantly higher odds of being a smoker [(OR = 1.595 (95% CI, 1.108-2.307)], and a heavy smoker (smoking index ≥ 400; OR = 1.682, 95% CI: 1.002-2.824) compared with day shift workers. The study found no link between alcohol consumption and night shifts among ride-hailing drivers. CONCLUSION: The high smoking prevalence among ride-hailing drivers, further elevated by night shift work, highlights the urgent need for targeted interventions in China's platform economy.

Lien vers l'article

Sleep and Substance Use Among Firefighters: Associations with Alcohol, Caffeine, and Nicotine Use.

Reichenberger DA, Lee LJ, Hebl J, Ayeni AO, Robinson Ii LD, Watkins SL, et al. *Nat Sci Sleep*. 2026;18:605149.

PURPOSE: Firefighters are at high risk for sleep disruption due to shift work. Use of alcohol, caffeine, and nicotine can also affect sleep. Thus, we evaluated daily, bidirectional associations between substance use and actigraphy-assessed sleep among firefighters. PATIENTS AND METHODS: Micro-longitudinal data were drawn from 120 firefighters participating in the Shiftwork in Firefighters (SWIFT) Study. Participants completed surveys on daily alcohol and caffeine use, current and lifetime tobacco use, and wore actigraphy devices to assess sleep timing, duration, and quality (2,617 observations). Multilevel models were used to examine both between- and within-person associations between substance use and subsequent sleep, and between sleep and next-day substance use. Models were adjusted for covariates (shift schedule, on-shift status, nighttime call volume, and naps). RESULTS: Alcohol use demonstrated strong bidirectional associations with sleep. Greater within-person alcohol consumption predicted shorter sleep and earlier waketimes, while later sleep timing and shorter sleep predicted greater next-day alcohol use. Unexpectedly, greater caffeine consumption was associated with higher sleep efficiency and fewer nighttime awakenings at the between-person level and longer total sleep time at the within-person level. Current between-person use of smokeless tobacco was associated with approximately 30 minutes shorter total sleep time, whereas lifetime cigarette use showed no association with sleep outcomes. CONCLUSION: Substance use among firefighters exhibited substance-specific and temporally dynamic relationships with sleep. Nicotine and caffeine effects were largely person-dependent, whereas daily alcohol showed consistent bidirectional effects on sleep. These findings highlight potential intervention targets aimed at improving sleep and reducing alcohol-related risk among firefighters.

Lien vers l'article

Reproduction

Workplace lactation support, policy awareness, and breastfeeding outcomes among clean room employees in Taiwan's electronics industry - A cross-sectional study.

Tsai SY. *Afr J Reprod Health*. 2026 Jul 15;30(13).

While breastfeeding-friendly policies aim to support employed mothers, limited research has examined how specific work environments, such as clean rooms, affect breastfeeding behavior. This study examined how clean room work affects breastfeeding behavior among 608 employed mothers in a Taiwanese electronics company. Data were collected on demographic and employment characteristics, breastfeeding behavior, awareness and use of lactation rooms, and perceptions of breastfeeding-related policies and support. Despite access to certified lactation rooms, clean room workers had lower breastfeeding continuation rates, less awareness and use of policies and facilities, and perceived less workplace support. Mothers in clean rooms with shift work had the highest breastfeeding discontinuation rate and lowest continued breastfeeding beyond six months. Regression analysis showed clean room work was linked to early breastfeeding cessation and reduced policy engagement. Findings suggest that beyond providing facilities, workplaces must address structural and social barriers in controlled environments to better support breastfeeding mothers.

Lien vers l'article

The Circadian-Light-Hygiene Hypothesis: A Potential Modulator of Fertility and Birthrate Trends.

Gubin D, Stefani O, Cornelissen G, Touitou Y. *Biology (Basel)*. 2026 Jun 26;15(13).

Human fertility has declined sharply since 1950, and a growing body of evidence suggests that while conventional socioeconomic factors are well-established drivers of the broader demographic transition, they do not fully account for the timing and breadth of this trend. This review examines the Circadian-Light-Hygiene hypothesis, which proposes that daily light exposure is a fundamental regulator of reproductive health. We synthesize findings from photobiology, endocrinology, reproductive medicine, and epidemiology to evaluate how artificial light at night, insufficient daytime light, and irregular light-dark patterns may disrupt the hormonal timing systems that support reproduction. The available evidence indicates that such disruption can alter melatonin signaling, circadian gene regulation, and neuroendocrine rhythms, with downstream effects on ovulation, sperm quality, endometriosis, polycystic ovary syndrome, pregnancy outcomes, and developmental programming. Urbanization, screen use, and shift work appear to amplify these effects, while genetic variation may modify individual susceptibility. Although direct causal evidence in humans remains limited for several endpoints, the convergence of observational, experimental, and translational data supports circadian-light misalignment as a plausible, additional modulator of fertility decline, and a potentially modifiable contributor. Optimizing daily light exposure may therefore represent a low-cost and scalable strategy for improving reproductive health.

Lien vers l'article

Associations between shift work, sleep quality and menstrual disorders among nurses: a cross-sectional analysis study.

Tang Y, Zhang M, Xu W, Deng Y, Hu F, Liu S, et al. *BMC Nurs*. 2026 Jul 16.

OBJECTIVES: This study aimed to examine the associations between shift work and menstrual disorders among female nurses and to explore the potential mediating role of sleep quality in these relationships. METHODS: A cross-sectional study was conducted using data from the Nurses' Environmental & Occupational exposure and health Nexus cohort (NEON). A total of 3,544 female nurses from six hospitals in Anhui Province, China, were included. Information on shift work

characteristics, sleep quality, and menstrual health was collected via structured questionnaires. Binary logistic regression was used to evaluate the associations of shift work and sleep characteristics with irregular menstrual cycles and dysmenorrhea, whereas multinomial logistic regression was applied for the three-category menstrual blood volume outcome (normal volume, hypomenorrhea, and menorrhagia). Latent class analysis (LCA) was applied to identify sleep patterns, and mediation analysis was performed to assess the indirect effect of sleep quality. RESULTS: A history of rotating shift work was associated with higher odds of irregular menstrual cycles (OR = 1.31, 95% CI: 1.03-1.65) and dysmenorrhea (OR = 1.71, 95% CI: 1.42-2.06). Notably, long-term cumulative exposure (≥ 12 years) to rotating shift work (OR = 1.61, 95% CI: 1.08-2.38) and night shifts (OR = 2.40, 95% CI: 1.22-4.71) was uniquely linked to a starkly elevated likelihood of menorrhagia. An increasing trend in the odds of dysmenorrhea was observed with higher frequency of evening or night shifts over the past year. Poor sleep quality, short sleep duration (< 6 h), prolonged sleep onset latency (> 30 min), and specific sleep patterns identified by LCA were associated with higher odds of menstrual disorders. Mediation analysis indicated that sleep quality had a significant indirect effect only on the association between shift work and irregular menstrual cycles, accounting for approximately 7.36% of the total effect. No significant mediation effect was observed for dysmenorrhea. Although indirect effects were statistically significant for hypomenorrhea and menorrhagia, the total effects were not significant, suggesting inconsistent mediation patterns. CONCLUSIONS: Shift work and poor sleep quality are associated with menstrual disorders among nurses. Mediation analysis suggests that sleep quality may represent a potential pathway underlying this association, with a statistically significant mediating effect observed in irregular menstrual cycles. These findings highlight the importance of considering both occupational scheduling and sleep health in strategies aimed at improving reproductive health in shift-working women.

Lien vers l'article

Impact of light on the human body with particular emphasis on women's reproductive health.

Tadros-Zins M, Krekora M, Zych-Krekora K. *Ginekol Pol*. 2026;97(6):504-9.

Light exposure plays a fundamental role in human physiology, influencing circadian rhythms, hormonal regulation, and reproductive health. This review examines the multifaceted impact of natural and artificial light on women's reproductive function, with particular emphasis on mechanisms underlying light-mediated biological processes. Evidence demonstrates that light exposure affects melatonin secretion, which in turn modulates reproductive hormones including luteinizing hormone, follicle-stimulating hormone, and sex steroids. Disruption of natural light-dark cycles through shift work, artificial light at night, or circadian misalignment has been associated with menstrual irregularities, ovulatory dysfunction, reduced fertility, and adverse pregnancy outcomes. Conversely, adequate vitamin D synthesis through ultraviolet light exposure supports ovarian function and metabolic health. Recent studies reveal that continuous light exposure can induce anovulation through disruption of the leucine-mTOR-autophagy axis, while circadian rhythm disturbances correlate with polycystic ovary syndrome. This article synthesizes current knowledge on photobiological mechanisms, clinical implications, and therapeutic applications of light modulation in gynecological practice.

Lien vers l'article

Night shift work as a potential risk factor for hypertensive disorders of pregnancy: the Japan environment and children's study.

Shinohara S, Kojima R, Otawa S, Kushima M, Miyake K, Yui H, et al. *Int Arch Occup Environ Health*. 2026 Jul 11;99(6).

OBJECTIVE: This study aimed to clarify the relationship between the night shift work and hypertensive disorders of pregnancy (HDP). Moreover, we examined whether night shift work is associated with

early-onset or late-onset HDP. METHODS: This nationwide prospective cohort study analyzed the data of 104,043 fetuses and their mother records from the Japan Environment and Children's Study. After excluding participants with multiple gestations, preconception hypertension, and insufficient data, 90,660 mother-child dyads were included for analysis. Night shift work was assessed using a second/third trimester questionnaire and defined as working one or more shifts per month during hours other than typical daytime work. Multiple logistic regression analysis was conducted to estimate the association between night shift work and HDP. RESULTS: The overall incidence rate of HDP, early-onset HDP, and late-onset HDP were 2.5% (2,282/90,660), 0.5% (487/90,660), and 2.0% (1,795/90,660), respectively. After adjusting for potential confounding factors, the risk of HDP was significantly higher in the night shift work group (adjusted OR [aOR], 1.20; 95% CI 1.01-1.44; p = 0.04). However, no significant association was found between night shift work and the incidence of early-onset HDP (aOR, 1.09; 95% CI 0.72-1.66; p = 0.68). In contrast, after adjusting for potential confounding factors, the risk of late-onset HDP was significantly higher in the night shift work group (aOR, 1.23; 95% CI 1.01-1.49; p = 0.04). CONCLUSION: Night-shift work during pregnancy may be associated with an increased risk of HDP, particularly late-onset HDP.

Lien vers l'article

Lifestyle and Occupational Factors Associated with Premenstrual Dysphoric Disorder Symptoms in Chinese Nurses: A Cross-Sectional Study.

Chen Y, Luo M, Chen Y, Mao T, Zhang Q, Liang T, et al. *J Am Psychiatr Nurses Assoc*. 2026 Jul 29:10783903261466139.

BACKGROUND: Premenstrual dysphoric disorder (PMDD) impairs quality of life in reproductive-aged women. Clinical nurses facing high occupational stress and irregular work schedules may be particularly vulnerable. Identifying modifiable risk factors in this population is crucial for developing effective prevention strategies. AIMS: This study aimed to investigate associations between lifestyle factors, work patterns (specifically night shifts), and PMDD symptoms among Chinese female nurses. METHODS: A cross-sectional study was conducted among 1,031 Chinese female nurses. Assessments included the Chinese version of the Core Symptoms of Premenstrual Dysphoric Disorder Questionnaire (CTDP-C), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Pittsburgh Sleep Quality Index (PSQI), and Medical Staff Stressor Scale (MSSS). RESULTS: The prevalence of PMDD symptoms was 42.4% in Chinese female nurses. Higher PMDD risk was associated with a body mass index (BMI) of 24-27.9 kg/m(2) ($p < .05$), weekly exercise <30 min ($p < .05$), a history of alcohol use ($p < .05$), and ≥ two night shifts/week ($p < .001$). CTDP-C scores showed strong positive correlations with depression ($r = 0.702$), anxiety ($r = 0.680$), poor sleep quality ($r = 0.493$), and occupational stress scores ($r = 0.500$) (all $p < .01$). Multivariate regression confirmed BMI, exercise, alcohol use, night shift frequency, and physical health conditions as significant predictors. CONCLUSIONS: PMDD symptoms are highly prevalent among Chinese nurses, influenced by modifiable lifestyle and occupational factors. These findings highlight the need to integrate screening (night shifts, alcohol use) into occupational health exams. Nurse administrators should implement shift optimization, wellness programs, and stress management to protect reproductive mental health.

Lien vers l'article

Polyexposition

Association between occupational noise exposure and metabolic dysfunction-associated fatty liver disease: the mediating role of body mass index in automotive manufacturing workers.

Chen Z, Yu J, Ou S, Ruan Y, Rong X, Zhang Y, et al. *Front Public Health*. 2026;14:1793888.

BACKGROUND: Occupational noise exposure has been linked to various adverse health outcomes, including metabolic disorders. However, limited evidence exists regarding its association with metabolic dysfunction-associated fatty liver disease (MAFLD). This study aimed to investigate the association between occupational noise exposure and MAFLD among automotive manufacturing workers, providing scientific evidence for the prevention and management of MAFLD in occupational populations. METHODS: A cross-sectional study involving 3,427 male workers from two automobile manufacturing enterprises in Guangzhou, China, was conducted in 2023. Individual occupational noise exposure levels were assessed via cumulative noise exposure (CNE). MAFLD was diagnosed on the basis of ultrasound imaging and metabolic criteria, including obesity, type 2 diabetes, or metabolic dysregulation. Logistic regression models were used to evaluate the associations between CNE and MAFLD, adjusting for demographic, lifestyle, and clinical covariates. The interaction effects of shift work and hearing protection device use were analyzed. Mediation analysis was used to assess the role of body mass index (BMI) in the relationship between CNE and MAFLD. RESULTS: According to the continuous models, each 1 dB-year increase in the CNE was associated with a 1.05-fold increased risk of MAFLD (OR: 1.05, 95% CI: 1.02, 1.08). According to the categorical models, workers in the highest CNE quartile (>89.651 dB-years) had a significantly greater risk of MAFLD (OR: 1.50, 95% CI: 1.05, 2.16) than did those in the lowest quartile. Subgroup analyses revealed that the association was more pronounced among workers who did not use hearing protection devices or worked night shifts (p for interaction<0.01). Body mass index (BMI) partially mediated the association between CNE and MAFLD, accounting for 3.48% of the total effect. CONCLUSION: Occupational noise exposure was associated with higher odds of MAFLD, and BMI partially mediated this association. Night/shift work and hearing protection use affect this relationship. These findings emphasize the need for effective noise control and occupational health interventions to mitigate MAFLD risk among workers exposed to noise.

Lien vers l'article

Pathologies cardiovasculaires

Shift work and early vascular aging: a systematic review.

Xie H, Shu L, Cheng R, Hu M, Liao J. *BMC Public Health*. 2026 Jul 15.

BACKGROUND: People worldwide are increasingly engaged in shift work across modern industries. This might have long-term health implications, including early vascular aging (EVA) characterized by modified vascular structures, impaired vascular function, and changed circulatory indicators. Evaluating the relationship between EVA indicators and shift work could provide valuable insights into changes in vascular health. However, this relationship remains a matter of debate. METHODS: We conducted a systematic review across five databases to identify the relationship between shift work and EVA, with outcomes based on vascular structures, functions, and circulatory indicators. RESULTS: This systematic review included 33 articles published up to February 2025, including 28 cross-sectional and five longitudinal studies. Night shift, 24-hour shift, and on call shift were all examined in this review. Available longitudinal literature was consistent in showing a relationship between the continuous years spent working shifts and increased pulse wave velocity (n = 3), as well as increased thickness of the carotid artery (n = 2). However, evidence from cross-sectional studies have been inconsistent, with insignificant correlations reported for vascular structures (4/10) and functions (4/8). Across various samples and settings, shift work was found to be positively associated with inflammatory factors and negatively associated with antioxidant levels (17/19). CONCLUSIONS: Variations in organizational and regional policies result in differing rest periods and working conditions among shift workers. The association between shift work and EVA remains uncertain due to inconsistencies across studies and the lack of a standardized definition of shift work. Future research should establish widely accepted evaluation systems and incorporate individual lifestyle factors to enable more effective and targeted intervention strategies for shift workers.

Lien vers l'article

Cardiovascular alterations and night shift work disorder in nurses: a systematic review.

Poblano A, Poblano-Rattray A, Santana-Miranda R. *Arch Cardiol Mex*. 2026 Jul 16.

Cardiovascular diseases (CVD) are among the top causes of morbidity and mortality among Mexican adults. Night shift work disorder (NSWD) has been reported as a possible risk factor for CVD. The objective of this review was to determine whether there is an association between CVD and NSWD in nurses. We performed a systematic review of these variables in PubMed. Of 68 original research articles addressing CVD and NSWD in nurses, four found an association between CVD and NSWD. A possible association between these variables was documented, supported by the alteration of wake/sleep circadian cycles and the work schedules that characterize nursing work. In conclusion, there is a possible mild association between CVD and NSWD, in nurses. Preventive and early diagnosis and treatment measures must be developed for nursing staff that works night shifts in hospitals to reduce CVD.

Lien vers l'article

The Risk of Cardiovascular Diseases for Shift Workers in the Prospective Heinz Nixdorf Recall Study.

Wichert K, Rabstein S, Erbel R, Eisele L, Arendt M, Dragano N, et al. *Am J Ind Med*. 2026 Jul 12.

BACKGROUND: Shift work can disrupt circadian rhythms and is postulated to play a role in cardiovascular diseases (CVD). In the German prospective population-based Heinz Nixdorf Recall Study, we analyzed longitudinal associations between shift work and night-shift work with CVD.

METHODS: CVD was defined as a fatal or non-fatal cardiac or cerebrovascular event or interventional coronary revascularization during an average follow-up of 15 years. Retrospective shift-work information was assessed as binary and as lifetime duration in years. Adjusted log-linear Poisson regression models were applied to estimate incidence rate ratios (IRR) and 95% confidence intervals (CI) for the effect of shift and night-shift work on incident events. Stratified analyses by sex, diurnal preference, and blue-collar status were also performed. RESULTS: Incident CVD was not associated with shift work (N = 3024; shift work for at least 1 year: IRR = 0.87, 95% CI = 0.68-1.10; night-shift work for at least 1 year: IRR = 0.87, 95% CI = 0.66-1.14). However, we observed sex differences with reduced incidence of CVD for long duration of night-shift work among men (N = 1369 with 380 night-shift workers; model for duration of night-shift work: 1- < 10 years: IRR = 1.08, 95% CI = 0.74-1.57; 10+ years: IRR = 0.64, 95% CI = 0.42-0.96). For women, we found slightly elevated IRRs (N = 1438 with 91 night-shift workers; model for duration of night-shift work: 1- < 10 years: IRR = 1.11, 95% CI = 0.35-3.50; 10+ years: IRR = 2.05, 95% CI = 0.75-5.61). These estimates were stronger in women that never worked in blue-collar jobs (10+ years night-shift work: IRR = 3.22, 95% CI = 1.17-8.92). CONCLUSIONS: We did not observe consistently increased risks of CVD with shift and night workers. However, stratified analyses pointed toward sex- and job-specific vulnerable subgroups.

Lien vers l'article

Exploratory evaluation of physiological markers within a treadmill prioritization framework in a predominantly male industrial workforce.

Papilika T. *Ind Health*. 2026 Jul 13.

Exercise treadmill testing (TMT) is commonly used in occupational cardiovascular surveillance for safety-sensitive workers, but age-based screening may generate high volumes of asymptomatic examinations with relatively low event prevalence. This retrospective cross-sectional study evaluated whether routinely collected physiological indicators could support exploratory stratification of positive TMT responses within a treadmill prioritization (TP) framework. Occupational surveillance records were analyzed among rotational shift workers in the Indonesian oil and gas industry between January 2024 and December 2025. Universal TMT was performed in 3,631 workers (3,544 male, 87 female), with 40 positive TMT responses. Associations were evaluated using multivariable Firth logistic regression, and a reduced exploratory model including hemoglobin and estimated glomerular filtration rate (eGFR) was internally validated using bootstrapping. Higher hemoglobin was independently associated with lower odds of positive TMT response (adjusted OR 0.73; 95% CI 0.58-0.94). The reduced framework demonstrated moderate discrimination (optimism-corrected AUC 0.72) and visual calibration agreement. Within the derivation cohort, 409 workers (11.3%) were classified as low-risk, with no observed positive TMT responses. These findings suggest physiological reserve markers may provide exploratory stratification information alongside conventional risk indicators. However, the TP framework remains hypothesis-generating and should not modify TMT intervals or reduce testing before external validation.

Lien vers l'article

Chrononutrition, Circadian Rhythms, and Genetic Susceptibility in Noncommunicable Diseases: Sex-Specific Perspective.

Minari TP, Vilela-Martin JF, Pisani LP. *Nutr Rev*. 2026 Jul 29.

Obesity, diabetes, and hypertension are major global health burdens influenced not only by lifestyle factors but also by genetic predisposition, sleep quality, chrononutrition, and circadian rhythms. This review examined how these factors interact in metabolic and cardiovascular diseases, with emphasis on sex-specific differences. A narrative review was conducted using PubMed, Scopus, and Web of Science databases for studies published between 2006 and 2026. A total of 112 studies were

synthesized, including randomized trials, observational studies, systematic reviews, meta-analyses, Mendelian randomization, and mechanistic investigations. Evidence indicates that genetic susceptibility and circadian disruption contribute significantly to obesity, diabetes, and hypertension. Sleep deprivation, obstructive sleep apnea, and circadian misalignment were consistently associated with insulin resistance, appetite dysregulation, elevated blood pressure, and increased cardiometabolic risk, particularly among shift workers. Hormonal and metabolic pathways involving leptin, ghrelin, cortisol, and melatonin appear to mediate these effects. Important sex differences were observed, with women showing greater vulnerability to sleep-related appetite disturbances and men presenting a higher prevalence of visceral adiposity, sleep apnea, and hypertension. Chrononutrition strategies, including time-restricted eating and Mediterranean dietary patterns, showed beneficial effects on sleep quality, glycemic control, inflammation, and metabolic health. Emerging evidence also suggests bidirectional interactions between gut microbiota rhythmicity and circadian regulation. Genetic predisposition, sleep disturbances, and circadian disruption interact to influence metabolic and cardiovascular disease risk. Integrative approaches combining chrononutrition, sleep hygiene, circadian alignment, and personalized nutritional strategies may improve the prevention and management of cardiometabolic diseases.

Lien vers l'article

Metabolic biomarkers and cardiometabolic risk among night shift workers: evidence from night shift workers in Europe.

Harding BN, Laurell C, Thacher JD, Castaño-Vinyals G, Snigireva A, Garde AH, et al. *Eur J Public Health*. 2026 Jun 10;36(4).

Circadian disruption resulting from night shift work has been associated with cardiometabolic diseases, but the underlying biological pathways remain insufficiently understood. We analyzed data from the EPHOR-NIGHT cohort, including questionnaires, clinical assessments [body mass index (BMI), blood pressure (BP), waist/hip circumference], and plasma metabolites in blood samples (N = 860; day shift workers n = 362, night shift workers = 498) from Sweden, Spain, and Denmark. We applied multivariable linear regression to examine differences in cardiometabolic risk factors and metabolite levels between shift workers and examined associations between metabolites and cardiometabolic risk factors. Night shift work was associated with higher mean systolic BP (β = 1.89, 95%CI 0.00, 3.79 mmHg), higher mean BMI (β = 1.14, 95%CI 0.44, 1.84 kg/m2), and higher odds of hypertension (OR = 1.38, 95%CI 1.00, 1.89) and overweight/obesity (OR = 1.37, 95%CI 1.02, 1.82), compared to day shift work. Associations were stronger among women in sex-stratified analyses. Night shift workers had metabolic alterations, with lower fractions of polyunsaturated fatty acids, higher fractions of mono-unsaturated and saturated fatty acids, and higher levels of amino acids isoleucine, valine, and phenylalanine. These changes remained after multiple adjustments, including diet. Effects were more pronounced for those working more consecutive night shifts, more night shifts per week, and for permanent night schedules versus rotating shifts. The night shift-related metabolites were associated with higher BMI and higher blood pressure. Night shift work was associated with specific metabolic alterations linked to increased cardiometabolic risk. Our results suggest that reducing night shift intensity and consecutive nights may help mitigate these adverse effects.

Lien vers l'article

Night shift work and epigenetic modifications: cardiovascular-related miRNA expression within a European cohort of night shift workers.

Harding BN, Jiang Z, Pineda D, Swift SL, Kogevinas M, Albin M, et al. *Environ Health*. 2026 May 14;25(1).

BACKGROUND: The major pathways contributing to cardiovascular disease among night shift workers remain poorly understood. MicroRNAs (miRNAs) have been identified as novel regulators of

cardiovascular risk factors. Our objective was to examine whether night shift work was associated with altered expression of five cardiovascular-related miRNAs in night and day shift workers. METHODS: RNA was extracted from plasma of 106 night and 89 day shift healthcare workers, followed by deoxyribonuclease treatment, cDNA synthesis, and quantitative real-time PCR using target-specific assays for five miRNAs (miR-122-5p, miR-107, miR-155-5p, miR-21-5p, and miR-103a-2-5p). In adjusted linear regression models, we examined associations between night shift exposure and the relative expression of miRNAs. We predicted target genes of the miRNAs under study and preformed enrichment analyses to examine related functions and pathways. RESULTS: Participants were on average 43 years of age and mostly female (94%). Results were suggestive of higher miRNA expression levels among night shift workers, most notably for miR-155-5p (coefficient 0.46, 95%CI -0.03, 0.94) and miR-103a-2-5p (coefficient 0.45, 95%CI -0.06, 0.96), however results did not reach statistical significance. In dose-response analyses, for each additional year of prior night shift work duration history, the relative expression of several miRNAs was higher. Increased duration of night shift work was significantly associated with higher levels of miR-22-5p (coeff 0.03, 95%CI 0.00, 0.05), miR-107 (coeff 0.04, 95%CI 0.01, 0.06), miR-21-5p (coeff 0.04, 95%CI 0.01, 0.07) and miR-103a-2-5p (coeff 0.02, 95%CI 0.00, 0.05). The enrichment analyses identified several pathways and functions (e.g. lipid and atherosclerosis) related to cardiometabolic risk. CONCLUSIONS: Night shift work appeared to be associated with an elevated expression of cardiovascular-related circulating miRNAs. The pathway analyses of downstream target genes provided evidence of their involvement in a variety of cardiometabolic disease mechanisms. This study presented new evidence linking night shift work exposure to cardiometabolic markers via epigenetic regulation.

Lien vers l'article

"More Kairos, Less Chronos": Sleep, circadian rhythms and the path to cardiovascular, neurological and metabolic protection.

Calcaterra G, Akurati S, Punjabi N, Iacobellis G, Varghese RT. *Diabetes Res Clin Pract*. 2026 Aug;238:113387.

Sleep supports cardiovascular, metabolic, neurologic, and psychological health. Beyond duration, circadian alignment is crucial because regular sleep, light exposure, feeding, and activity synchronize central and peripheral clocks. Modern chronodisruption from artificial light, irregular schedules, shift work, late eating, and insufficient sleep misaligns these rhythms and increases chronic disease risk. This review summarizes evidence linking sleep and circadian disruption to cardiovascular disease, metabolic dysfunction, and neurodegeneration. The American Heart Association's Life's Essential 8 recognizes sleep as a core cardiovascular health metric, reflecting evidence that sleep duration, timing, regularity, and quality add predictive value beyond traditional risk factors. We also review data from cohorts, proteomics, wearables, and artificial intelligence showing that objective sleep traits can predict cardiometabolic and neurologic outcomes. Both short and long sleep duration are associated with adverse metabolic outcomes, likely through partly distinct mechanisms. Finally, we discuss clinical implications, including light hygiene, meal timing, sleep disorder treatment, sleep metrics for early risk detection, and links between circadian disruption, gut microbiota metabolic reprogramming, clock-gene regulation, and diet-based strategies targeting gut-liver and metabolic pathways.

Lien vers l'article

Association between occupational working time and cardiovascular morbidity: a cross-sectional study of NHANES database.

Alqahtani NG. *Occup Med (Lond)*. 2026 Jul 10.

BACKGROUND: Long working hours are recognized as an occupational hazard that may increase the risk of cardiovascular diseases. However, limited contemporary evidence exists from nationally

representative US populations. AIMS: This study aimed to examine the association between occupational working time and cardiovascular morbidity using the recent National Health and Nutrition Examination Survey (NHANES) data. METHODS: A cross-sectional analysis including 4502 adults from the 2021-23 NHANES dataset was conducted. Working hours were categorized into 1-34, 35-40, 41-54, and ≥55 h per week. Cardiovascular outcomes included self-reported heart failure, coronary heart disease, angina, myocardial infarction, stroke and hypertension. RESULTS: Participants working 35-40 h last week had significantly lower odds of having coronary heart disease (odds ratio [OR] = 0.524; 95% confidence interval [CI] 0.275-0.998), and angina (OR = 0.411; 95% CI 0.191-0.887) compared to those working 1-34 h. Those working 41-54 h also had reduced odds of angina (OR = 0.125; 95% CI 0.029-0.550). Conversely, working ≥55 h last week was significantly associated with increased odds of hypertension (OR = 1.496; 95% CI 1.135-1.971). No significant association was found between working days per week and CV morbidity. CONCLUSIONS: Standard full-time work (35-40 h/week) may be protective against certain cardiovascular conditions, while long working hours (≥55 h/week) may elevate hypertension risk. These findings support international calls to regulate excessive work hours and highlight the importance of balanced employment for better cardiovascular health.

Lien vers l'article

Environmental Exposures and Stroke Risk: Converging Pathways, Unequal Burdens, and Prevention Opportunities.

Ali M, Mayberry W, Achey R, Putaala J, Nouh A. *Curr Neurol Neurosci Rep*. 2026 Jul 22;26(1).

PURPOSE OF REVIEW: To synthesize recent evidence on how environmental exposures influence stroke risk, with emphasis on air pollution, thermal stress, circadian and occupational disruption, built and social environments, and selected toxicants. RECENT FINDINGS: Long-term and episodic air pollution, especially fine particulate matter with aerodynamic diameter ≤ 2.5 µm ($PM_{2.5}$) and wildfire smoke, remain most consistently associated with stroke risk. Extreme heat combined with heat-humidity metrics is emerging as an important acute stroke trigger. Noise, artificial light at night, shift work, and long working hours show smaller but plausible associations, while greener and more walkable environments may be modestly protective. Social and structural disadvantage clusters, multiple exposures and inequities play an integrated role in risk and prevention. Environmental determinants are increasingly relevant to stroke risk. The strongest current links are realted to pollution, heat, sleep, and work disruption, as well as environmental inequity. Future research should move beyond single-exposure models toward combined-exposure as well as intervention-focused approaches.

Lien vers l'article

Cardiovascular risk profile among industrial workers in North India: A cross-sectional study.

Mohan B, Batta A, Sharma S, Satija T, Arora GP, Ramanathan S, et al. *Indian Heart J*. 2026 Mar–Apr;78(2):55–60.

BACKGROUND: Cardiovascular diseases (CVDs) in industrial workers are a significant but overlooked public health problem, and present study was planned to assess the prevalence of risk factors related to CVDs in industrial workers, so that active interventions can be undertaken to decrease disease burden. METHODOLOGY: This cross-sectional, field-based survey was conducted among industrial workers in Ludhiana, following approval from the Institutional Ethics Committee. Random sampling of industries from the two industrial clusters was conducted, involving the collection of data on demography, migration status, anthropometric measurements, and cardiovascular risk factors by a trained task force. Quantitative data were described in terms of frequencies, range, and mean ± SD, whereas categorical data were compared by Chi square ($\chi 2$) test. A probability value less than 0.05 was

considered statistically significant. RESULTS: Mean age of the industrial workers (n = 15527) was 34.95 ± 10.96 years, and 72 % of the workforce were from outside Punjab. On screening, 22 % (n = 3395) of the study population were hypertensive, and 4.1 % (n = 644) were diabetic (DM). Out of the hypertensives, 15 % (n = 503) were previously known to have hypertension (HT), whereas 85 % (n = 2892) were newly diagnosed during the study. Among previously known HT, 56 % had uncontrolled HT, and 45 % had uncontrolled diabetic status. Alcohol intake, chewing tobacco and smoking were the most common behavioral risk factors, whereas HT and DM were the most common Cardiovascular disease-related risk factors in the study population. Prevalence of HT and DM was found to be higher in native industrial workers as compared to the migrant workers. Age ≥30 years, male gender, substance abuse (alcohol and smoking) and increased BMI were significantly associated with HT and DM. CONCLUSIONS: Screening of the industrial workforce for cardiovascular risk factors is imperative to decrease the risk of CVDs, and it requires a multifaceted approach that combines workplace interventions, policy changes, and individual-level support.

Lien vers l'article

Response to Letter to the Editor, "Cardiovascular risk profile among industrial workers in North India: A cross-sectional study".

Mohan B, Batta A, Sharma S. *Indian Heart J*. 2026 Jul 30.

Dear Editor, We thank the authors for their interest in our work and for their insightful comments regarding our study evaluating cardiovascular risk factors among the industrial workers in North India.1 In our response, we would like to clarify their concerns regarding the methodological aspects of our research and further discuss the key implications of our findings.

Lien vers l'article

Re: Cardiovascular risk profile among industrial workers in North India: A cross-sectional study.

Thusoo S. *Indian Heart J*. 2026 Jul 30.

In this study, Mohan et al found that, of the 15,527 industrial workers in Ludhiana, North India, 22% had hypertension, of which 85% was undiagnosed and 11% had diabetes. Three methodological issues discussed in this commentary are worthy of consideration: firstly, the implications of the largely migrant male workforce for generalisability; secondly, the lack of a structured cardiovascular risk-scoring system to put individual risk factor prevalence into context; and, thirdly, the need to consider occupational exposures (such as noise, shift work and heat stress) as separate cardiovascular risk factors not included in the study's risk profile.

Lien vers l'article

Editorial: Strategies for workplace design to reduce obesity and metabolic risks.

Ebrahimi MH, Keikha M, Dianati M. *Front Public Health*. 2026;14:1866218.

By synthesizing findings from five recent occupational cohort studies, this review outlines evidence-based strategies for workplace design that can systematically reduce obesity and cardio metabolic risk across diverse professional settings.

Lien vers l'article