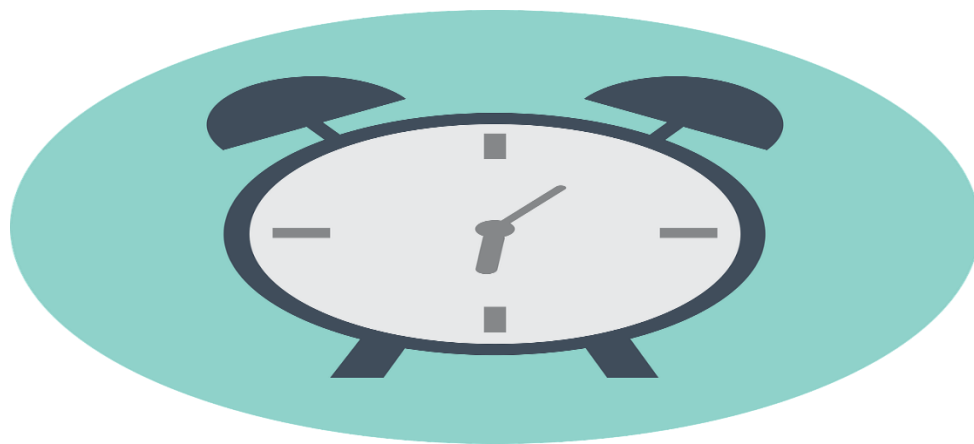


LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Février 2024



Objectifs : réaliser une veille scientifique sur les horaires atypiques

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

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

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Horaires atypiques (HA)

Généralités et prévention

Working hours of full-time hospital physicians in Japan: a cross-sectional nationwide survey.

Koike S, Wada H, Ohde S, Ide H, Taneda K, Tanigawa T. *BMC Public Health*. 2024 Jan 12;24(1):164.

BACKGROUND: The culture of excessively long overtime work in Japan has not been recently addressed. New legislation on working hours, including a limitation on maximum overtime work for physicians, will be enforced in 2024. This study was performed to elucidate the working conditions of full-time hospital physicians and discuss various policy implications. **METHODS:** A facility survey and a physician survey regarding physicians' working conditions were conducted in July 2022. The facility survey was sent to all hospitals in Japan, and the physician survey was sent to all physicians working at half of the hospitals. The physicians were asked to report their working hours from 11 to 17 July 2022. In addition to descriptive statistics, a multivariate logistic regression analysis on the factors that lead to long working hours was conducted. **RESULTS:** In total, 11,466 full-time hospital physicians were included in the analysis. Full-time hospital physicians worked 50.1 h per week. They spent 45.6 h (90.9%) at the main hospital and 4.6 h (9.1%) performing side work. They spent 43.8 h (87.5%) on clinical work and 6.3 h (12.5%) on activities outside clinical work, such as research, teaching, and other activities. Neurosurgeons worked the longest hours, followed by surgeons and emergency medicine physicians. In total, 20.4% of physicians were estimated to exceed the annual overtime limit of 960 h, and 3.9% were estimated to exceed the limit of 1860 h. A total of 13.3% and 2.0% exceeded this level only at their primary hospital, after excluding hours performing side work. Logistic regression analysis showed that male, younger age, working at a university hospital, working in clinical areas of practice with long working hours, and undergoing specialty training were associated with long working hours after controlling for other factors. **CONCLUSIONS:** With the approaching application of overtime regulations to physicians, a certain reduction in working hours has been observed. However, many physicians still work longer hours than the designated upper limit of overtime. Work reform must be further promoted by streamlining work and task-shifting while securing the functions of university hospitals such as research, education, and supporting healthcare in communities.

[Lien vers l'article](#)

Employment Factors Associated With Long Working Hours in France.

Niedhammer I, Pineau E, Bertrais S. *Saf Health Work*. 2023 Dec;14(4):483-7.

The objectives of the study were to explore the employment factors associated with long working hours, known as a risk factor for various health outcomes. The study relied on the national representative data of the 2013 French working conditions survey and a study sample of 23,378 full-time employees. Long working hours were defined by the threshold of 48 hours a week following the European Working Time Directive. The prevalence of long working hours was higher among men (13.5%) than among women (8.5%). Employees of the private sector, with permanent work contract, in small companies, and men in the services had a higher prevalence of exposure. This prevalence increased with educational and occupational levels. Our findings may help decision-makers to define preventive strategies. More research is needed to improve our knowledge of the employment factors associated with long working hours, as there may be strong differences between countries.

[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

Association between long working hours and engagement in preventive healthcare services in Korean workers: Findings from the Korean National Health and Nutrition Examination Survey.

Baek SU, Lee YM, Yoon JH. *Prev Med.* 2024 Jan 5;180:107849.

BACKGROUND: Engagement in preventive healthcare services is crucial for preventing diseases. We explored how working hours are associated with engagement in preventive healthcare services, with a focus on gender differences. **METHODS:** This cross-sectional study used data from the 2007-2012 Korean National Health and Nutrition Examination Survey. The dependent variable was engagement in each of the five preventive healthcare services (health check-ups, influenza vaccination, and stomach, breast, and cervical cancer screenings). We estimated the prevalence ratios (PRs) and 95% confidence intervals (CIs) using robust Poisson regression. **RESULTS:** The study analyzed 19,819 workers (9119 women). The adjusted PRs (95% CI) of the association between working ≥ 55 h per week and engagement in preventive healthcare services among men were 0.95 (0.90-1.00) for health check-ups, 0.86 (0.77-0.96) for influenza vaccination, and 0.95 (0.87-1.03) for stomach cancer screening compared to working 35-40 h per week. Among women, the adjusted PRs (95% CI) of the association between working ≥ 55 h per week and engagement in preventive healthcare services were 0.84 (0.78-0.91) for health check-ups, 0.82 (0.73-0.92) for influenza vaccination, and 0.88 (0.80-0.97) for stomach, 0.85 (0.78-0.94) for breast, and 0.82 (0.74-0.91) for cervical cancer screenings. **CONCLUSION:** Long working hours were negatively associated with engagement in preventive healthcare services, and the association was pronounced among female workers. Efforts to promote preventive healthcare participation among individuals with long working hours are necessary, and it is essential to consider the unique vulnerabilities of women when developing such policies.

[Lien vers l'article](#)

The effect of circadian on the productivity of nurses with the mediating role of quality of work life.

Poormoosa Y, Amerzadeh M, Alizadeh A, Kalhor R. *BMC Nurs.* 2024 Feb 2;23(1):89.

BACKGROUND: Circadian rhythms, as an integral part of daily life, govern the scheduling, management, and coordination of living organisms. Given the irregular nature of shift patterns in nurses' work

schedules, investigating their implications is paramount to increasing Quality of Work Life (QWL) and productivity. The study aimed to investigate the impact of circadian rhythm on the efficiency of nurses working in hospitals in Qazvin, Iran, with QWL serving as a mediating variable. **METHODS:** This study employed a descriptive-analytical research design, utilizing cross-sectional data collected in 2022-2023 based on the implementation of Structural Equation Modeling (SEM). The number of participants was 378 nurses. The data were obtained by administering a questionnaire and various tools, organized into four sections: demographic information, the Circadian Questionnaire, the Quality of Work Life Questionnaire, and the Nurses' Efficiency Questionnaire. The collected data were subsequently analyzed using SEM techniques within the R software. **RESULTS:** The findings demonstrated statistically significant variations in mean scores about gender and efficiency ($p = 0.008$), marital status and efficiency ($p = 0.000$), and employment type and efficiency ($p = 0.002$) among the study participants. There was a significant association between shift patterns and QWL ($p = 0.004$). Expressly, the confirmed results indicated a direct impact of circadian on QWL (with a path coefficient of 0.013), as well as an indirect impact on efficiency mediated by the variable QWL (with a path coefficient of 0.037) ($p < 0.05$). **CONCLUSION:** Due to the critical role of nurses in the healthcare system, implementing strategies that promote their efficiency is paramount. Therefore, managers can create an environment that enhances nurses' productivity by improving methods that positively impact their QWL.

[Lien vers l'article](#)

Santé psychique

Association between long working hours and the development of suicidal ideation among female workers: An 8-year population-based study using the Korean Longitudinal Survey of Women & Family (2012-2020).

Baek SU, Lee YM, Yoon JH. *Psychiatry Res.* 2024 Jan 12;333:115731.

Long working hours and overwork have recently emerged as pressing public health concerns. We explored the association between long working hours and suicidal ideation in female workers. A total of 8017 women (24,331 observations) from the fourth to eighth waves of the Korean Longitudinal Survey of Women and Families (2012-2020) were analyzed. To address the repeated measurements within each participant, we employed a generalized estimating equation to estimate the odds ratio (OR) and 95% confidence intervals (CIs). The prevalence of suicidal ideation was 1.9% for those working 35-40 h/week and 4.4% for those working ≥ 55 h/week. Compared to individuals working 35-40 h/week, those working ≥ 55 h/week were more likely to experience concurrent suicidal ideation (OR [95% CI]: 1.85 [1.43-2.39]). The OR (95% CI) of the association between long working hours and onset of suicidal ideation in the subsequent wave was 1.69 (1.20-2.38) for ≥ 55 h/week. In subgroup analysis, this association was pronounced among workers with low-income levels (OR [95% CI]: 1.97 [1.29-3.02]) and blue-collar occupations (OR [95% CI]: 2.27 [1.41-3.66]). Policy efforts are required to protect the mental health of female workers exposed to long working hours.

[Lien vers l'article](#)

Effect of long working hours on psychological distress among young workers in different types of occupation.

Baek SU, Yoon JH. *Prev Med.* 2024 Feb;179:107829.

BACKGROUND: We investigated how the association between long working hours and psychological distress varies across different employment and occupation types in young workers. **METHODS:** Examining a nationally representative sample of 7246 Korean workers (3621 women) aged 15 to 40, we analyzed 23,492 observations spanning from 2016 to 2020. Psychological distress was measured

using the Brief Encounter Psychosocial Instrument. We employed a generalized estimating equation to estimate odds ratios (ORs) and 95% confidence intervals (CIs). RESULTS: Of the total observations, 5.2% worked <35 h/week, 52.9% worked 35-40 h/week, 23.5% worked 41-48 h/week, 10.3% worked 49-54 h/week, and 8.2% worked ≥55 h/week. The OR (95% CI) of the association between long working hours and psychological distress was 1.38 (1.11-1.72) for <35 h/week, 1.47 (1.32-1.65) for 41-48 h/week, 1.74 (1.49-2.04) for 49-54 h/week, and 2.11 (1.75-2.55) for ≥55 h/week compared to 35-40 h/week. The OR (95% CI) of the association between working ≥55 h/week and psychological distress was significantly higher among wage workers (OR [95% CI]: 2.37 [1.94-2.89]) compared to self-employed workers (OR [95% CI]: 0.84 [0.52-1.36]). Additionally, the OR (95% CI) of the association between working ≥55 h/week and psychological distress was significantly higher among white-collar workers (OR [95% CI]: 3.24 [2.54-4.13]) compared to service/sales workers (OR [95% CI]: 1.22 [0.86-1.72]) or blue-collar workers (OR [95% CI]: 1.71 [1.10-2.67]). No clear gender differences were observed. CONCLUSION: Psychological distress caused by long working hours can be pronounced among white-collar and wage workers.

[Lien vers l'article](#)

Beyond working hours: the association between long working hours, the use of work-related communication devices outside regular working hours, and anxiety symptoms.

Kim S, Ham S, Kang SK, Choi WJ, Lee W. *J Occup Health*. 2024 Jan 4;66(1).

OBJECTIVES: The present study aimed to identify and compare the associations between long working hours and use of work-related communication devices outside regular working hours and anxiety symptoms, thereby providing insight into redefining working hours. METHODS: Based on the cross-sectional data from the sixth Korean Working Conditions Survey (KWCS), specifically the responses from 46 055 workers, the use of work-related communication devices outside of regular working hours, long working hours, and anxiety symptoms were assessed. To investigate the associations between using work-related communication devices outside regular working hours or long working hours with anxiety symptoms, odds ratios (ORs) and 95% CIs were calculated using multiple logistic regression models. RESULTS: Among 46 055 participants, 25 659 (55.7%) used work-related communication devices outside working hours, 8145 (17.7%) worked long hours, and 2664 (5.8%) experienced anxiety symptoms. Compared with the reference group, those who used work-related communication devices outside regular working hours without working long hours, had higher OR of anxiety symptoms (OR: 2.18; 95% CI, 1.97-2.41) than those who worked long hours without using work-related communication devices during off-hours (OR: 1.32; 95% CI, 1.09-1.59). Furthermore, the group that both worked long hours and used work-related communication devices outside working hours exhibited the highest OR of anxiety symptoms (OR: 2.57; 95% CI, 2.24-2.97). CONCLUSIONS: Using work-related communication devices outside regular working hours is associated with a higher risk of anxiety symptoms compared with long working hours. This result suggests that using work-related devices outside regular working hours, in addition to regular work time, should be considered when redefining working hours.

[Lien vers l'article](#)

Troubles cognitifs et de la vigilance**Work hours, weekend working, nonstandard work schedules and sleep quantity and quality: findings from the UK household longitudinal study.**

Weston G, Zilanawala A, Webb E, Carvalho L, McMunn A. *BMC Public Health*. 2024 Jan 27;24(1):309.

BACKGROUND: Atypical temporal work patterns such as working longer than the standard 35-40 h/week, weekend working, and nonstandard work schedules (i.e. outside of the typical 9-5, including but not restricted to shiftwork) are increasingly prevalent in the UK. Aside from occupation-specific studies, little is known about the effects of these atypical temporal work patterns on sleep among workers in the UK, even though poor sleep has been linked to adverse health problems, lower workplace productivity, and economic costs. **METHOD:** We used regression models to investigate associations between three types of atypical temporal work patterns (long and short weekly work hours, weekend working, and nonstandard schedules) and sleep duration and disturbance using data from over 25,000 employed men and women from 2012-2014 and/or 2015-2017 in the UK Household Longitudinal Study, adjusting for potential confounders and psychosocial work factors. **RESULTS:** We found that relative to a standard 35-40 h/week, working 55 h/week or more was related to short sleep (less than 7 h/night) and sleep disturbance. Working most/all weekends compared to non-weekends was associated with short sleep, long sleep (more than 8 h/night), and sleep disturbance, as was working nonstandard schedules relative to standard schedules (fixed day-time schedules). Further analyses suggested some gender differences. **CONCLUSIONS:** These results should prompt employers and policymakers to recognise the need for rest and recovery, consider how the timing and scheduling of work might be improved to better support workers' health and productivity, and consider appropriate compensation for anyone required to work atypical temporal work patterns.

[Lien vers l'article](#)

Overtime work is related to nonrestorative sleep independently of short sleep time among a Japanese occupational population.

Sekizuka H, Miyake H. *Int Arch Occup Environ Health*. 2024 Jan;97(1):75-80.

OBJECTIVE: The symptoms of insomnia are defined as difficulty falling asleep, difficulty staying asleep, and early awakening. Although also a symptom of insomnia, nonrestorative sleep (NRS) is clearly more associated with objective indices than other insomnia symptoms. However, the link between NRS and overtime work duration is poorly understood. **METHODS:** The results of a single year's medical examinations were investigated for 26,144 Japanese office workers who were 30 to 59 years old. NRS status and lifestyle were collected through a computer-assisted medical interview. The subjects were asked about the presence or absence of NRS and their lifestyles in the most recent two to three months. The subjects were asked about their sleep times and average overtime durations per month (< 20 h/month, ≥ 20 but < 40 h/month, ≥ 40 but < 60 h/month, and ≥ 60 h/month). The relationships between NRS and overtime work duration adjusted for sleep time were also analyzed. **RESULTS:** The proportion of subjects with NRS showed a stepwise increase as overtime work hours increased. A logistic regression analysis was performed using NRS as an objective variable. The multivariate analysis demonstrated that overtime work duration (OR, 1.13; 95% CI 1.10-1.17; P < 0.001; per one-category increase) was an independent determinant of NRS. **CONCLUSION:** For office workers, long hours of overtime work increased the NRS prevalence at any sleep duration.

[Lien vers l'article](#)

Travail posté et de nuit

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

The association between proportion of night shifts and musculoskeletal pain and headaches in nurses: a cross-sectional study.

Stavås JA, Nilsen KB, Matre D. *BMC Musculoskelet Disord*. 2024 Jan 16;25(1):67.

BACKGROUND AND PURPOSE: Shift work is associated with musculoskeletal pain and headaches, but little is known about how the intensity of shift work exposure is related to musculoskeletal pain and headaches. This study aimed to investigate whether a higher proportion of night shifts is associated with a higher occurrence of musculoskeletal pain and headaches. Furthermore, to investigate whether sleep duration can mediate this potential association. **METHOD:** The study included 684 nurses in rotating shift work who responded to a daily questionnaire about working hours, sleep, and pain for 28 consecutive days. The data were treated cross-sectionally. **RESULTS:** A negative binomial regression analysis adjusted for age and BMI revealed that working a higher proportion of night shifts is not associated with a higher occurrence of musculoskeletal pain and headaches. On the contrary, those working $\geq 50\%$ night shifts had a significantly lower occurrence of pain in the lower extremities than those who worked $< 25\%$ night shifts (IRR 0.69 95% CI 0.51, 0.94). There was no indication of a mediation effect with total sleep time (TST). **CONCLUSION:** The results of this study indicate that working a higher proportion of night shifts is not associated with a higher occurrence of musculoskeletal pain and headaches.

[Lien vers l'article](#)

Autres pathologies

The association between proportion of night shifts and musculoskeletal pain and headaches in nurses: a cross-sectional study.

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[Lien vers l'article](#)

Chronotype, but Not Night-Shift Work, Is Associated with Psoriasis: a Cross-Sectional Study Among UK Biobank Participants.

Maidstone R, Iqbal M, Rutter MK, Ray DW, Young HS. *J Invest Dermatol.* 2024 Feb;144(2):410-4.e1.

[Lien vers l'article](#)

Associations between long-term night shift work and incidence of chronic obstructive pulmonary disease: a prospective cohort study of 277,059 UK Biobank participants.

Li J, Yang L, Yao Y, Gu P, Xie Y, Yin H, et al. *BMC Med.* 2024 Jan 16;22(1):16.

BACKGROUND: Little is known about the effects of night shifts and their interactions with genetic factors on chronic obstructive pulmonary disease (COPD). In this study, we aim to investigate relationships between long-term night shift work exposure and COPD risk, and assess modification effects of genetic predisposition. **METHODS:** A total of 277,059 subjects who were in paid employment or self-employed were included in the UK Biobank. Information on current and lifetime employment was obtained, and a weighted COPD-specific genetic risk score (GRS) was constructed. We used Cox proportional hazard models to investigate associations between night shift work and COPD risk, and their interaction with COPD-specific GRS. **RESULTS:** The cohort study included 277,059 participants (133,063 men [48.03%]; mean [SD] age, 52.71 [7.08] years). During a median follow-up of 12.87 years, we documented 6558 incidents of COPD. From day work, irregular night shifts to regular night shifts, there was an increased trend in COPD incidence (P for trend < 0.001). Compared with day workers, the hazard ratio (HR) and 95% confidence interval (CI) of COPD was 1.28 (1.20, 1.37) for subjects with rarely/sometimes night shifts and 1.49 (1.35, 1.66) for those with permanent night shifts. Besides, the longer durations (especially in subjects with night shifts ≥ 10 years) and increasing monthly frequency of night shifts (in workers with > 8 nights/month) were associated with a higher COPD risk. Additionally, there was an additive interaction between night shifts and genetic susceptibility on the COPD risk. Subjects with permanent night shifts and high genetic risk had the highest risk of COPD (HR: 1.90 [95% CI: 1.63, 2.22]), with day workers with low genetic risk as a reference. **CONCLUSIONS:** Long-term night shift exposure is associated with a higher risk of COPD. Our findings suggest that decreasing the frequency and duration of night shifts may offer a promising approach to mitigating respiratory disease incidence in night shift workers, particularly in light of individual susceptibility.

[Lien vers l'article](#)

The effect of shift work on body mass index: A systematic review and meta-analysis of observational studies.

Łagowska K, Kuleta-Koberska A, Michalak M, Bajerska J. *Am J Hum Biol.* 2024 Jan 8:e24041.

CONTEXT: Shift work involves working outside the standard working hours of 9 am to 5 pm Monday to Friday and may include working evening, night, weekend, or rotating shift patterns. Since shift workers sleep less and their circadian rhythms are disrupted, they are reported to have higher body weight than day workers. **OBJECTIVE:** This meta-analysis aims to determine whether shift workers (SW) are more prone to higher body mass index (BMI) than their day workers (DW) counterparts. It also addresses the question of whether the duration of shift work exposure, sex, or occupational type affect BMI value. **METHODS:** Four databases that is PubMed, EBSCO Host, Scopus, and Web of Science were searched for reports published up to October 2023. **RESULTS:** Sixty-three studies involving a total of 693 449 participants met our inclusion criteria. Meta-analyses showed a significant effect of shift work on BMI value (standard mean difference; SMD: 0.10 kg/m²) [95% confidence interval; 95% CI: 0.07; 0.13; $p < .001$] as compared with non-shift counterparts. Subgroup analysis revealed that shift work significantly increased BMI for studies where male working on this job schedule (SMD: 0.10 kg/m²) [95% CI: 0.04; 0.17; $p = .0018$] for studies where shift workers worked ≥ 13 years (calculated as the

median of shift work experience; SMD: 0.14 kg/m² [95% CI: 0.10; 0.18; $p < .001$]) as well as for studies where industrial (SMD: 0.12 kg/m² [95% CI: 0.05; 0.19; $p = .0012$]) and other type of occupations were dominated (0.12 kg/m² [95% CI: 0.07; 0.16; $p < .001$]). CONCLUSIONS: We found that in general working on a shift schedule increases BMI as compared with day workers, especially in case of male employed in this job schedule, for shift workers working for long periods of time (≥ 13 years), and for shift workers employed in industry and other type of occupations (e.g., airline workers, firefighters, police officers, blue collar, security personnel, bus drivers, garbage collectors, railway workers, postal, oil and gas workers).

[Lien vers l'article](#)

Differences in nutritional profile by chronotype among 12-h day shift and night shift nurses.

Faulkner R, Rangel T, Penders RA, Saul T, Bindler R, Miller L, Wilson M. *Chronobiol Int.* 2024 Jan;41(1):17-28.

Acute care nurses may suffer substantial fatigue if working night shift or if assigned a shift contrasting their preferred sleep-wake patterns, called chronotype. Nurses are at higher risk for diet-related, metabolic diseases compared to other healthcare professionals. Yet, the impact of preferred chronotype and mismatch to assigned shift on nutritional intake and risk for metabolic disease among acute care nurses is unclear. This observational study analyzed dietary data from 52 acute care nurses. Participants completed the revised morningness-eveningness questionnaire which gives a total score between 4 and 26. Lower scores (< 12) were flagged as evening type (E-type), higher scores (> 17) defined as morning type (M-type), and scores between 12 and 17 were categorized as neither types (N-type). N-type participants were considered chronotype matched when assigned to either shift, whereas E-types were only considered matched if assigned to night shift, and M-types matched only if assigned to day shift. Participants also recorded all dietary intake for 7 d (reflecting a typical workweek) in the MyFitnessPal phone application. Findings indicated that eveningness nurses had markers of MetS, including a significantly larger body mass index and waist circumference than N-types ($p < 0.05$). E-types also consumed, on average, more calories than other chronotypes ($m = 1833.7$ kcal), although this was not a statistically significant finding. Mismatched day ($n = 7$, 13.4%) and night ($n = 5$, 9.6%) nurses in our sample consumed, on average, more calories ($m = 1935.1$ kcal, $m = 1981.2$ kcal, respectively) than matched day ($n = 24$, 46.2%, $m = 1642.6$ kcal) or night ($n = 16$, 30.8%, $m = 1599.1$ kcal) nurses, although this finding was not statistically significant. Mismatched day nurses consumed significantly less fiber than day matched nurses (median = 10.9 g versus median = 18.5 g, $p = 0.04$), while night mismatched consumed significantly more fiber compared to night matched (median = 21 g versus median = 12.2 g, $p = 0.05$) nurses. Participant diets overall did not follow recommendations by the United States Department of Agriculture (USDA), who consumed a higher percentage of calories from saturated fats and a smaller percentage of calories from fiber, habits which increase risk for metabolic syndrome. Further research surrounding nutritional pathways utilizing larger samples is needed to uncover relationships with metabolic syndrome especially for eveningness-type nurses or if working a shift mismatched with preferred chronotype.

[Lien vers l'article](#)

The relationship of shift work disorder with symptoms of depression, anxiety, and stress.

Chang MJ, Vidaifar P, Birk JL, Shechter A. *J Affect Disord Rep.* 2024 Jan;15.

Shift workers commonly suffer from disturbed sleep, which is known to affect mental health in other populations. Shift work disorder (SWD) is characterized by complaints of insomnia and/or excessive daytime sleepiness temporally associated with working non-standard schedules that occur during the usual time for sleep. Few studies have explored the extent to which workers with vs. without SWD experience worse mental health. We administered the Shift Work Disorder Screening Questionnaire

to 60 adults engaged in various shift work schedules to categorize workers as being at high or low risk for SWD. Mental health outcomes were measured using the Depression Anxiety Stress Scale-21 (DASS-21). Linear regression was performed for each DASS-21 subscale, adjusting for age, sex, shift type, sleep duration, and frequency of alcohol use. Most participants (55 %) were at high risk for SWD. High-risk participants had higher depressive symptoms than low-risk participants, $B = 3.59$, 95 % CI [0.54, 6.65], $p = .02$. The estimated value for those at high risk for SWD corresponded to clinically significant mild depressive symptoms, ($M = 13.43$), compared to those at low risk, ($M = 9.84$). High risk for SWD was marginally associated with increased stress symptoms, $B = 2.48$, 95 % CI [-0.06, 5.02], $p = .06$. Our findings add to the body of evidence that SWD is associated with poor mental health outcomes. Providing interventions specific to the sleep impacts of SWD, including tailored cognitive behavioral therapy for insomnia, may improve shift workers' mental health.

[Lien vers l'article](#)

The associations between different types of infections and circadian preference and shift work.

Bjorvatn B, Waage S, Emberland KE, Litlekare S, RebNord IK, Forthun I, Rortveit G. *Chronobiol Int.* 2024 Jan 14:1-8.

Disturbed sleep and circadian disruption are reported to increase the risk of infections. People with an evening circadian preference and night workers typically report insufficient sleep, and the aims of the present study were to investigate possible associations between various types of infections and circadian preference and shift work status. Data were collected from an online cross-sectional survey of 1023 participants recruited from the Norwegian practice-based research network in general practice - PraksisNett. The participants completed questions about circadian preference (morning type, intermediate type, evening type), work schedule (day work, shift work without nights, shift work with night shifts), and whether they had experienced infections during the last three months (common cold, throat infection, ear infection, sinusitis, pneumonia/bronchitis, COVID-19, influenza-like illness, skin infection, gastrointestinal infection, urinary infection, venereal disease, eye infection). Data were analyzed with chi-square tests and logistic regression analyses with adjustment for relevant confounders (gender, age, marital status, country of birth, children living at home, and educational level). Results showed that evening types more often reported venereal disease compared to morning types (OR = 4.01, confidence interval (CI) = 1.08-14.84). None of the other infections were significantly associated with circadian preference. Shift work including nights was associated with higher odds of influenza-like illness (OR = 1.97, CI = 1.10-3.55), but none of the other infections. In conclusion, neither circadian preference nor shift work seemed to be strongly associated with risk of infections, except for venereal disease (more common in evening types) and influenza-like illness (more common in night workers). Longitudinal studies are needed for causal inferences.

[Lien vers l'article](#)

Correction to: Dietary taste patterns and diet quality of female nurses around the night shift.

de Rijk MG, de Vries JHM, Mars M, Feskens EJM, Boesveldt S. *Eur J Nutr.* 2024 Jan 6.

[Lien vers l'article](#)

Dietary taste patterns and diet quality of female nurses around the night shift.

de Rijk MG, de Vries JHM, Mars M, Feskens EJM, Boesveldt S. *Eur J Nutr.* 2023 Dec 6.

PURPOSE: Night shift workers are at risk of making poor food choices: e.g. sleep deprivation may lead to higher food intake with innate preferred tastes, such as sweet, savoury and fatty foods. Therefore, better insight in dietary taste patterns of night shift workers may improve the understanding of their

food choices. METHODS: This observational study assessed dietary taste patterns of 120 female night shift working nurses and compared them to 307 women of a reference population. Dietary intake, assessed with 24-h dietary recalls, was combined with a taste intensity database, including taste profiles of 557 foods. The contribution to the daily intake of 6 taste clusters was assessed: fat, neutral, sweet/fat, sweet/sour, salt/umami/fat and bitter. RESULTS: During night shifts, nurses consumed a significantly higher energy percentage (en%) of 'neutral' (5.9 en%), 'sweet/sour' (8.1 en%) and 'sweet/fat' (6.5 en%) tasting foods and a lower en% of 'fat' (- 17.1 en%) and 'bitter' (- 2.1 en%) tasting foods than outside the night shift. They consumed a larger en% from foods with a 'sweet/sour' (1.9 en%) taste and a lower en% from foods with a 'bitter' (- 2.1 en%) taste than the reference population, irrespective of age, BMI and smoking status. A higher en% and gram% of 'fat' tasting foods and a higher gram% 'fat/salt/umami' tasting foods were associated with lower diet quality. CONCLUSION: Our results only partly support our hypothesis that nurses would select foods with more innate taste preferences. In addition, fat and savoury tasting foods were negatively associated with their diet quality.

[Lien vers l'article](#)

The Effects of Shift Work on the Immune System: A Narrative Review.

Thorkildsen MS, Gustad LT, Damås JK. *Sleep Sci.* 2023 Sep;16(3):e368-e74.

Working a shift work schedule has been hypothesized to have negative effects on health. One such described consequence is altered immune response and increased risk of infections. Former reviews have concluded that more knowledge is needed to determine how shift work affects the immune system. Since the last review focusing on this subject was published in 2016, new insight has emerged. We performed a search of the topic in PubMed, Scopus and Embase, identifying papers published after 2016, finding a total of 13 new studies. The articles identified showed inconsistent effect on immune cells, cytokines, circadian rhythms, self-reported infections, and vaccine response as a result of working a shift schedule. Current evidence suggests working shifts influence the immune system, however the clinical relevance and the mechanism behind this potential association remains elusive. Further studies need to include longitudinal design and objective measures of shift work and immune response.

[Lien vers l'article](#)

Does Long-Term Night Shift Work Cause Dry Eye in Hospital Nurses?

Bouyeh A, Hashemi H, Alizadeh Y, Jafarzadehpur E, Mirzajani A, Ostadimoghaddam H, et al. *J Ophthalmic Vis Res.* 2023 Oct-Dec;18(4):351-8.

PURPOSE: To determine the long-term effects of night shift work on dry eye in hospital nurses. METHODS: Each participant was evaluated four times, including at the beginning of the day shift (8 am), at the end of the day shift (2 pm), at the beginning of the night shift (8 pm), and at the end of the night shift (8 am), using the tear break-up time (TBUT) test and ocular surface disease index (OSDI) questionnaire. RESULTS: The results showed significant differences in the TBUT and OSDI between the end of the day shift (2 pm) (10.26, 16.61) and the end of the night shift (8 am) (6.89, 38.59) relative to each other and relative to the beginning of the day and night shifts. As for the correlation between TBUT and OSDI, a significant correlation was found at all measurement times (correlation coefficient: - 0.478, - 0.707, - 0.556, and - 0.365, respectively) ($p < 0.05$). CONCLUSION: The results showed that the severity of dry eye increased after the night shift with variation over a 24-hr period. Moreover, a significant correlation was observed between TBUT and OSDI results at the beginning and at the end of the day and night shifts.

[Lien vers l'article](#)

Cancers

Prostate cancer in workers exposed to night-shift work: two cases recognized by the Korean Epidemiologic Investigation Evaluation Committee.

Park S, Ma S, Seo H, Lee SG, Lee J, Ye S. *Ann Occup Environ Med.* 2023;35:e52.

BACKGROUND: In 2019, the International Agency for Research on Cancer re-evaluated the carcinogenicity of night-shift work and reported that there is limited evidence that night-shift work is carcinogenic for the development of prostate cancer. Therefore, in 2020 and 2021, the Korean Epidemiologic Investigation Evaluation Committee concluded that 2 cases of prostate cancer were occupational diseases related to the night-shift work. Here, we report the 2 cases of prostate cancer in night-shift workers which were first concluded as occupational diseases by the Korean Epidemiologic Investigation Evaluation Committee. **CASE PRESENTATION:** Patient A: A 61-year-old man worked as a city bus driver for approximately 17 years, from 2002 to 2019, and was exposed to night-shift work during this period. In March 2017, the patient was diagnosed with high-grade prostate cancer through core-needle biopsy after experiencing stinging pain lasting for 2 months. Patient B: A 56-year-old man worked as an electrician and an automated equipment operator in a cement manufacturing plant for 35 years from 1976 to 2013 and was exposed to night-shift work during this period. In 2013, the patient was diagnosed with high-grade prostate cancer through core needle biopsy at a university hospital because of dysuria that lasted for 6 months. **CONCLUSIONS:** The 2 workers were diagnosed with high-grade prostate cancer after working night shifts for 17 and 35 years respectively. Additionally, previous studies have reported that high-grade prostate cancer has a stronger relationship with night-shift work than low or medium-grade prostate cancer. Therefore, the Korean Epidemiologic Investigation Evaluation Committee concluded that night-shift work in these 2 patients contributed to the development of their prostate cancer.

[Lien vers l'article](#)

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Effects of working conditions on the perception of night work safety and health effects on nurses.

Yi J, Hong KJ. *Int Nurs Rev.* 2024 Jan 14.

AIM: To examine night working conditions by shift work type and identify the effects of night working conditions on nurses' perceptions of shift work safety and health effects. **BACKGROUND:** Night work is the main factor affecting nurses' health. However, the safety of night working conditions has not been sufficiently examined in previous studies. **METHODS:** This study used a cross-sectional research design and an online survey using a tool released by the Australian Manufacturing Workers' Union, and the responses of 348 shift work nurses in Korea were analyzed. Logistic regression analysis was used to examine the effects of shift work conditions on the perceived safety of night work and health effects. The STROBE reporting guidelines were utilized, and data were collected from December 1 to December 31, 2021. **RESULTS:** The adjusted logistic regression analysis showed that perceived threat to safety and the health effects of shift work were not significant according to shift type. However, night-shift-work nurses who worked alone ($P = 0.003$), lacked an emergency recovery system ($P = 0.026$), and had difficulty commuting perceived a threat to their health ($P = 0.007$). Additionally, nurses who experienced loss of concentration ($P = 0.006$) and inadequate rest time ($P < 0.001$) perceived the

health effects of shift work. DISCUSSION: Urgent monitoring of night work conditions is necessary for the 2-shift work type. Nurses must work night shifts together and an emergency system should be established for their safety. CONCLUSION: Night work conditions should be improved to prevent the hazards of night work and its negative health effects on nurses. IMPLICATIONS FOR NURSING AND HEALTH POLICY: This study suggests the necessity of a policy to enhance night work safety, including emergency coping systems and sufficient inter-shift rest time.

[Lien vers l'article](#)

Latent class analysis of the sleep quality of night shift nurses and impact of shift-related factors on the occupational stress and anxiety.

Yuan MZ, Fang Q. *J Adv Nurs*. 2024 Jan 18.

AIMS: The objective of this study is to explore the various latent categories within the sleep quality of night shift nurses and to investigate whether shift-related factors predispose nurses to higher levels of occupational stress and anxiety. DESIGN: This is a cross-sectional study. METHODS: From November to December 2020, registered nurses from 18 tertiary hospitals and 16 secondary hospitals in Chongqing were selected through convenience sampling for this study. Latent class analysis was used to investigate the sleep quality of nurses working night shifts. Furthermore, univariate analysis and logistic multivariate analysis were utilized to identify the contributing factors to occupational stress and anxiety. RESULTS: The four latent categories of Pittsburgh Sleep Quality Index for night shift nurses were identified as 'Low Sleep Disorder Group' (56.34%), 'Moderate Sleep Disorder Group' (37.27%), 'High Sleep Disorder Non-Reliant on Sleeping medication Group' (4.89%) and 'High Sleep Disorder Reliant on Sleeping medication Group' (1.50%). The results showed that having a night-shift frequency of 3-4 times per month, night-shift durations of 9-12 h, sleep time delay after night shift (≥ 2 h), total sleep time after night shift less than 4 h were shift-related factors that increased the levels of occupational stress and anxiety. CONCLUSION: The sleep quality of night shift nurses demonstrates heterogeneity and can be classified into four latent categories. Higher frequency of night shifts, extended work hours and insufficient rest time are all associated with increased levels of occupational stress and anxiety. IMPACT: By identifying the four latent categories of sleep quality among night shift nurses, this study sheds light on the relationship between sleep patterns and levels of occupational stress and anxiety. These findings have important implications for healthcare institutions in the management of nurse well-being and work schedules. PATIENT OR PUBLIC CONTRIBUTION: No patient or public contribution.

[Lien vers l'article](#)

Learning to Communicate: A Photovoice Study With Intensive Care Residents During Night Shifts in the Intensive Care Unit.

Quintero D, Reinoso Chávez NN, Vallejo J. *Qual Health Res*. 2024 Jan 18:10497323231222388.

This study explored the learning experiences of intensive care residents in an intensive care unit (ICU) during night shifts and the development of communication skills in this community of practice. This action research qualitative study used the photovoice method in four workshops. A group of nine residents shared their learning experiences and collectively analyzed, built, and presented proposals to improve residents' communication skills in the community of practice in which they become intensivists. Participatory thematic analysis was conducted. Students concluded that night shifts in the ICU offered a perfect situational learning environment for communication with one-on-one resident-teacher relationships, less administrative work, and more resident responsibility, improving intensivist identity. Role models, reflective thinking, and teamwork are essential for fostering communication skills among intensivist community members and are all trainable. The results and student suggestions were presented to teachers and decision-makers in the clinic. These photovoice strategies developed

students' abilities to share their critical views and suggestions with decision-makers for subsequent implementation, enhancing their confidence in their learning process, strengthening trust-based relationships with teachers, and improving future intensivists' practice communities.

[Lien vers l'article](#)

The effect of circadian on the productivity of nurses with the mediating role of quality of work life.

Poormoosa Y, Amerzadeh M, Alizadeh A, Kalhor R. *BMC Nurs.* 2024 Feb 2;23(1):89.

BACKGROUND: Circadian rhythms, as an integral part of daily life, govern the scheduling, management, and coordination of living organisms. Given the irregular nature of shift patterns in nurses' work schedules, investigating their implications is paramount to increasing Quality of Work Life (QWL) and productivity. The study aimed to investigate the impact of circadian rhythm on the efficiency of nurses working in hospitals in Qazvin, Iran, with QWL serving as a mediating variable. **METHODS:** This study employed a descriptive-analytical research design, utilizing cross-sectional data collected in 2022-2023 based on the implementation of Structural Equation Modeling (SEM). The number of participants was 378 nurses. The data were obtained by administering a questionnaire and various tools, organized into four sections: demographic information, the Circadian Questionnaire, the Quality of Work Life Questionnaire, and the Nurses' Efficiency Questionnaire. The collected data were subsequently analyzed using SEM techniques within the R software. **RESULTS:** The findings demonstrated statistically significant variations in mean scores about gender and efficiency ($p = 0.008$), marital status and efficiency ($p = 0.000$), and employment type and efficiency ($p = 0.002$) among the study participants. There was a significant association between shift patterns and QWL ($p = 0.004$). Expressly, the confirmed results indicated a direct impact of circadian on QWL (with a path coefficient of 0.013), as well as an indirect impact on efficiency mediated by the variable QWL (with a path coefficient of 0.037) ($p < 0.05$). **CONCLUSION:** Due to the critical role of nurses in the healthcare system, implementing strategies that promote their efficiency is paramount. Therefore, managers can create an environment that enhances nurses' productivity by improving methods that positively impact their QWL.

[Lien vers l'article](#)

Differences in Functional Activity and Connectivity in the Right Frontoparietal Network between Nurses Working Long-Term Shifts and Fixed Day Shifts.

Dong Y, Wu X, Zhou Y, Qiu K. *J Integr Neurosci.* 2024 Jan 15;23(1):9.

OBJECTIVES: To investigate the differences in functional brain activity and connectivity between nurses working long-term shifts and fixed day shift and explore their correlations with work-related psychological conditions. **METHODS:** Thirty-five nurses working long-term shifts and 35 nurses working fixed day shifts were recruited. After assessing work-related psychological conditions, such as burnout and perceived stress of these two groups of nurses, amplitude of low-frequency fluctuations (ALFF) and functional connectivity (FC) analyses were performed to investigate the between-group differences in brain functional activity and connectivity. Furthermore, correlation analysis between the ALFF/FC metrics and psychological conditions was conducted. **RESULTS:** Compared with nurses working fixed day shifts, nurses working long-term shifts showed higher levels of burnout, perceived stress, and depression scores; lower z-transformed ALFF (zALFF) values in the right dorsolateral prefrontal cortex (dlPFC), right superior parietal lobule (SPL), and right anterior cingulate cortex (ACC); and higher zALFF values in the right middle temporal gyrus (voxel-level $p < 0.001$, cluster-level $p < 0.05$, gaussian random field (GRF) correction), as well as lower FC values in the right dlPFC-right SPL and right dlPFC-right ACC ($p < 0.05$, false discovery rate (FDR) corrected). Moreover, the FC values in the right dlPFC-right SPL were negatively correlated with the perceived stress score in nurses working long-term shifts ($p < 0.05$, FDR corrected). **CONCLUSIONS:** This study demonstrated that nurses working long-term shifts had lower functional activity and weaker functional connectivity in the right frontoparietal

network, which mainly includes the right dlPFC and right SPL, than those working on regular day shift. The current findings provide new insights into the impacts of long-term shift work on nurses' mental health from a functional neuroimaging perspective.

[Lien vers l'article](#)

The relationship of shift work disorder with symptoms of depression, anxiety, and stress.

Chang MJ, Vidafar P, Birk JL, Shechter A. *J Affect Disord Rep.* 2024 Jan;15.

Shift workers commonly suffer from disturbed sleep, which is known to affect mental health in other populations. Shift work disorder (SWD) is characterized by complaints of insomnia and/or excessive daytime sleepiness temporally associated with working non-standard schedules that occur during the usual time for sleep. Few studies have explored the extent to which workers with vs. without SWD experience worse mental health. We administered the Shift Work Disorder Screening Questionnaire to 60 adults engaged in various shift work schedules to categorize workers as being at high or low risk for SWD. Mental health outcomes were measured using the Depression Anxiety Stress Scale-21 (DASS-21). Linear regression was performed for each DASS-21 subscale, adjusting for age, sex, shift type, sleep duration, and frequency of alcohol use. Most participants (55 %) were at high risk for SWD. High-risk participants had higher depressive symptoms than low-risk participants, $B = 3.59$, 95 % CI [0.54, 6.65], $p = .02$. The estimated value for those at high risk for SWD corresponded to clinically significant mild depressive symptoms, ($M = 13.43$), compared to those at low risk, ($M = 9.84$). High risk for SWD was marginally associated with increased stress symptoms, $B = 2.48$, 95 % CI [-0.06, 5.02], $p = .06$. Our findings add to the body of evidence that SWD is associated with poor mental health outcomes. Providing interventions specific to the sleep impacts of SWD, including tailored cognitive behavioral therapy for insomnia, may improve shift workers' mental health.

[Lien vers l'article](#)

The impact of night shift stress and sleep disturbance on nurses quality of life: case in Palestine Red Crescent and Al-Ahli Hospital.

Al-Hrinat J, Al-Ansi AM, Hendi A, Adwan G, Hazaimah M. *BMC Nurs.* 2024 Jan 8;23(1):24.

BACKGROUND: Nurses play a vital role in providing round-the-clock care to patients, but the challenges associated with working night shifts can have significant implications for their well-being and quality of life. **METHODS:** This cross-sectional study aimed to investigate the impact of night shift stress and sleep disturbance on the quality of life among nurses working in Palestine Red Crescent Society and Al-Ahli Hospital. Convenience sampling was used to recruit 189 full-time registered nurses with at least one year of job experience. The participants completed a questionnaire assessing night shift stress, sleep disturbance, and quality of life. Descriptive statistics, correlation analysis, and path analysis were conducted to analyze the data. **RESULTS:** The results reveal that quality of life has positive and low relationship with both night shift stress and sleep disturbances. Results also reveal that night shift stress had a direct negative impact on the quality of life of nurses. Sleep disturbance was found to mediate the relationship between night shift stress and quality of life, indicating that higher levels of night shift stress were associated with increased sleep disturbance, which, in turn, led to poorer quality of life outcomes. **CONCLUSION:** These findings highlight the importance of addressing night shift stress and sleep disturbance among nurses to enhance their well-being and improve the quality of care provided to patients. In conclusion, this study contributes to the existing literature by demonstrating the detrimental effects of night shift stress and sleep disturbance on the quality of life of nurses. It emphasizes the importance of implementing interventions and creating supportive work environments that address the unique challenges faced by nurses working night shifts.

[Lien vers l'article](#)

Santé psychique

Latent class analysis of the sleep quality of night shift nurses and impact of shift-related factors on the occupational stress and anxiety.

Yuan MZ, Fang Q. *J Adv Nurs*. 2024 Jan 18.

AIMS: The objective of this study is to explore the various latent categories within the sleep quality of night shift nurses and to investigate whether shift-related factors predispose nurses to higher levels of occupational stress and anxiety. **DESIGN:** This is a cross-sectional study. **METHODS:** From November to December 2020, registered nurses from 18 tertiary hospitals and 16 secondary hospitals in Chongqing were selected through convenience sampling for this study. Latent class analysis was used to investigate the sleep quality of nurses working night shifts. Furthermore, univariate analysis and logistic multivariate analysis were utilized to identify the contributing factors to occupational stress and anxiety. **RESULTS:** The four latent categories of Pittsburgh Sleep Quality Index for night shift nurses were identified as 'Low Sleep Disorder Group' (56.34%), 'Moderate Sleep Disorder Group' (37.27%), 'High Sleep Disorder Non-Reliant on Sleeping medication Group' (4.89%) and 'High Sleep Disorder Reliant on Sleeping medication Group' (1.50%). The results showed that having a night-shift frequency of 3-4 times per month, night-shift durations of 9-12 h, sleep time delay after night shift (≥ 2 h), total sleep time after night shift less than 4 h were shift-related factors that increased the levels of occupational stress and anxiety. **CONCLUSION:** The sleep quality of night shift nurses demonstrates heterogeneity and can be classified into four latent categories. Higher frequency of night shifts, extended work hours and insufficient rest time are all associated with increased levels of occupational stress and anxiety. **IMPACT:** By identifying the four latent categories of sleep quality among night shift nurses, this study sheds light on the relationship between sleep patterns and levels of occupational stress and anxiety. These findings have important implications for healthcare institutions in the management of nurse well-being and work schedules. **PATIENT OR PUBLIC CONTRIBUTION:** No patient or public contribution.

[Lien vers l'article](#)

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[Lien vers l'article](#)

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[Lien vers l'article](#)

Troubles cognitifs et de la vigilance

The association between proportion of night shifts and musculoskeletal pain and headaches in nurses: a cross-sectional study.

Stavås JA, Nilsen KB, Matre D. *BMC Musculoskelet Disord.* 2024 Jan 16;25(1):67.

BACKGROUND AND PURPOSE: Shift work is associated with musculoskeletal pain and headaches, but little is known about how the intensity of shift work exposure is related to musculoskeletal pain and headaches. This study aimed to investigate whether a higher proportion of night shifts is associated with a higher occurrence of musculoskeletal pain and headaches. Furthermore, to investigate whether sleep duration can mediate this potential association. **METHOD:** The study included 684 nurses in rotating shift work who responded to a daily questionnaire about working hours, sleep, and pain for 28 consecutive days. The data were treated cross-sectionally. **RESULTS:** A negative binomial regression analysis adjusted for age and BMI revealed that working a higher proportion of night shifts is not associated with a higher occurrence of musculoskeletal pain and headaches. On the contrary, those working $\geq 50\%$ night shifts had a significantly lower occurrence of pain in the lower extremities than those who worked $< 25\%$ night shifts (IRR 0.69 95% CI 0.51, 0.94). There was no indication of a mediation effect with total sleep time (TST). **CONCLUSION:** The results of this study indicate that working a higher proportion of night shifts is not associated with a higher occurrence of musculoskeletal pain and headaches.

[Lien vers l'article](#)

Latent class analysis of the sleep quality of night shift nurses and impact of shift-related factors on the occupational stress and anxiety.

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[Lien vers l'article](#)

Estimating vigilance from the pre-work shift sleep using an under-mattress sleep sensor.

Manners J, Kemps E, Guyett A, Stuart N, Lechat B, Catchside P, Scott H. *J Sleep Res*. 2024 Jan 7:e14138.

Predicting vigilance impairment in high-risk shift work occupations is critical to help to reduce workplace errors and accidents. Current methods rely on multi-night, often manually entered, sleep data. This study developed a machine learning model for predicting vigilance errors based on a single prior sleep period, derived from an under-mattress sensor. Twenty-four healthy volunteers (mean [SD] age = 27.6 [9.5] years, 12 male) attended the laboratory on two separate occasions, 1 month apart, to compare wake performance and sleep under two different lighting conditions. Each condition occurred over an 8 day protocol comprising a baseline sleep opportunity from 10 p.m. to 7 a.m., a 27 h wake period, then daytime sleep opportunities from 10 a.m. to 7 p.m. on days 3-7. From 12 a.m. to 8 a.m. on each of days 4-7, participants completed simulated night shifts that included six 10 min psychomotor vigilance task (PVT) trials per shift. Sleep was assessed using an under-mattress sensor. Using extra-trees machine learning models, PVT performance (reaction times < 500 ms, reaction, and lapses) during each night shift was predicted based on the preceding daytime sleep. The final extra-trees model demonstrated moderate accuracy for predicting PVT performance, with standard errors (RMSE) of 19.9 ms (reaction time, 359 [41.6]ms), 0.42 reactions/s (reaction speed, 2.5 [0.6] reactions/s), and 7.2 (lapses, 10.5 [12.3]). The model also correctly classified 84% of trials containing ≥ 5 lapses (Matthews correlation coefficient = 0.59, F1 = 0.83). Model performance is comparable to current fatigue prediction models that rely upon self-report or manually entered data. This efficient approach may help to manage fatigue and safety in non-standard work schedules.

[Lien vers l'article](#)

Differences in Functional Activity and Connectivity in the Right Frontoparietal Network between Nurses Working Long-Term Shifts and Fixed Day Shifts.

Dong Y, Wu X, Zhou Y, Qiu K. *J Integr Neurosci*. 2024 Jan 15;23(1):9.

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[Lien vers l'article](#)

Sleep and fatigue management strategies: How nurses, midwives and paramedics cope with their shift work schedules-a qualitative study.

Booker LA, Fitzgerald J, Mills J, Bish M, Spong J, Deacon-Crouch M, Skinner TC. *Nurs Open*. 2024 Jan;11(1):e2099.

AIMS: To understand the benefits and challenges of shift work, and the coping strategies used by nurses, midwives and paramedics to manage the impact of shift work on sleep and fatigue from shift work. **DESIGN:** A single case study with embedded units. **METHODS:** Twenty-seven participants were interviewed exploring their shift work experiences, coping strategies used to improve sleep, and what their recommendations are for improving shift work management. Interviews were completed between November and December 2022. **RESULTS:** Participants enjoyed the lifestyle, flexibility and financial rewards offered by working shift work. However, fatigue and sleep deprivation undermined these benefits, as it impacted their ability to enjoy social and family events. There were also concerns of long-term health consequences of shift work and delivery of care. Changes to rostering practices and sleep and shift work education were common recommendations. **CONCLUSION:** This study provides insights on how healthcare professionals manage sleep and fatigue due to shift work and the inadequate support. There is absence of adequate policies, processes and training at an organizational, academic and personal level on how to best manage sleep and fatigue when working shift work. Future research is needed to explore how to equip healthcare shift workers with the skills to successfully manage their schedules to mitigate the negative impact that poor sleep and fatigue has on the health and safety of themselves and their patients. **IMPLICATIONS FOR THE PROFESSION AND/OR PATIENT CARE:** Understanding the specific challenges of shift work and how workers manage their shift work schedules is critical for improving the health and safety of themselves and their patients. This study identified that there is insufficient training regarding sleep and shift work management strategies,

potentially leading to occupational health and safety concerns. Further education and training to equip staff with the necessary information, training and guidance to staff on how to reduce fatigue risk is required. **PATIENT OR PUBLIC CONTRIBUTION:** This study involved healthcare shift workers in semi-structured interviews. Data gathered from a previous survey that participants were involved in helped shape the interview topics and the study design.

[Lien vers l'article](#)

Sleep quality and fatigue among nurses working in high-acuity clinical settings in Saudi Arabia: a cross-sectional study.

Alameri RA, Almulla HA, Al Swyan AH, Hammad SS. *BMC Nurs.* 2024 Jan 18;23(1):51.

BACKGROUND: Poor sleep quality is prevalent among nurses worldwide. Around two-thirds of nurses doing shift work are known to experience sleep problems and fatigue. Fatigue and sleep problems are linked to poor performance, impaired alertness, injuries, chronic diseases, compromised healthcare quality, and medical errors, all of which detrimentally impact nurses and threaten patients' safety. This area of research has received insufficient attention in Saudi Arabia; therefore, the purpose of this study was to examine the levels of sleep quality and perceived fatigue and their association among nurses working in acute care settings in comprehensive hospitals in Saudi Arabia. **METHODS:** A descriptive cross-sectional study using the Pittsburgh Sleep Quality Index and Chalder Fatigue Scale. Data was obtained via an online questionnaire that was distributed to nurses using the QuestionPro platform through hospital administrators, social media (WhatsApp), and personal contact. **RESULTS:** A total of 173 nurses completed the online survey. Most participants reported poor sleep quality ($n = 127$, 73.4%) and severe perceived fatigue ($n = 156$, 90.2%). Furthermore, the study revealed a significant correlation between the overall sleep disturbance and fatigue global scores ($r = 0.57$, $P < 0.001$), indicating that poor sleep quality was significantly associated with higher fatigue levels among the study sample. **CONCLUSIONS:** The current study found a significant association between sleep quality and severe fatigue in nurses working in high acute care settings in Saudi Arabia. It is very clear from the results that nurses are experiencing poor sleep and severe fatigue, which in turn, will negatively impact the nurse's quality of life and patient safety.

[Lien vers l'article](#)

The impact of night shift stress and sleep disturbance on nurses quality of life: case in Palestine Red Crescent and Al-Ahli Hospital.

Al-Hrinat J, Al-Ansi AM, Hendi A, Adwan G, Hazaimah M. *BMC Nurs.* 2024 Jan 8;23(1):24.

BACKGROUND: Nurses play a vital role in providing round-the-clock care to patients, but the challenges associated with working night shifts can have significant implications for their well-being and quality of life. **METHODS:** This cross-sectional study aimed to investigate the impact of night shift stress and sleep disturbance on the quality of life among nurses working in Palestine Red Crescent Society and Al-Ahli Hospital. Convenience sampling was used to recruit 189 full-time registered nurses with at least one year of job experience. The participants completed a questionnaire assessing night shift stress, sleep disturbance, and quality of life. Descriptive statistics, correlation analysis, and path analysis were conducted to analyze the data. **RESULTS:** The results reveal that quality of life has positive and low relationship with both night shift stress and sleep disturbances. Results also reveal that night shift stress had a direct negative impact on the quality of life of nurses. Sleep disturbance was found to mediate the relationship between night shift stress and quality of life, indicating that higher levels of night shift stress were associated with increased sleep disturbance, which, in turn, led to poorer quality of life outcomes. **CONCLUSION:** These findings highlight the importance of addressing night shift stress and sleep disturbance among nurses to enhance their well-being and improve the quality of care provided to patients. In conclusion, this study contributes to the existing literature by demonstrating

the detrimental effects of night shift stress and sleep disturbance on the quality of life of nurses. It emphasizes the importance of implementing interventions and creating supportive work environments that address the unique challenges faced by nurses working night shifts.

[Lien vers l'article](#)

HA comme facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Aucun article dans ce bulletin.

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Symptoms of depression and anxiety and stress among postgraduate trainees in Sri Lanka: Risk factors and implications for practice.

Alles PS, Amarakoon L, Rohanachandra YM. *Indian J Psychiatry*. 2023 Nov;65(11):1190-4.

High workload, long working hours, and the need to study and work simultaneously put postgraduate trainee doctors at a high risk of depression, anxiety, and stress. A cross-sectional descriptive study was conducted among all postgraduate trainees registered at the Postgraduate Institute of Medicine (PGIM), Sri Lanka, using the 21-item Depression Anxiety Stress Scale (DASS-21). Eleven-point two percent (11.2%) had depressive symptoms, 8.9% had anxiety symptoms, and 1.9% had high levels of stress. Being female, having a past or current mental illness, not being supported by the trainers, being unfairly treated by trainers, dissatisfaction with the work environment, difficulty in coping with long working hours, and poor peer support were significantly associated with symptoms of depression and anxiety, and stress ($P < 0.01$). Given the association between psychological distress and the characteristics of training and work environment, the postgraduate training programs should be reviewed to ensure the psychological well-being of trainees.

[Lien vers l'article](#)

Santé psychique**Job stressors in relation to burnout and compromised sleep among academic physicians in India.**

Belkić K, Rustagi N. *Work*. 2024 Jan 5.

BACKGROUND: Burnout among physicians, especially in the academic setting, is an urgent concern, with adequate sleep one of the key focal points. **OBJECTIVE:** To identify job stressors contributing to burnout and compromised sleep among academic physicians, using a comprehensive, theory-based instrument, the Occupational Stressor Index (OSI), whose specific form was created 'for physicians by physicians'. **METHODS:** This parallel mixed-methods cross-sectional investigation was conducted among 109 physicians employed in a public teaching hospital, Jodhpur, India. Work conditions were evaluated by the physician-specific OSI (part I). The Copenhagen Burnout Index and Pittsburgh Sleep Quality Index (PSQI) were the outcome instruments (part II). Seventy-six physicians completed parts I and II. **RESULTS:** The physicians were from wide-ranging specialties, and 82% of the cohort were residents. Mean total OSI scores were 87.4 ± 8.1 , with unit-change yielding adjusted odds-ratios (95% confidence-intervals) for personal (1.10 (1.02-1.18)) and work-related burnout (1.12 (1.04-1.22)), and PSQI (1.09 (1.01-1.17)). Significant multivariable associations with burnout and/or sleep indices included: working 7 days/week, lacking work-free vacation, insufficient rest breaks, interruptions, many patients in intensive-care, no separate time for non-clinical duties, pressure to publish, injury/suicide attempts of colleagues/staff, performing pointless tasks. The latter were described as administrative/clerical. Lacking genuine rest breaks was mainly patient-related, further compromised by emergency work and lacking separate time for non-clinical duties. Long workhours and exhausting schedule were cited as most difficult parts of work, while reducing workhours, improving work schedule, and hiring more staff most frequently recommended. **CONCLUSION:** Specific working conditions potentially contributory to burnout and compromised sleep among physicians working in academic medicine are identified using a methodologically-rigorous, in-depth approach. These findings inform evidence-based interventions aimed at preserving physician mental health and work capacity.

[Lien vers l'article](#)

Symptoms of depression and anxiety and stress among postgraduate trainees in Sri Lanka: Risk factors and implications for practice.

Alles PS, Amarakoon L, Rohanachandra YM. *Indian J Psychiatry*. 2023 Nov;65(11):1190-4.

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[Lien vers l'article](#)

Troubles cognitifs et de la vigilance**Job stressors in relation to burnout and compromised sleep among academic physicians in India.**

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[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

Risk factor analysis and risk prediction study of obesity in steelworkers: model development based on an occupational health examination cohort dataset.

Zhao Z, Lu H, Meng R, Si Z, Wang H, Wang X, et al. *Lipids Health Dis.* 2024 Jan 8;23(1):10.

BACKGROUND: Obesity is increasingly recognized as a grave public health concern globally. It is associated with prevalent diseases including coronary heart disease, fatty liver, type 2 diabetes, and dyslipidemia. Prior research has identified demographic, socioeconomic, lifestyle, and genetic factors as contributors to obesity. Nevertheless, the influence of occupational risk factors on obesity among workers remains under-explored. Investigating risk factors specific to steelworkers is crucial for early detection, prediction, and effective intervention, thereby safeguarding their health. **METHODS:** This research utilized a cohort study examining health impacts on workers in an iron and steel company in Hebei Province, China. The study involved 5469 participants. By univariate analysis, multifactor analysis, and review of relevant literature, predictor variables were found. Three predictive models-XG Boost, Support Vector Machine (SVM), and Random Forest (RF)-were employed. **RESULTS:** Univariate analysis and cox proportional hazard regression modeling identified age, gender, smoking and drinking habits, dietary score, physical activity, shift work, exposure to high temperatures, occupational stress, and carbon monoxide exposure as key factors in the development of obesity in steelworkers. Test results indicated accuracies of 0.819, 0.868, and 0.872 for XG Boost, SVM, and RF respectively. Precision rates were 0.571, 0.696, and 0.765, while recall rates were 0.333, 0.592, and 0.481. The models achieved AUCs of 0.849, 0.908, and 0.912, with Brier scores of 0.128, 0.105, and 0.104, log losses of 0.409, 0.349, and 0.345, and calibration-in-the-large of 0.058, 0.054, and 0.051, respectively. Among these, the Random Forest model demonstrated superior performance. **CONCLUSIONS:** The research indicates that obesity in steelworkers results from a combination of occupational and lifestyle factors. Of the models tested, the Random Forest model exhibited superior predictive ability, highlighting its significant practical application.

[Lien vers l'article](#)

A Clustering Study of Dietary Patterns and Physical Activity among Workers of the Uruguayan State Electrical Company.

Medina-Vadora MM, Plaza-Diaz J, Llorente-Cantarero FJ, Severi C, Lecot C, Ruiz-López MD, Gil Á. *Nutrients.* 2024 Jan 19;16(2).

Recent studies have shown that certain nutrients, specific food groups, or general dietary patterns (DPs) can promote health and prevent noncommunicable chronic diseases (NCCDs). Both developed and developing countries experience a high prevalence of NCCDs due to poor lifestyle habits, DPs, and low physical activity levels. This study aims to examine the dietary, physical activity, sociodemographic, and lifestyle patterns of Uruguayan State Electrical Company workers (the IN-UTE study). A total of 2194 workers participated in the study, providing information about their sociodemographics,

lifestyles, and dietary habits through different questionnaires. To identify DPs from 16 food groups, principal component analysis (PCA) was performed. A hierarchical cluster algorithm was used to combine food groups and sociodemographic/lifestyle variables. Four DPs were extracted from the data; the first DP was related to the intake of energy-dense foods, the second DP to the characteristics of the job, the third DP to a Mediterranean-style diet, and the fourth DP to age and body mass index. In addition, cluster analysis involving a larger number of lifestyle variables produced similar results to the PCA. Lifestyle and sociodemographic factors, including night work, working outside, and moderate and intense PA, were significantly correlated with the dietary clusters, suggesting that working conditions, socioeconomic status, and PA may play an important role in determining DPs to some extent. Accordingly, these findings should be used to design lifestyle interventions to reverse the appearance of unhealthy DPs in the UTE population.

[Lien vers l'article](#)

Nonrestorative Sleep and Type 2 Diabetes Incidence: the Aichi Workers' Cohort Study.

Lin J, Song Z, Li Y, Chiang C, Hirakawa Y, Nakano Y, et al. *J Epidemiol.* 2024 Jan 27.

BACKGROUND: The term "nonrestorative sleep (NRS)" refers to unrefreshed feeling at wake-up and is a domain of poor sleep quality. Previous researches have demonstrated that NRS is linked to a number of diseases and adverse health outcomes, but less is known regarding the link between NRS and diabetes, particularly in Japanese. **METHODS:** We studied 3665 middle-aged male participants of the Aichi Workers' Cohort Study who were followed-up from 2002 to 2019. Cox proportional hazards models estimated hazard ratios (HRs) and 95% confidence intervals (CIs) of incident type 2 diabetes mellitus (T2DM) in relation to NRS adjusted for potential confounding variables. **RESULTS:** During a median follow-up of 14.6 years, 421 type 2 diabetes cases were identified. Participants with NRS had a higher crude incidence rate of T2DM (11.2/1,000 person-years), compared to participants without NRS (9.3/1,000 person-years). In the fully adjusted model, individuals who reported having NRS had a significantly higher risk of developing T2DM (HR: 1.36, 95% CI: 1.10-1.67). The association was observed only in participants under 50 years old (HR: 1.82, 95% CI: 1.36-2.43), not in the older (50 years or older) participants (P for interaction = 0.025). In contrast, stratified analyses by the presence of shift work, obesity or sleep duration showed similar associations in all the strata. **CONCLUSIONS:** NRS was associated with higher risk of T2DM in middle-aged Japanese male workers independent of a variety of lifestyle factors and other sleep problems.

[Lien vers l'article](#)

The long-term effect of work schedule, shift work disorder, insomnia and restless legs syndrome on headache among nurses: A prospective longitudinal cohort study.

Kristoffersen ES, Pallesen S, Waage S, Bjorvatn B. *Cephalalgia.* 2024 Jan;44(1):3331024231226323.

BACKGROUND: The preset study aimed to explore whether work schedules and sleep disorders predict the onset of headache. **METHODS:** A longitudinal study was conducted with questionnaire data from 2014 (baseline) and 2017 (follow-up) on work schedule, number of night shifts, number of quick returns, insomnia, shift work disorder (SWD), restless legs syndrome (RLS) and validated headache diagnoses among 1560 Norwegian nurses. Associations were explored by multivariate regression analyses. **RESULTS:** Work related factors at baseline did not predict onset of headache three years later. In the adjusted logistic regressions, insomnia at baseline predicted increased risk of new onset of migraine (odds ratio (OR) = 1.58; 95% confidence interval (CI) = 1.08-2.33), chronic headache (OR = 2.02; 95% CI = 1.04-4.66) and medication-overuse headache (OR = 3.79; 95% CI = 1.26-11.42) at follow-up. SWD at baseline predicted new onset of migraine (OR = 1.64; 95% CI = 1.07-2.50) and RLS at baseline predicted new onset of headache ≥ 1 day per month (OR = 1.55; 95% CI = 1.01-2.36) and migraine (OR = 1.55; 95% CI = 1.03-2.32) at follow-up. No factors predicted tension-type headache.

CONCLUSIONS: Overall, work related factors did not predict the onset of headache three years later, whereas insomnia, SWD and RLS at baseline all increased the risk of future headaches.

[Lien vers l'article](#)

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Prevalence of occupational injury and its associated factors among emergency department physicians in China: A large sample, cross-sectional study.

Wu J, Wang J, Li Q, Gong Y, Luo J, Yin X. *Prev Med.* 2024 Jan 23;180:107878.

BACKGROUND: Medical personnel, particularly emergency department (ED) physicians, face a variety of occupational hazards. However, the current state of occupational injuries among ED physicians remains unknown. This study aimed to assess the occupational injury of Chinese ED physicians and to identify its associated factors. METHODS: From July to August 2018, a cross-sectional survey was conducted in Chinese emergency departments. A structured questionnaire covering sociodemographic characteristics, individual health behaviours, and work-related characteristics was completed by 10,457 ED physicians. Binary logistic regression was used to analyse the factors associated with occupational injuries. RESULTS: In this study, 81.13% of ED physicians reported occupational injuries in the previous 12 months. All participants who had experienced occupational injuries had suffered verbal violence. Among physicians who experienced at least one injury, 76.57% and 71.30% reported injuries sustained while moving patients and from falls, slips, and sprains during office visits, respectively. Occupational injuries were significantly associated with gender, education level, drinking behaviour, sleep quality, the frequency of night shifts per month, self-perceived physician shortage, and work-family conflict. Physicians who experienced effort-reward imbalance were at a higher risk of occupational injury. CONCLUSION: In China, occupational injuries are common among ED physicians. Individual factors as well as work-related factors are independently linked to occupational injuries. To reduce the rate of occupational injuries among ED physicians, health policymakers and healthcare facility managers should consider multi-injury interventions.

[Lien vers l'article](#)

Hand hygiene compliance in a Brazilian COVID-19 unit: the impact of moments and contact precautions.

Valim MD, Rossetto JR, Bortolini J, Herwaldt L. *Antimicrob Resist Infect Control.* 2024 Jan 22;13(1):7.

BACKGROUND: Healthcare-associated infections are among the most common complications during hospitalization. These infections increase morbidity and mortality and they increase length of hospital stay and the cost of healthcare. The aims of our study were to monitor hand hygiene (HH) compliance, HH technique quality and factors related to HH practice among health professionals in a COVID-19 Intensive Care Unit (ICU). METHODS: An observational, prospective study. Between September and

December 2021, we observed 69 healthcare professionals in an eight-bed ICU for patients with COVID-19 in midwestern Brazil. We used the WHO observation form to collect data. The dependent variable was HH compliance and independent variables were professional category, sex, HH quality (3-step technique for at least 15 s), number of HH opportunities observed, observation shift and inappropriate glove use. RESULTS: We observed 1185 HH opportunities. The overall compliance rate was 26.4%, but only 6.5% were performed with the correct 3-step technique for the minimum time. HH compliance was considerably lower for moments "before" tasks (6.7%; 95% CI 4.8%, 9.2%) compared with moments "after" tasks (43.8%; 95% CI 39.9%, 47.8%). The logistic model found that inappropriate glove use, night shift and physicians ($p < 0.001$) were associated with low HH compliance. The infrastructure analysis found that the unit had an insufficient number of alcohol-based handrub (ABHR) dispensers at the point of care and that the mechanism for activating them was poorly designed. CONCLUSIONS: HH compliance was very low. Inappropriate glove use was associated with low compliance and the unit's infrastructure did not support good HH practice. The fact that healthcare professionals were more likely to do HH after tasks, suggests that they use HH to protect themselves rather than the patients. Adequate infrastructure and ongoing health education with a focus on HH while caring for patients in contact precautions are essential for improving HH compliance and patient safety.

[Lien vers l'article](#)

Workplace violence in medical radiation science: A systematic review.

Shah KA, Ng CKC. *Radiography (Lond)*. 2024 Jan 9;30(2):440-7.

INTRODUCTION: According to World Health Organization (WHO), workplace violence (WPV) is a significant issue in healthcare. However, no systematic review on WPV in medical radiation science (MRS) has been published yet. The purpose of this paper is to systematically review prevalence of WPV in MRS and its risk factors. METHODS: Electronic scholarly publication databases, namely EBSCOhost/Cumulative Index of Nursing and Allied Health Literature Ultimate, PubMed/Medline, ScienceDirect, Scopus, and Wiley Online Library were used for literature search to identify articles about WPV in MRS published over last 10 years as per preferred reporting items for systematic reviews and meta-analyses guidelines. To facilitate comparisons of the WPV prevalence and relative importance of individual risk factors across the included studies, their reported absolute figures of findings were used to synthesize respective percentages (if not stated). RESULTS: Twelve papers met the selection criteria and were included. This review shows that the WPV prevalence were 69.2-100 % (whole career) and 46.1-83.0 % (last 12 months) in diagnostic radiography, 63.0-84.0 % (whole career) in radiation therapy, 57.6 % in medical sonography (last 12 months), and 46.8 % (last 6 months) in nuclear medicine. The identified WPV risk factors included intoxicated patients, staff stress, feeling of inadequacy resulting in self-protection, more vulnerable practitioners (female, <40 years old and <5-year experience), working in radiation therapy treatment room, emergency department, examination room, general radiography, public hospital, and non-examination and waiting areas, long patient waiting time, night shift, overcrowding environment, unable to meet patients'/family members' expectations, miscommunication, patient handling, inadequate staff and security measures, interaction with colleagues, and lone working. CONCLUSION: The WPV risk in diagnostic radiography and radiation therapy appears extremely high as a result of the aforementioned risk factors. Nevertheless, these study findings should be used with caution due to potential non-response bias. IMPLICATIONS FOR PRACTICE: A WPV policy should be developed in every clinical workplace. Even if such policy is available, its enforcement including policy awareness boosting, and encouraging incident reporting and support seeking will be essential for reducing WPV. More survey studies based on WHO WPV questionnaire should be conducted for strengthening evidence base.

[Lien vers l'article](#)

Exploring the relationship between family care, organizational support, and resilience on the professional quality of life among emergency nurses: A cross-sectional study.

Tang L, Wang F, Tang T. *Int Emerg Nurs*. 2024 Feb;72:101399.

BACKGROUND: The professional quality of life (ProQOL), encompassing emotional, physical, and psychological well-being, is profoundly influenced by the unique nursing experiences of emergency nurses. Understanding and effectively enhancing their professional well-being are of paramount importance. This study aimed to explore the relationship between family care, organizational support, and resilience with the ProQOL among emergency nurses. **METHODS:** This cross-sectional study, conducted between May 1 and June 1, 2023, involved 118 emergency nurses from Hunan Provincial Brain Hospital. Demographic and work-related information were collected. ProQOL, family care, organizational support and resilience were assessed using validated scales. Statistical analysis was conducted to examine the associations between these variables. **RESULTS:** Significant differences were observed in the two dimensions of ProQOL (compassion satisfaction and burnout) among emergency nurses with different age, marital status, technical titles, work experience and night shift frequency ($P < 0.05$). Furthermore, both organizational support and resilience demonstrated a significant positive correlation with compassion satisfaction, while exhibiting a significant negative correlation with burnout ($P < 0.05$). Additionally, the third dimension of ProQOL (secondary trauma stress) was significantly negatively correlated with resilience ($P < 0.05$). **CONCLUSION:** This study elucidates the pivotal role of organizational support and resilience in influencing the professional quality of life among emergency nurses, highlighting the specific needs of younger and less-experienced practitioners. Our findings lay the groundwork for targeted interventions aimed at enhancing the occupational well-being and job satisfaction of nursing staff.

[Lien vers l'article](#)

A Clustering Study of Dietary Patterns and Physical Activity among Workers of the Uruguayan State Electrical Company.

Medina-Vadora MM, Plaza-Diaz J, Llorente-Cantarero FJ, Severi C, Lecot C, Ruiz-López MD, Gil Á. *Nutrients*. 2024 Jan 19;16(2).

Recent studies have shown that certain nutrients, specific food groups, or general dietary patterns (DPs) can promote health and prevent noncommunicable chronic diseases (NCCDs). Both developed and developing countries experience a high prevalence of NCCDs due to poor lifestyle habits, DPs, and low physical activity levels. This study aims to examine the dietary, physical activity, sociodemographic, and lifestyle patterns of Uruguayan State Electrical Company workers (the IN-UTE study). A total of 2194 workers participated in the study, providing information about their sociodemographics, lifestyles, and dietary habits through different questionnaires. To identify DPs from 16 food groups, principal component analysis (PCA) was performed. A hierarchical cluster algorithm was used to combine food groups and sociodemographic/lifestyle variables. Four DPs were extracted from the data; the first DP was related to the intake of energy-dense foods, the second DP to the characteristics of the job, the third DP to a Mediterranean-style diet, and the fourth DP to age and body mass index. In addition, cluster analysis involving a larger number of lifestyle variables produced similar results to the PCA. Lifestyle and sociodemographic factors, including night work, working outside, and moderate and intense PA, were significantly correlated with the dietary clusters, suggesting that working conditions, socioeconomic status, and PA may play an important role in determining DPs to some extent. Accordingly, these findings should be used to design lifestyle interventions to reverse the appearance of unhealthy DPs in the UTE population.

[Lien vers l'article](#)

The holistic nursing competence and transition shock of newly graduated nurses as the determinants of missed nursing care: The mediation analysis.

Erdat Y, Kuruca-Ozdemir E, Kocoglu-Tanyer D, Duygulu S. *J Clin Nurs*. 2024 Jan 29.

AIMS AND OBJECTIVE: To investigate the determinants of missed nursing care and to analyse the mediating effect of holistic nursing competence on the relationship between transition shock and missed nursing care. **BACKGROUND:** Transition shock of newly graduated nurses is associated with missed nursing care. Previous studies have shown the determinants of missed nursing care among nurses, but little is known about the relationship between missed nursing care, transition shock and holistic nursing competence. **DESIGN:** Descriptive and correlational design. **METHODS:** The study was conducted among newly graduated nurses (n = 201) working in acute care hospitals for 1-12 months. The MISSCARE survey, Holistic Nursing Competence Scale and Nursing Transition Shock Scale were used for data collection, in addition to a sociodemographic question form. Data were analysed using Pearson correlation, multiple regression and mediation analyses. The study was reported following the STROBE checklist. **RESULTS:** The determinants of missed nursing care among newly graduated nurses were sex, unit type, rotating shift work, holding a certificate, holistic nursing competence and transition shock. All these variables explain 35% of the variance in missed nursing care. Holistic nursing competence directly mediated 51.7% of the relationship between transition shock and missed nursing care. **CONCLUSIONS:** Holistic nursing competence may decrease missed nursing care by reducing the effects of transition shock on newly graduated nurses. **RELEVANCE TO CLINICAL PRACTICE:** The study highlighted that newly graduated nurses are an important population regarding missed nursing care. The determinants of missed care should be considered in the nursing care delivery to prevent missed care by newly graduated nurses. Based on the study findings, some recommendations were made for nurse managers and faculty for the orientation program and undergraduate nursing education.

[Lien vers l'article](#)

The current landscape of emergency medicine resident scheduling.

Parsons M, Mannix A, Gore K, Rabalais J, Gottlieb M. *AEM Educ Train*. 2024 Feb;8(1):e10926.

BACKGROUND: The Accreditation Council for Graduate Medical Education (ACGME) and Residency Review Committee oversee resident physician work hours with additional specifics for U.S. emergency medicine (EM) residency programs. While there are maximum work hours, the regulatory bodies do not describe minimum work hours to achieve competency, leading to variable scheduling practices. This study aimed to understand the current landscape of U.S. EM residency scheduling given the expansion of programs, evolution of policies, and increased emphasis on wellness. **METHODS:** We conducted a cross-sectional study to assess current strategies of U.S. EM residency scheduling. The RedCap survey was sent to all ACGME-accredited EM residency programs across the United States via individualized emails between January 10, 2023, and March 15, 2023. Data were combined using Microsoft Excel. **RESULTS:** A total of 138 of 278 (50%) programs responded to the survey. A total of 73.2% of programs were using thirteen 28-day blocks with the remainder using twelve 1-month blocks or reported "other" block scheduling. The number of blocks in the ED increases with each postgraduate year (PGY). For PGY-1 through PGY-3, the most commonly used shift duration was 9 h. The mean total shifts per ED block and hours worked per ED block are as follows: 19 shifts and 185.1 h (PGY-1), 18.2 shifts and 173.9 h (PGY-2), 17.3 shifts and 163.6 h (PGY-3), and 14.8 shifts and 157.2 h (PGY-4). Programs provide a median for 4 weeks of vacation per year of residency. **CONCLUSIONS:** Given the expansion of U.S. EM residency programs, we reevaluated the landscape of resident scheduling. We described scheduling patterns related to night shifts, vacations, requested time off, conference coverage, charting time, and circadian rhythms. Programs should utilize these data as a starting point for setting a clinical experience for their residents.

[Lien vers l'article](#)

Factors Related to Job Continuance of Nurses Who Migrated to Japan: A Cross-Sectional Study.

Shoki R, Kono A, Hirano YO, Barroga E, Ota E, Nagamatsu Y. *Nurs Rep.* 2023 Dec 23;14(1):25-41.

Japan has accepted nurses from Indonesia, the Philippines, and Vietnam under the Economic Partnership Agreement, but nearly half of them have already left the workforce. This study aimed to clarify the factors related to the job continuance of nurses who migrated to Japan under the Economic Partnership Agreement. Our goal was to explore factors specific to migrant nurses and to contribute to the development of support measures for them. This research was a cross-sectional study in which a web-based questionnaire and interview were conducted at a single point in time. Migrant nurses (n = 40) participated in the web-based questionnaire survey. Of those, nine nurses were also interviewed. Spearman's rank correlation coefficient was used to establish correlations, and qualitative descriptive analysis was used to analyse interviews. The questionnaire survey results revealed the content of work, human relationships in the workplace, the number of night shifts, and satisfaction with the balance between work and private life were significantly and negatively correlated with the Intention to Quit scale total score. All correlation coefficients were less than 0.5, indicating weak correlations. Three categories emerged from the interviews as positive factors related to job continuance: "generous support from the workplace", "beneficial nursing experience in Japan", and "determination to live in Japan". A good working environment, generous support from the supervisor and colleagues, high values of nursing in Japan, and desire to migrate to Japan were the factors that had a positive effect on migrant nurses' job continuance in Japan. Understanding the characteristics of migrant nurses and providing generous support will enable them to continue working in Japan. This study was not registered.

[Lien vers l'article](#)

Quiet Quitting among Nurses Increases Their Turnover Intention: Evidence from Greece in the Post-COVID-19 Era.

Galanis P, Moisoglou I, Malliarou M, Papathanasiou IV, Katsiroumpa A, Vraka I, et al. *Healthcare (Basel).* 2023 Dec 29;12(1).

As turnover intention is a strong determinant of actual turnover behavior, scholars should identify the determinants of turnover intention. In this context, the aim of this study was to assess the effect of quiet quitting on nurses' turnover intentions. Additionally, this study examined the impact of several demographic and job characteristics on turnover intention. A cross-sectional study with 629 nurses in Greece was conducted. The data were collected in September 2023. Quiet quitting was measured with the "Quiet Quitting" scale. In this study, 60.9% of nurses were considered quiet quitters, while 40.9% experienced high levels of turnover intention. Multivariable regression analysis showed that higher levels of quiet quitting increased turnover intention. Moreover, this study found that turnover intention was higher among females, shift workers, nurses in the private sector, and those who considered their workplace understaffed. Also, clinical experience was associated positively with turnover intention. Since quiet quitting affects turnover intention, organizations, policymakers, and managers should address this issue to improve nurses' intentions to stay at their jobs.

[Lien vers l'article](#)

Santé psychique

Risk and prediction of job burnout in responding nurses to public health emergencies.

Wang L, Zhang X, Zhang M, Wang L, Tong X, Song N, et al. *BMC Nurs.* 2024 Jan 17;23(1):46.

BACKGROUND: In public health emergencies, nurses are vulnerable to adverse reactions, especially job burnout. It is critical to identify nurses at risk of burnout early and implement interventions as early as possible. **METHODS:** A cross-sectional survey of the hospitals in Xiangyang City was conducted in January, 2023 using stratified cluster sampling. Anonymized data were collected from 1584 working nurses. The Impact of Events Scale-Revised (IES-R) and the Chinese version of the Maslach Burnout Inventory-General Survey (MBI-GS) were used to evaluate the post-traumatic stress disorder (PTSD) and burnout of nurses in public health emergencies. Logistic regression analysis was established to screen for risk factors of burnout, and a nomogram was developed to predict the risk of burnout. A calibration curve and the area under the receiver operating characteristic (ROC) curve were used to validate the nomogram internally. **RESULTS:** This study showed that only 3.7% of nurses were completely free of PTSD during a public health emergency. We found that PTSD varied by age, marital status, procreation status, length of service, employee status, and whether working in the ICU. The nurses aged 30 ~ 40 years old, single, married without children, non-regular employees, worked for less than three years or worked in the ICU had higher levels of PTSD. Regarding the prevalence of burnout, 27.4%, 48.5%, and 18.6% of nurses had a high level of emotional exhaustion (EE), depersonalization (DP), and diminished personal accomplishment (PA), respectively. There, 31.1% of nurses had more than two types of job burnout. The number of night shifts, the type of hospital, marital status, and the severity of PTSD were all associated with higher rates of exhaustion among nurses. As a graphical representation of the model, a nomogram was created and demonstrated excellent calibration and discrimination in both sets (AUC = 0.787). **CONCLUSIONS:** This study confirmed the PTSD and burnout are common problems for in-service nurses during public health emergencies and screened out the high-risk groups of job burnout. It is necessary to pay more attention nurses who are single and working in general hospitals with many night shifts, especially nurses with severe PTSD. Hospitals can set up nurses' personal health records to give timely warnings to nurses with health problems, and carry out support interventions to relieve occupational stress.

[Lien vers l'article](#)

Sleep quality, coping, and related depression: A cross-sectional study of Turkish nurses.

Topal Kılınçarslan G, Özcan Algül A, Gördeles Beşer N. *Int Nurs Rev.* 2024 Jan 19.

BACKGROUND: The sleep quality of nurses affects both their health and standard of nursing care. Working conditions, depression, and coping potential can also lead to sleep problems. **INTRODUCTION:** Sleep plays a crucial role in overall health at every stage of life. The purpose of this study is to determine the effect of sleep quality, depression, and coping mechanisms on the performance of nurses, whose sleep quality is strongly affected due to shift-based work. **METHODS:** The sample of this descriptive correlational study consisted of 133 healthcare workers. Data were collected using the Personal Information Form, Beck Depression Inventory (BDI), Coping Response Inventory (CRI), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS) and evaluated using the t test, Mann-Whitney U test, one-way ANOVA, Enter method, and linear regression. **FINDINGS:** One in three nurses reported having poor-quality sleep, and one in two nurses said they felt sleepy during the day. With declining sleep quality, the nurses' ability to cope with stress diminished, and their degree of depression increased. **DISCUSSION:** The nurses' financial situation and level of depression were key factors that influenced their quality of sleep and capacity to handle stress. To improve nurses' sleep, the shift pattern needs to change. **CONCLUSION:** To increase the quantity of sleep and enhance mental health, changes should be made to the shift schedules of nurses to allow for appropriate rest and reduce daytime sleepiness. **IMPLICATIONS FOR NURSING PRACTICE AND POLICIES:** Improved working

conditions for nurses and updated nursing standards are required to improve nurses health and wellbeng.

[Lien vers l'article](#)

Anxiety Symptoms and Associated Psychological and Job-Related Factors Among Hospital Nurses.

Seo EH, Lee JH, MacDougall A, Liu N, Hofkirchner A, Sharma S, et al. *Psychiatry Investig.* 2024 Jan;21(1):100-8.

OBJECTIVE: Recently, burnout and mental health issues regarding nurses are reported increasingly. This study aimed to investigate the prevalence of anxiety symptoms among hospital nurses and determine their association with psychological and job-related factors. **METHODS:** Data on demographics, job-related characteristics, burnout, Type A behavior patterns, self-esteem, and happiness were collected from 515 nurses working at a university hospital in Korea. Anxiety symptoms were assessed using the anxiety subscale of the Hospital Anxiety and Depression Scale, with scores of 8 or higher indicating the presence of anxiety symptoms. Demographic, job-related, and psychological factors were compared according to the presence of anxiety. Logistic regression was conducted to identify factors associated with anxiety symptoms. **RESULTS:** Two hundred and four (39.6%) participants had anxiety symptoms. Self-esteem and happiness were associated with a lower risk of anxiety symptoms, whereas burnout was associated with a higher risk of anxiety symptoms. Furthermore, being female, having a career of less than five years, and requiring counseling due to stress were associated with a higher risk of anxiety symptoms. Being younger, female, or a basic nurse; having a career of less than five years; partaking in shift work; experiencing job dissatisfaction; requiring counseling due to stress; being exposed to higher levels of burnout; and having lower levels of self-esteem and happiness were all found to be significantly correlated with anxiety symptoms. **CONCLUSION:** These findings suggest that promoting self-esteem and happiness while reducing burnout may be beneficial in preventing and managing anxiety symptoms among hospital nurses.

[Lien vers l'article](#)

Trauma Surgeons Experience Compassion Fatigue - A Major Metropolitan Area Survey.

Hoefer L, Tatebe LC, Patel P, Tyson A, Kingsley S, Chang G, et al. *J Trauma Acute Care Surg.* 2024 Jan 10.

INTRODUCTION: Compassion Fatigue (CF), the physical, emotional, and psychological impact of helping others, is composed of three domains: Compassion Satisfaction (CS), Secondary Traumatic Stress (STS), and Burnout (BO). Trauma surgeons (TS) experience work-related stress resulting in high rates of CF which can manifest as physical and psychological disorders. We hypothesized that TS experience CF and there are potentially modifiable systemic factors to mitigate its symptoms. **METHODS:** All TS in a major metropolitan area were eligible. Personal and professional demographic information was obtained. Each participant completed six validated surveys: 1) Professional Quality of Life Scale (Pro-QOL), 2) Perceived Stress Scale (PSS), 3) Multidimensional Scale of Perceived Social Support (MSPSS), 4) Adverse Childhood Events (ACE) Questionnaire, 5) Brief Coping Inventory (BCI), and 6) Toronto Empathy Questionnaire (TEQ). CF subscale risk scores (low:<23, moderate:23-41, high:>41) were recorded. Linear regression analysis assessed the demographic and environmental factors association with BO, STS, and CS. Variables significant on univariate analysis were included in multivariate models to determine the independent influence on BO, STS, and CS. Significance was $p \leq 0.05$. **RESULTS:** There were 57 TS (response rate:75.4% (n = 43); Caucasian: 65% (n = 28), male:67% (n = 29)). TS experienced CF (BO:26 (IQR: 21-32), STS:23 (IQR: 19-32), CS:39 (IQR: 34-45)). The PSS score was significantly associated with increased BO (Coef: 0.52, 95% CI: 0.28-0.77) and STS (Coef: 0.44, 95% CI: 0.15-0.73), and decreased CS (Coef: -0.51, 95% CI: -0.80- -0.23) ($p < 0.01$). Night shifts were associated with higher BO (Coef: 1.55, 95% CI: 0.07-3.03, $p = 0.05$), conversely day shifts were associated with higher STS

(Coef: 1.94, 95% CI: 0.32-3.56, $p = 0.03$). Higher TEQ scores were associated with greater CS (Coef: 0.33, 95% CI: 0.12-0.55, $p < 0.01$). **CONCLUSION:** TS experience moderate BO and STS associated with modifiable system- and work-related stressors. Efforts to reduce CF should focus on addressing sources of workplace stress and promoting empathic care. **LEVEL OF EVIDENCE:** III, Prognostic and Epidemiological.

[Lien vers l'article](#)

Troubles cognitifs et de la vigilance

Sleep quality, coping, and related depression: A cross-sectional study of Turkish nurses.

Topal Kılınçarslan G, Özcan Algül A, Gördeles Beşer N. *Int Nurs Rev.* 2024 Jan 19.

BACKGROUND: The sleep quality of nurses affects both their health and standard of nursing care. Working conditions, depression, and coping potential can also lead to sleep problems. **INTRODUCTION:** Sleep plays a crucial role in overall health at every stage of life. The purpose of this study is to determine the effect of sleep quality, depression, and coping mechanisms on the performance of nurses, whose sleep quality is strongly affected due to shift-based work. **METHODS:** The sample of this descriptive correlational study consisted of 133 healthcare workers. Data were collected using the Personal Information Form, Beck Depression Inventory (BDI), Coping Response Inventory (CRI), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS) and evaluated using the t test, Mann-Whitney U test, one-way ANOVA, Enter method, and linear regression. **FINDINGS:** One in three nurses reported having poor-quality sleep, and one in two nurses said they felt sleepy during the day. With declining sleep quality, the nurses' ability to cope with stress diminished, and their degree of depression increased. **DISCUSSION:** The nurses' financial situation and level of depression were key factors that influenced their quality of sleep and capacity to handle stress. To improve nurses' sleep, the shift pattern needs to change. **CONCLUSION:** To increase the quantity of sleep and enhance mental health, changes should be made to the shift schedules of nurses to allow for appropriate rest and reduce daytime sleepiness. **IMPLICATIONS FOR NURSING PRACTICE AND POLICIES:** Improved working conditions for nurses and updated nursing standards are required to improve nurses health and wellbeng.

[Lien vers l'article](#)

Nonrestorative Sleep and Type 2 Diabetes Incidence: the Aichi Workers' Cohort Study.

Lin J, Song Z, Li Y, Chiang C, Hirakawa Y, Nakano Y, et al. *J Epidemiol.* 2024 Jan 27.

BACKGROUND: The term "nonrestorative sleep (NRS)" refers to unrefreshed feeling at wake-up and is a domain of poor sleep quality. Previous researches have demonstrated that NRS is linked to a number of diseases and adverse health outcomes, but less is known regarding the link between NRS and diabetes, particularly in Japanese. **METHODS:** We studied 3665 middle-aged male participants of the Aichi Workers' Cohort Study who were followed-up from 2002 to 2019. Cox proportional hazards models estimated hazard ratios (HRs) and 95% confidence intervals (CIs) of incident type 2 diabetes mellitus (T2DM) in relation to NRS adjusted for potential confounding variables. **RESULTS:** During a median follow-up of 14.6 years, 421 type 2 diabetes cases were identified. Participants with NRS had a higher crude incidence rate of T2DM (11.2/1,000 person-years), compared to participants without NRS (9.3/1,000 person-years). In the fully adjusted model, individuals who reported having NRS had a significantly higher risk of developing T2DM (HR: 1.36, 95% CI: 1.10-1.67). The association was observed only in participants under 50 years old (HR: 1.82, 95% CI: 1.36-2.43), not in the older (50 years or older) participants (P for interaction = 0.025). In contrast, stratified analyses by the presence of shift work, obesity or sleep duration showed similar associations in all the strata. **CONCLUSIONS:**

NRS was associated with higher risk of T2DM in middle-aged Japanese male workers independent of a variety of lifestyle factors and other sleep problems.

[Lien vers l'article](#)

Insomnia symptoms and risk for atrial fibrillation - The HUNT study.

Gémes K, Malmo V, Strand LB, Ellekjaer H, Loennechen JP, Janszky I, Laugsand LE. *J Sleep Res.* 2024 Jan 29:e14156.

Studies on the effect of insomnia on atrial fibrillation risk in the general population are limited, therefore we investigated the association between insomnia and the risk of atrial fibrillation in a large-scale population-based study with valid atrial fibrillation measure. A total of 33,983 participants (55% women) reported their insomnia symptoms in the third wave of the HUNT study (between 2006 and 2008) in Norway, and they were followed for their first atrial fibrillation diagnosis until 2020 using hospital registers. Atrial fibrillation diagnoses were validated by physicians based on medical records and electrocardiograms. Insomnia symptoms were assessed by four questions, and analysed both individually and as cumulative symptoms. Cox regression, adjusted for age, sex, social and marital status, working in shiftwork, alcohol consumption, smoking, physical activity, body mass index, systolic blood pressure, and symptoms of anxiety and depression, was conducted. Overall, 1592 atrial fibrillation cases were identified during the follow-up and 31.6% of individuals reported at least one insomnia symptom. In our analysis, we did not detect meaningful associations between insomnia symptoms and the risk of atrial fibrillation. In conclusion, in this population there was no evidence for an association between insomnia symptoms and the risk of subsequent atrial fibrillation.

[Lien vers l'article](#)

Comparison of effects of modafinil and caffeine on fatigue-vulnerable and fatigue-resistant aircrew after a limited period of sleep deprivation.

Wingelaar-Jagt YQ, Wingelaar TT, Riedel WJ, Ramaekers JG. *Front Physiol.* 2023;14:1303758.

Introduction: Literature suggests pilots experience fatigue differently. So-called fatigue-resistant or -vulnerable individuals might also respond differently to countermeasures or stimulants. This study, which is part of a larger randomized controlled clinical trial, aims to investigate the effect of caffeine and modafinil on fatigue-resistant and -vulnerable pilots. Methods: This study included 32 healthy employees of the Royal Netherlands Air Force, who completed three test days, separated by at least 7 days. After a regular work day, the subjects were randomly administered either 300 mg caffeine, 200 mg modafinil or placebo at midnight. Hereafter the subjects performed the psychomotor vigilance test (PVT), vigilance and tracking test (VigTrack) and Stanford sleepiness scale (SSS) six times until 8 a.m. the next day. Subjects were ranked on the average number of lapses on the PVT during the placebo night and divided into three groups: fatigue-vulnerable (F(VUL)), -intermediate (F(INT)) and -resistant (F(RES)), with 11, 10 and 11 subjects in each group, respectively. Area under the curve (AUC) of the PVT, VigTrack and SSS during the test nights were calculated, which were used in univariate factorial analysis of variance (ANOVA). Tukey's HSD post hoc tests were used to differentiate between the groups. Results: A significant effect of treatment was found in the ANOVA of both PVT parameters, VigTrack mean reaction time and SSS. There was a statistically significant effect of fatigue group on all PVT parameters and VigTrack mean percentage omissions, where F(INT) and F(RES) scored better than F(VUL). There was a significant interaction effect between treatment and fatigue group for PVT number of lapses. This is congruent for the AUC analyses in which for all parameters (except for the SSS) the performance of the F(VUL) group was consistently worse than that of the F(INT) and F(RES) groups. Discussion: This study demonstrates that the performance of individuals with different fatigue tolerances are differently affected by stimulants after a limited period of sleep deprivation. The

classification of fatigue tolerance through PVT lapses when sleep deprived seems to be able to predict this.

[Lien vers l'article](#)

Chronobiologie

Animal

Circadian misalignment impairs oligodendrocyte myelination via Bmal1 overexpression leading to anxiety and depression-like behaviors.

Zuo Y, Hou Y, Wang Y, Yuan L, Cheng L, Zhang T. *J Pineal Res.* 2024 Jan;76(1):e12935.

Circadian misalignment (CM) caused by shift work can increase the risk of mood impairment. However, the pathological mechanisms underlying these deficits remain unclear. In the present study, we used long-term variable photoperiod (L-VP) in wild-type mice to better simulate real-life shift patterns and study its effects on the prefrontal cortex (PFC) and hippocampus, which are closely related to mood function. The results showed that exposure to L-VP altered the activity/rest rhythms of mice, by eliciting phase delay and decreased amplitude of the rhythms. Mice with CM developed anxiety and depression-like manifestations and the number of mature oligodendrocytes (OL) was reduced in the medial prefrontal cortex and hippocampal CA1 regions. Mood impairment and OL reduction worsened with increased exposure time to L-VP, while normal photoperiod restoration had no effect. Mechanistically, we identified upregulation of Bmal1 in the PFC and hippocampal regions of CM mice at night, when genes related to mature OL and myelination should be highly expressed. CM mice exhibited significant inhibition of the protein kinase B (AKT)/mTOR signaling pathway, which is directly associated to OL differentiation and maturation. Furthermore, we demonstrated in the OL precursor cell line Oli-Neu that overexpression of Bmal1 inhibits AKT/mTOR pathway and reduces the expression of genes OL differentiation. In conclusion, BMAL1 might play a critical role in CM, providing strong research evidence for BMAL1 as a potential target for CM therapy.

[Lien vers l'article](#)

Chronic blue light-emitting diode exposure harvests gut dysbiosis related to cholesterol dysregulation.

Huang CH, Yu S, Yu HS, Tu HP, Yeh YT, Yu HS. *Front Cell Infect Microbiol.* 2023;13:1320713.

Night shift workers have been associated with circadian dysregulation and metabolic disorders, which are tightly coevolved with gut microbiota. The chronic impacts of light-emitting diode (LED) lighting at night on gut microbiota and serum lipids were investigated. Male C57BL/6 mice were exposed to blue or white LED lighting at Zeitgeber time 13.5-14 (ZT; ZT0 is the onset of "lights on" and ZT12 is the "lights off" onset under 12-hour light, 12-hour dark schedule). After 33 weeks, only the high irradiance (7.2 J/cm(2)) of blue LED light reduced the alpha diversity of gut microbiota. The high irradiance of white LED light and the low irradiance (3.6 J/cm(2)) of both lights did not change microbial alpha diversity. However, the low irradiance, but not the high one, of both blue and white LED illuminations significantly increased serum total cholesterol (TCHO), but not triglyceride (TG). There was no significant difference of microbial abundance between two lights. The ratio of beneficial to harmful bacteria decreased at a low irradiance but increased at a high irradiance of blue light. Notably, this ratio was negatively correlated with serum TCHO but positively correlated with bile acid biosynthesis pathway. Therefore, chronic blue LED lighting at a high irradiance may harvest gut dysbiosis in association with decreased alpha diversity and the ratio of beneficial to harmful bacteria to specifically dysregulates TCHO metabolism in mice. Night shift workers are recommended to be avoid of blue LED lighting for a long and lasting time.

[Lien vers l'article](#)

Homme

Administration of blue light in the morning and no blue-ray light in the evening improves the circadian functions of non-24-hour shift workers.

Zhong Z, Tan X, An X, Li J, Cai J, Jiang Y, et al. *Chronobiol Int.* 2024 Jan 24:1-16.

In modern 24-hour society, various round-the-clock services have entailed shift work, resulting in non-24-hour schedules. However, the extent of behavioral and physiological alterations by non-24-hour schedules remains unclear, and particularly, effective interventions to restore the circadian functions of non-24-hour shift workers are rarely explored. In this study, we investigate the effects of a simulated non-24-hour military shift work schedule on daily rhythms and sleep, and establish an intervention measure to restore the circadian functions of non-24-hour shift workers. The three stages of experiments were conducted. The stage-one experiment was to establish a comprehensive evaluation index of the circadian rhythms and sleep for all 60 participants by analyzing wristwatch-recorded physiological parameters and sleep. The stage-two experiment evaluated the effects of an intervention strategy on physiological rhythms and sleep. The stage-three experiment was to examine the participants' physiological and behavioral disturbances under the simulated non-24-hour military shift work schedule and their improvements by the optimal lighting apparatus. We found that wristwatch-recorded physiological parameters display robust rhythmicity, and the phases of systolic blood pressures and heart rates can be used as reliable estimators for the human body time. The simulated non-24-hour military shift work schedule significantly disrupts the daily rhythms of oxygen saturation levels, blood pressures, heart rates, and reduces sleep quality. Administration of blue light in the morning and no blue-ray light in the evening improves the amplitude and synchronization of daily rhythms of the non-24-hour participants. These findings demonstrate the harmful consequences of the non-24-hour shift work schedule and provide a non-invasive strategy to improve the well-being and work efficiency of the non-24-hour shift population.

[Lien vers l'article](#)

Epidemiology of sleep patterns and circadian typology in uruguayan children: The contribution of school shifts.

Olivera A, Estevan I, Tassinio B, Rossel C, Silva A. *Sleep Med X.* 2024 Dec;7:100099.

Healthy sleep is defined by the combination of adequate duration, good quality, and regular timing. In children, sleep thus depends on the interplay of individual, parental, organizational, community, and social variables, but only a few studies have addressed this issue in a comprehensive way nationwide. Using the Uruguayan nationally representative survey (Nutrition, Child Development, and Health Survey, Encuesta de Nutrición, Desarrollo Infantil y Salud, ENDIS), we present the first epidemiological characterization of chronobiological and sleep parameters in Latin American children. On average, Uruguayan urban children ($n = 2437$; 5-10-years old) showed quite late chronotypes ($MSF_{sc} = 03:53 \pm 1:07$), moderate misalignment ($SJL = 1.0 \pm 0.9$ h), and adequate sleep duration ($SD_{week} = 9.9 \pm 1.0$ h). Further, we show the substantial influence of school shift schedules on children's circadian typology and sleep patterns. Our results show that children attending the morning school shift have a higher risk of sleep problems than afternoon-school shift ones. The chronotype and sleep were earlier in morning-school shift children than in children attending the afternoon school shift. However, morning-school shift children had stronger misalignment, shorter sleep on school days, and a higher risk of chronic sleep deficit and non-healthy circadian misalignment (even worse in late chronotypes) than afternoon-shift children. This evidence points to the need of evaluating policies to reorganize school start times to prevent the negative effects that early schooling seems to have on children's sleep health, which has been neglected so far.

[Lien vers l'article](#)

The effect of circadian on the productivity of nurses with the mediating role of quality of work life.

Poormoosa Y, Amerzadeh M, Alizadeh A, Kalhor R. *BMC Nurs.* 2024 Feb 2;23(1):89.

BACKGROUND: Circadian rhythms, as an integral part of daily life, govern the scheduling, management, and coordination of living organisms. Given the irregular nature of shift patterns in nurses' work schedules, investigating their implications is paramount to increasing Quality of Work Life (QWL) and productivity. The study aimed to investigate the impact of circadian rhythm on the efficiency of nurses working in hospitals in Qazvin, Iran, with QWL serving as a mediating variable. **METHODS:** This study employed a descriptive-analytical research design, utilizing cross-sectional data collected in 2022-2023 based on the implementation of Structural Equation Modeling (SEM). The number of participants was 378 nurses. The data were obtained by administering a questionnaire and various tools, organized into four sections: demographic information, the Circadian Questionnaire, the Quality of Work Life Questionnaire, and the Nurses' Efficiency Questionnaire. The collected data were subsequently analyzed using SEM techniques within the R software. **RESULTS:** The findings demonstrated statistically significant variations in mean scores about gender and efficiency ($p = 0.008$), marital status and efficiency ($p = 0.000$), and employment type and efficiency ($p = 0.002$) among the study participants. There was a significant association between shift patterns and QWL ($p = 0.004$). Expressly, the confirmed results indicated a direct impact of circadian on QWL (with a path coefficient of 0.013), as well as an indirect impact on efficiency mediated by the variable QWL (with a path coefficient of 0.037) ($p < 0.05$). **CONCLUSION:** Due to the critical role of nurses in the healthcare system, implementing strategies that promote their efficiency is paramount. Therefore, managers can create an environment that enhances nurses' productivity by improving methods that positively impact their QWL.

[Lien vers l'article](#)

Differences in nutritional profile by chronotype among 12-h day shift and night shift nurses.

Faulkner R, Rangel T, Penders RA, Saul T, Bindler R, Miller L, Wilson M. *Chronobiol Int.* 2024 Jan;41(1):17-28.

Acute care nurses may suffer substantial fatigue if working night shift or if assigned a shift contrasting their preferred sleep-wake patterns, called chronotype. Nurses are at higher risk for diet-related, metabolic diseases compared to other healthcare professionals. Yet, the impact of preferred chronotype and mismatch to assigned shift on nutritional intake and risk for metabolic disease among acute care nurses is unclear. This observational study analyzed dietary data from 52 acute care nurses. Participants completed the revised morningness-eveningness questionnaire which gives a total score between 4 and 26. Lower scores (<12) were flagged as evening type (E-type), higher scores (>17) defined as morning type (M-type), and scores between 12 and 17 were categorized as neither types (N-type). N-type participants were considered chronotype matched when assigned to either shift, whereas E-types were only considered matched if assigned to night shift, and M-types matched only if assigned to day shift. Participants also recorded all dietary intake for 7 d (reflecting a typical workweek) in the MyFitnessPal phone application. Findings indicated that eveningness nurses had markers of MetS, including a significantly larger body mass index and waist circumference than N-types ($p < 0.05$). E-types also consumed, on average, more calories than other chronotypes ($m = 1833.7$ kcal), although this was not a statistically significant finding. Mismatched day ($n = 7$, 13.4%) and night ($n = 5$, 9.6%) nurses in our sample consumed, on average, more calories ($m = 1935.1$ kcal, $m = 1981.2$ kcal, respectively) than matched day ($n = 24$, 46.2%, $m = 1642.6$ kcal) or night ($n = 16$, 30.8%, $m = 1599.1$ kcal) nurses, although this finding was not statistically significant. Mismatched day nurses consumed significantly less fiber than day matched nurses (median = 10.9 g versus median = 18.5 g, $p = 0.04$), while night mismatched consumed significantly more fiber compared to night matched (median = 21 g versus median = 12.2 g, $p = 0.05$) nurses. Participant diets overall did not follow recommendations by the United States Department of Agriculture (USDA), who consumed a higher percentage of calories

from saturated fats and a smaller percentage of calories from fiber, habits which increase risk for metabolic syndrome. Further research surrounding nutritional pathways utilizing larger samples is needed to uncover relationships with metabolic syndrome especially for eveningness-type nurses or if working a shift mismatched with preferred chronotype.

[Lien vers l'article](#)

Association between nocturnal light exposure and melatonin in humans: a meta-analysis.

Lu J, Zou R, Yang Y, Bai X, Wei W, Ding R, Hua X. *Environ Sci Pollut Res Int.* 2024 Jan;31(3):3425-34.

BACKGROUND: Night shift workers are more susceptible to circadian rhythm disturbances due to their prolonged exposure to nighttime light. This exposure during abnormal periods causes inappropriate suppression of melatonin synthesis and secretion in the pineal gland, thereby disrupting circadian rhythms. While it is believed that nocturnal light exposure is involved in suppressing melatonin secretion, research findings in this area have been inconsistent. **METHODS:** Thirteen publications retrieved from PubMed and Web of Science databases were included to compare the differences between night shift workers and controls using aggregated mean differences (MD) and 95% confidence intervals (CI). **RESULTS:** After a comprehensive review, 13 publications were included and data on urinary melatonin metabolite 6-sulfamexomelatonin(aMT6s) were collected for meta-analysis. The results showed that the morning urinary aMT6s levels were significantly lower in the exposed group than in the non-exposed group (MD = -3.69, 95%CI = (-5.41, -1.98), $P < 0.0001$), with no significant heterogeneity among the original studies ($I(2) = 42\%$, $P = 0.13$). In addition, night shift workers had significantly lower mean levels of 24-h urinary aMT6s than day shift workers (MD = -3.38, 95%CI = (-4.27, -2.49), $P < 0.00001$, $I(2) = 0$). Nocturnal light was correlated with nocturnal urine aMT6s secretion and inhibited nocturnal aMT6s secretion (MD = -11.68, 95%CI = (-15.70, -7.67), $P < 0.00001$, $I(2) = 0$). Additionally, nocturnal light inhibited the secretion of melatonin in the blood, with no significant heterogeneity between studies (MD = -11.37, 95%CI = (-15.41, -7.33), $P < 0.00001$, $I(2) = 0$). **CONCLUSION:** The findings of this study indicate that exposure to nocturnal light among night shift workers leads to inhibition of melatonin secretion.

[Lien vers l'article](#)

Estimating vigilance from the pre-work shift sleep using an under-mattress sleep sensor.

Manners J, Kemps E, Guyett A, Stuart N, Lechat B, Catcheside P, Scott H. *J Sleep Res.* 2024 Jan 7:e14138.

Predicting vigilance impairment in high-risk shift work occupations is critical to help to reduce workplace errors and accidents. Current methods rely on multi-night, often manually entered, sleep data. This study developed a machine learning model for predicting vigilance errors based on a single prior sleep period, derived from an under-mattress sensor. Twenty-four healthy volunteers (mean [SD] age = 27.6 [9.5] years, 12 male) attended the laboratory on two separate occasions, 1 month apart, to compare wake performance and sleep under two different lighting conditions. Each condition occurred over an 8 day protocol comprising a baseline sleep opportunity from 10 p.m. to 7 a.m., a 27 h wake period, then daytime sleep opportunities from 10 a.m. to 7 p.m. on days 3-7. From 12 a.m. to 8 a.m. on each of days 4-7, participants completed simulated night shifts that included six 10 min psychomotor vigilance task (PVT) trials per shift. Sleep was assessed using an under-mattress sensor. Using extra-trees machine learning models, PVT performance (reaction times < 500 ms, reaction, and lapses) during each night shift was predicted based on the preceding daytime sleep. The final extra-trees model demonstrated moderate accuracy for predicting PVT performance, with standard errors (RMSE) of 19.9 ms (reaction time, 359 [41.6]ms), 0.42 reactions/s (reaction speed, 2.5 [0.6] reactions/s), and 7.2 (lapses, 10.5 [12.3]). The model also correctly classified 84% of trials containing ≥ 5 lapses (Matthews correlation coefficient = 0.59, $F1 = 0.83$). Model performance is comparable to

current fatigue prediction models that rely upon self-report or manually entered data. This efficient approach may help to manage fatigue and safety in non-standard work schedules.

[Lien vers l'article](#)

Nonrestorative Sleep and Type 2 Diabetes Incidence: the Aichi Workers' Cohort Study.

Lin J, Song Z, Li Y, Chiang C, Hirakawa Y, Nakano Y, et al. *J Epidemiol.* 2024 Jan 27.

BACKGROUND: The term "nonrestorative sleep (NRS)" refers to unrefreshed feeling at wake-up and is a domain of poor sleep quality. Previous researches have demonstrated that NRS is linked to a number of diseases and adverse health outcomes, but less is known regarding the link between NRS and diabetes, particularly in Japanese. **METHODS:** We studied 3665 middle-aged male participants of the Aichi Workers' Cohort Study who were followed-up from 2002 to 2019. Cox proportional hazards models estimated hazard ratios (HRs) and 95% confidence intervals (CIs) of incident type 2 diabetes mellitus (T2DM) in relation to NRS adjusted for potential confounding variables. **RESULTS:** During a median follow-up of 14.6 years, 421 type 2 diabetes cases were identified. Participants with NRS had a higher crude incidence rate of T2DM (11.2/1,000 person-years), compared to participants without NRS (9.3/1,000 person-years). In the fully adjusted model, individuals who reported having NRS had a significantly higher risk of developing T2DM (HR: 1.36, 95% CI: 1.10-1.67). The association was observed only in participants under 50 years old (HR: 1.82, 95% CI: 1.36-2.43), not in the older (50 years or older) participants (P for interaction =0.025). In contrast, stratified analyses by the presence of shift work, obesity or sleep duration showed similar associations in all the strata. **CONCLUSIONS:** NRS was associated with higher risk of T2DM in middle-aged Japanese male workers independent of a variety of lifestyle factors and other sleep problems.

[Lien vers l'article](#)

Molecular mechanisms of artificial light at night affecting circadian rhythm disturbance.

Lei T, Hua H, Du H, Xia J, Xu D, Liu W, et al. *Arch Toxicol.* 2024 Feb;98(2):395-408.

Artificial light at night (ALAN) pollution has been regarded as a global environmental concern. More than 80% of the global population is exposed to light pollution. Exacerbating this issue, artificially lit outdoor areas are growing by 2.2% per year, while continuously lit areas have brightened by 2.2% each year due to rapid population growth and expanding urbanization. Furthermore, the increasing prevalence of night shift work and smart device usage contributes to the inescapable influence of ALAN. Studies have shown that ALAN can disrupt endogenous biological clocks, resulting in a disturbance of the circadian rhythm, which ultimately affects various physiological functions. Up until now, scholars have studied various disease mechanisms caused by ALAN that may be related to the response of the circadian system to light. This review outlines the molecular mechanisms by which ALAN causes circadian rhythm abnormalities in sleep disorders, endocrine diseases, cardiovascular disease, cancer, immune impairment, depression, anxiety and cognitive impairments.

[Lien vers l'article](#)

Disruption of circadian rhythms promotes alcohol use: a systematic review.

Nelson MJ, Soliman PS, Rhew R, Cassidy RN, Haass-Koffler CL. *Alcohol Alcohol.* 2024 Jan 17;59(2).

This systematic review investigates the bidirectional relationship between alcohol consumption and disrupted circadian rhythms. The goal of this study was to identify (i) the types of circadian rhythm disruptors (i.e. social jet lag, extreme chronotypes, and night shift work) associated with altered alcohol use and (ii) whether sex differences in the consequences of circadian disruption exist. We conducted a search of PubMed, Embase, and PsycINFO exclusively on human research. We identified

177 articles that met the inclusion criteria. Our analyses revealed that social jet lag and the extreme chronotype referred to as eveningness were consistently associated with increased alcohol consumption. Relationships between night shift work and alcohol consumption were variable; half of articles reported no effect of night shift work on alcohol consumption. Both sexes were included as participants in the majority of the chronotype and social jet lag papers, with no sex difference apparent in alcohol consumption. The night shift research, however, contained fewer studies that included both sexes. Not all forms of circadian disruption are associated with comparable patterns of alcohol use. The most at-risk individuals for increased alcohol consumption are those with social jet lag or those of an eveningness chronotype. Direct testing of the associations in this review should be conducted to evaluate the relationships among circadian disruption, alcohol intake, and sex differences to provide insight into temporal risk factors associated with development of alcohol use disorder.

[Lien vers l'article](#)

Chronotype, but Not Night-Shift Work, Is Associated with Psoriasis: a Cross-Sectional Study Among UK Biobank Participants.

Maidstone R, Iqbal M, Rutter MK, Ray DW, Young HS. *J Invest Dermatol*. 2024 Feb;144(2):410-4.e1.

[Lien vers l'article](#)

Circadian epidemiology: Structuring circadian causes of disease and practical implications.

Erren TC, Morfeld P. *Chronobiol Int*. 2024 Jan;41(1):38-52.

That disruptions of the body's internal clockwork can lead to negative health consequences, including cancer, is a plausible hypothesis. Yet, despite strong mechanistic and animal support, the International Agency for Research on Cancer (IARC) experts considered epidemiological evidence as limited regarding the carcinogenicity of "shift-work involving circadian disruption" (2007) and "night shift work" (2019). We use directed acyclic graphs (DAGs) to outline a concept of circadian causes that discloses challenges when choosing appropriate exposure variables. On this basis, we propose to move beyond shift-work alone as a direct cause of disease. Instead, quantifying chronodisruption as individual doses can lead to interpretable circadian epidemiology. The hypothesis is that doses of chronodisruption cause disrupted circadian organisation by leading to desynchronization of circadian rhythms. Chronodisruption can be conceptualized as the split physiological nexus of internal and external times. Biological (or internal) night - an individual's intrinsically favoured sleep time window - could be the backbone of circadian epidemiology. In practice, individual doses that cause disrupted circadian organisation are derived from the intersection of time intervals of being awake and an individual's biological night. After numerous studies counted work shifts, chronobiology may now advance circadian epidemiology with more specific dose estimation - albeit with greater challenges in measurement (time-dependent individual data) and analysis (time-dependent confounding).

[Lien vers l'article](#)

Circadian Rhythms, Chrononutrition, Physical Training, and Redox Homeostasis-Molecular Mechanisms in Human Health.

Drăgoi CM, Nicolae AC, Ungurianu A, Margină DM, Grădinaru D, Dumitrescu IB. *Cells*. 2024 Jan 11;13(2).

A multitude of physiological processes, human behavioral patterns, and social interactions are intricately governed by the complex interplay between external circumstances and endogenous circadian rhythms. This multidimensional regulatory framework is susceptible to disruptions, and in contemporary society, there is a prevalent occurrence of misalignments between the circadian system

and environmental cues, a phenomenon frequently associated with adverse health consequences. The onset of most prevalent current chronic diseases is intimately connected with alterations in human lifestyle practices under various facets, including the following: reduced physical activity, the exposure to artificial light, also acknowledged as light pollution, sedentary behavior coupled with consuming energy-dense nutriment, irregular eating frameworks, disruptions in sleep patterns (inadequate quality and duration), engagement in shift work, and the phenomenon known as social jetlag. The rapid evolution of contemporary life and domestic routines has significantly outpaced the rate of genetic adaptation. Consequently, the underlying circadian rhythms are exposed to multiple shifts, thereby elevating the susceptibility to disease predisposition. This comprehensive review endeavors to synthesize existing empirical evidence that substantiates the conceptual integration of the circadian clock, biochemical molecular homeostasis, oxidative stress, and the stimuli imparted by physical exercise, sleep, and nutrition.

[Lien vers l'article](#)

Maternal Circadian Disruption from Shift Work and the Impact on the Concentration of Melatonin in Breast Milk.

Booker LA, Wilson D, Spong J, Fitzgibbon C, Deacon-Crouch M, Lenz KE, Skinner TC. *Breastfeed Med.* 2024 Jan;19(1):33-9.

Background and Objective: Melatonin in breast milk exhibits a 24-hour circadian rhythm, present in nighttime breast milk but nearly undetectable in daytime breast milk. Shift work can disrupt the circadian timing of individuals, evident in changes in melatonin in saliva and urine samples. However, it is unknown whether these changes are also reflected in breast milk from a shift working mother. The aim of this study was to investigate whether maternal circadian rhythm disturbance from shift work impacts the melatonin concentration in breast milk. **Materials and Methods:** Breast milk and saliva samples were collected from 11 shift working mothers at four timepoints across five consecutive days. This included during their day shift or nonworkdays to act as a control, night shift, subsequent night shifts and postnight shift. Where possible, pre- and postfeed collections were also undertaken. Samples were grouped into four-time intervals: 12-6:30 am, 7-11:30 am, 12-6:30 pm, 7-11:30 pm, and melatonin levels (picogram per milliliter) in the breast milk and saliva samples were analyzed. **Results:** There was a significant decrease in breast milk melatonin ($p = 0.026$) at the 12-6:30 am time interval on subsequent night shifts, compared with control days. However, there was no overall time and shift type interaction effect ($p = 0.70$). In addition, no observed difference in melatonin levels was found in saliva samples, or when comparing pre- and postfeed breast milk. Breast milk melatonin however was found to be significantly higher compared with saliva ($p > 0.001$), at all but one time interval. **Conclusion:** The findings suggest that there is a potential effect of maternal circadian rhythm disruption from shift work on breast milk melatonin levels. This is an important step in exploring the role of maternal circadian timing and the effect on breast milk composition. Expansion of this research and exploration of other circadian rhythm misalignment sleep disorders on breast milk is highly recommended.

[Lien vers l'article](#)

The associations between different types of infections and circadian preference and shift work.

Bjorvatn B, Waage S, Emberland KE, Litleskare S, Rebnord IK, Forthun I, Rortveit G. *Chronobiol Int.* 2024 Jan 14:1-8.

Disturbed sleep and circadian disruption are reported to increase the risk of infections. People with an evening circadian preference and night workers typically report insufficient sleep, and the aims of the present study were to investigate possible associations between various types of infections and circadian preference and shift work status. Data were collected from an online cross-sectional survey

of 1023 participants recruited from the Norwegian practice-based research network in general practice - PraksisNett. The participants completed questions about circadian preference (morning type, intermediate type, evening type), work schedule (day work, shift work without nights, shift work with night shifts), and whether they had experienced infections during the last three months (common cold, throat infection, ear infection, sinusitis, pneumonia/bronchitis, COVID-19, influenza-like illness, skin infection, gastrointestinal infection, urinary infection, venereal disease, eye infection). Data were analyzed with chi-square tests and logistic regression analyses with adjustment for relevant confounders (gender, age, marital status, country of birth, children living at home, and educational level). Results showed that evening types more often reported venereal disease compared to morning types (OR = 4.01, confidence interval (CI) = 1.08-14.84). None of the other infections were significantly associated with circadian preference. Shift work including nights was associated with higher odds of influenza-like illness (OR = 1.97, CI = 1.10-3.55), but none of the other infections. In conclusion, neither circadian preference nor shift work seemed to be strongly associated with risk of infections, except for venereal disease (more common in evening types) and influenza-like illness (more common in night workers). Longitudinal studies are needed for causal inferences.

[Lien vers l'article](#)

Conduites addictives

Disruption of circadian rhythms promotes alcohol use: a systematic review.

Nelson MJ, Soliman PS, Rhew R, Cassidy RN, Haass-Koffler CL. *Alcohol Alcohol*. 2024 Jan 17;59(2).

This systematic review investigates the bidirectional relationship between alcohol consumption and disrupted circadian rhythms. The goal of this study was to identify (i) the types of circadian rhythm disruptors (i.e. social jet lag, extreme chronotypes, and night shift work) associated with altered alcohol use and (ii) whether sex differences in the consequences of circadian disruption exist. We conducted a search of PubMed, Embase, and PsycINFO exclusively on human research. We identified 177 articles that met the inclusion criteria. Our analyses revealed that social jet lag and the extreme chronotype referred to as eveningness were consistently associated with increased alcohol consumption. Relationships between night shift work and alcohol consumption were variable; half of articles reported no effect of night shift work on alcohol consumption. Both sexes were included as participants in the majority of the chronotype and social jet lag papers, with no sex difference apparent in alcohol consumption. The night shift research, however, contained fewer studies that included both sexes. Not all forms of circadian disruption are associated with comparable patterns of alcohol use. The most at-risk individuals for increased alcohol consumption are those with social jet lag or those of an eveningness chronotype. Direct testing of the associations in this review should be conducted to evaluate the relationships among circadian disruption, alcohol intake, and sex differences to provide insight into temporal risk factors associated with development of alcohol use disorder.

[Lien vers l'article](#)

Long working hours and the use of prescription sedatives.

Kawada T. *Sleep Med*. 2024 Jan 28.

[Lien vers l'article](#)

Health-care personnel and energy drinks: A new category of subjects at risk?

Farinetti A, Mattioli AV. *Addiction*. 2024 Jan 25.

[Lien vers l'article](#)

Comparison of effects of modafinil and caffeine on fatigue-vulnerable and fatigue-resistant aircrew after a limited period of sleep deprivation.

Wingelaar-Jagt YQ, Wingelaar TT, Riedel WJ, Ramaekers JG. *Front Physiol*. 2023;14:1303758.

Introduction: Literature suggests pilots experience fatigue differently. So-called fatigue-resistant or -vulnerable individuals might also respond differently to countermeasures or stimulants. This study, which is part of a larger randomized controlled clinical trial, aims to investigate the effect of caffeine and modafinil on fatigue-resistant and -vulnerable pilots. Methods: This study included 32 healthy employees of the Royal Netherlands Air Force, who completed three test days, separated by at least 7 days. After a regular work day, the subjects were randomly administered either 300 mg caffeine, 200 mg modafinil or placebo at midnight. Hereafter the subjects performed the psychomotor vigilance test (PVT), vigilance and tracking test (VigTrack) and Stanford sleepiness scale (SSS) six times until 8 a.m. the next day. Subjects were ranked on the average number of lapses on the PVT during the placebo night and divided into three groups: fatigue-vulnerable (F(VUL)), -intermediate (FINT) and -resistant (F(RES)), with 11, 10 and 11 subjects in each group, respectively. Area under the curve (AUC) of the PVT, VigTrack and SSS during the test nights were calculated, which were used in univariate factorial analysis of variance (ANOVA). Tukey's HSD post hoc tests were used to differentiate between

the groups. Results: A significant effect of treatment was found in the ANOVA of both PVT parameters, VigTrack mean reaction time and SSS. There was a statistically significant effect of fatigue group on all PVT parameters and VigTrack mean percentage omissions, where F(INT) and F(RES) scored better than F(VUL). There was a significant interaction effect between treatment and fatigue group for PVT number of lapses. This is congruent for the AUC analyses in which for all parameters (except for the SSS) the performance of the F(VUL) group was consistently worse than that of the F(INT) and F(RES) groups. Discussion: This study demonstrates that the performance of individuals with different fatigue tolerances are differently affected by simulants after a limited period of sleep deprivation. The classification of fatigue tolerance through PVT lapses when sleep deprived seems to be able to predict this.

[Lien vers l'article](#)

Reproduction

Associations of Night Shift Status During Pregnancy With Small for Gestational Age and Preterm Births.

Lee SJ, Kim C, Lee EJ, Lim MN, Na S, Kim WJ. *J Korean Med Sci.* 2024 Jan 8;39(1):e25.

BACKGROUND: Shift work, including night shift work, during pregnancy has been associated with adverse birth outcomes such as small for gestational age (SGA) infants and preterm births. This study, conducted in South Korea using the Korean CHildren's ENvironmental health Study (Ko-CHENS) cohort, aimed to investigate the association between shift work and night shift status during pregnancy and adverse birth outcomes. **METHODS:** The Korean Ko-CHENS is a nationwide prospective birth cohort study of children's environmental diseases, conducted by the Ministry of Environment and the National Institute of Environmental Research. This study included pregnant women recruited from 2015 to 2020 for Ko-CHENS Core Cohorts, and 4,944 out of a total of 5,213 pregnant women were selected as final subjects. A logistic regression model was used to identify the risk factors affecting SGA births, preterm births, and low-birth-weight infants, and the odds ratio (OR) was adjusted. This was confirmed by calculating ORs. Maternal age, infant sex, maternal educational status, body mass index, smoking status, alcohol consumption status, parity, gestational diabetes mellitus, preeclampsia, and abortion history were used as adjusted variables. **RESULTS:** No statistically significant differences were observed in the birth outcomes or maternal working patterns. There were no significant differences in the adjusted odds ratios (aORs) of SGA and preterm births between the non-worker, day worker, and shift worker. However, there was a significant difference in the aORs of SGA between non-workers and night shift workers. (aORs [95% confidence interval], 2.643 [1.193-5.859]). **CONCLUSION:** Working during pregnancy did not increase the risk of SGA or preterm birth, and night shift work did not increase the risk of preterm birth. However, night-shift work increases the risk of SGA.

[Lien vers l'article](#)

Experiences and self-care of pregnant nurses with gestational diabetes mellitus: a qualitative study.

He J, Wang H, Chen X. *BMC Nurs.* 2024 Jan 11;23(1):33.

BACKGROUND: Pregnant nurses are at high risk of developing gestational diabetes mellitus (GDM), and nurses diagnosed with GDM face challenges in balancing disease management and work, which affects maternal and child health and the quality of care. GDM requires significant changes to lifestyle and physical activity to control blood glucose levels, which is key to reducing adverse pregnancy outcomes. However, few studies have focused on the experiences of pregnant nurses with GDM. This study aimed to gain insight into the experiences of pregnant nurses with GDM in China in terms of their illness, work burdens, and self-care. **METHODS:** This qualitative study used an interpretative phenomenological analysis. Face-to-face semi-structured in-depth interviews were conducted with pregnant nurses with GDM to investigate their experiences and self-care. The study was performed at Chongqing's maternal and child health hospital in China. A purposive sampling was used. Nine pregnant nurses diagnosed with GDM were recruited and interviewed. **RESULTS:** The interview data generated four themes and 11 sub-themes. The four themes were 'the perceptions and feelings of GDM', 'experiences of lifestyle changes', 'social support needs', and 'health expectations and risk perception.' **CONCLUSION:** Many factors such as the unique occupational environment, overwork, occupational pressure, shift work, family status, and education level may lead to difficulties in managing blood glucose in nurses with GDM. These findings suggest that managers should pay more attention to nurses with GDM and develop personalized medical care and work arrangements. These measures can improve the self-care and well-being of nurses with GDM and promote the health of nurses and their offspring.

[Lien vers l'article](#)

Associations of anxiety and fatigue with hazardous occupational conditions of Korean nurses in early pregnancy: A cross-sectional study.

Kim JH, Kim O, Cho M, Jeong H, Dan H. *Int J Nurs Pract.* 2024 Jan 25:e13232.

AIM: To identify occupational conditions associated with anxiety and fatigue among Korean nurses in early pregnancy. **BACKGROUND:** Pregnant nurses, like non-pregnant hospital nurses, are exposed to dangerous and stressful work environments, which can affect fatigue and anxiety. **DESIGN AND METHODS:** This cross-sectional study enrolled 1490 nurses who participated in the early pregnancy module in the Korea Nurses' Health Study between 2014 and 2020. Hierarchical linear regression analyses were employed to identify the factors associated with anxiety and fatigue among nurses in early pregnancy. **RESULTS:** One-fifth of participants were working night shifts, and more than two-thirds were working overtime. When using antineoplastic drugs and disinfectants, the rate of use of protective equipment varied depending on the size of the hospital. Working overtime and lifting heavy objects were associated with increased anxiety and fatigue among nurses. **CONCLUSION:** Overtime work was associated with both anxiety and fatigue among pregnant nurses. Pregnant hospital nurses were exposed to both night shift and overtime work. Therefore, hospital managers should improve hazardous working environments to protect the health of nurses in early pregnancy and their fetuses.

[Lien vers l'article](#)

Preconception sleep duration, non-daytime work schedules, and incidence of spontaneous abortion: a prospective cohort study.

Bond JC, Coleman CM, Yland JJ, Wesselink AK, Wang T, Willis M, et al. *Hum Reprod.* 2024 Feb 1;39(2):413-24.

STUDY QUESTION: To what extent do self-reported sleep duration and non-daytime work schedules in either partner affect the rate of spontaneous abortion (SAB)? **SUMMARY ANSWER:** Incidence of SAB had little association with female sleep duration and a modest positive association with male short sleep duration, female work at night, and discrepant work schedules among partners. **WHAT IS KNOWN ALREADY:** Several studies have reported an association between short sleep duration in either partner and reproductive health outcomes, including fecundability. Moreover, certain types of female occupational exposures during pregnancy have been associated with an increased risk of SAB. No studies have evaluated SAB risk in relation to male sleep and work schedules, or joint exposures within a couple. **STUDY DESIGN, SIZE, DURATION:** This prospective cohort study included 9357 female participants and 2602 of their male partners residing in North America (June 2013 to April 2023). **PARTICIPANTS/MATERIALS, SETTING, METHODS:** Participants enrolled when they were attempting pregnancy and completed self-administered baseline questionnaires about their average sleep duration and work schedules. Among those who conceived, we ascertained SAB and gestational age at loss via follow-up questionnaires. We used multivariable Cox proportional hazards models with gestational weeks as the time scale to estimate hazard ratios (HRs) and 95% CIs relating SAB with sleep duration and non-daytime work schedules for female and male participants, and the couple. We used inverse probability weighting to account for potential selection bias due to the possibility of differential participation of male partners with respect to the exposures. **MAIN RESULTS AND THE ROLE OF CHANCE:** Compared to female participants with recommended sleep (7-8.9 h), those reporting short sleep duration (<6 h) did not have a higher rate of SAB (HR 0.88, 95% CI 0.69, 1.13). Short self-reported sleep duration among male participants was modestly associated with a higher rate of SAB (adjusted and weighted HR 1.30, 95% CI 0.96, 1.75). Female night work at night (adjusted HR 1.19, 95% CI 1.02, 1.38) and male non-daytime work (adjusted and weighted HR 1.26, 95% CI 1.00, 1.59) were associated with modestly higher rates of SAB, whereas female rotating shift work was not (adjusted HR 0.91, 0.78, 1.05) compared with daytime workers. Couples in which work schedules were discrepant had an elevated rate of SAB if the male partner worked a non-daytime shift (adjusted and weighted HR 1.46,

95% CI 1.13, 1.88) compared with couples in which both members worked during the day. The corresponding HR if only the female partner worked a non-daytime shift was 1.21 (95% CI 0.92, 1.58). LIMITATIONS, REASONS FOR CAUTION: Data on sleep duration and work schedules were based on self-report, which is vulnerable to misclassification, particularly since participants were asked to report their average sleep duration during the past month. Work exposures were heterogeneous, as many different types of employment may require night and shift work and may have different associations with SAB. WIDER IMPLICATIONS OF THE FINDINGS: Our findings are consistent with previous research indicating that some types of female employment schedules may be associated with SAB incidence. This is the first study to indicate a relationship between SAB and male employment schedules, indicating that discrepant work schedules within a couple might be relevant. STUDY FUNDING/COMPETING INTEREST(S): This work was funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development grants R01HD105863 (PIs: L.A.W. and M.L.E.), R01HD086742 (PIs: L.A.W. and E.E.H.), and R21HD072326 (PI: L.A.W.). PRESTO has received in-kind donations from Swiss Precision Diagnostics and Kindara.com for primary data collection. L.A.W. is a consultant for AbbVie, Inc. and the Gates Foundation. M.L.E. is an advisor for and holds stock in Ro, Hannah, Dadi, Underdog, Vseat, & Doveras. The other authors have no competing interests to declare. TRIAL REGISTRATION NUMBER: N/A.

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Maternal Circadian Disruption from Shift Work and the Impact on the Concentration of Melatonin in Breast Milk.

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Background and Objective: Melatonin in breast milk exhibits a 24-hour circadian rhythm, present in nighttime breast milk but nearly undetectable in daytime breast milk. Shift work can disrupt the circadian timing of individuals, evident in changes in melatonin in saliva and urine samples. However, it is unknown whether these changes are also reflected in breast milk from a shift working mother. The aim of this study was to investigate whether maternal circadian rhythm disturbance from shift work impacts the melatonin concentration in breast milk. Materials and Methods: Breast milk and saliva samples were collected from 11 shift working mothers at four timepoints across five consecutive days. This included during their day shift or nonworkdays to act as a control, night shift, subsequent night shifts and postnight shift. Where possible, pre- and postfeed collections were also undertaken. Samples were grouped into four-time intervals: 12-6:30 am, 7-11:30 am, 12-6:30 pm, 7-11:30 pm, and melatonin levels (picogram per milliliter) in the breast milk and saliva samples were analyzed. Results: There was a significant decrease in breast milk melatonin ($p = 0.026$) at the 12-6:30 am time interval on subsequent night shifts, compared with control days. However, there was no overall time and shift type interaction effect ($p = 0.70$). In addition, no observed difference in melatonin levels was found in saliva samples, or when comparing pre- and postfeed breast milk. Breast milk melatonin however was found to be significantly higher compared with saliva ($p > 0.001$), at all but one time interval. Conclusion: The findings suggest that there is a potential effect of maternal circadian rhythm disruption from shift work on breast milk melatonin levels. This is an important step in exploring the role of maternal circadian timing and the effect on breast milk composition. Expansion of this research and exploration of other circadian rhythm misalignment sleep disorders on breast milk is highly recommended.

[Lien vers l'article](#)

Reproductive outcomes among female health care workers.

Izadi N, Aminian O, Ghafourian K, Aghdaee A, Samadani S. *BMC Womens Health*. 2024 Jan 16;24(1):44.

OBJECTIVE: Occupational exposures may be associated with reproductive health and pregnancy outcomes. This study investigated the association between occupational exposures and reproductive health, pregnancy outcomes, and the lactation period among hospital staff. **MATERIALS AND METHODS:** Seven hundred thirty-three female healthcare workers from hospitals affiliated with the Tehran University of Medical Sciences were invited to participate in this cross-sectional study. The measurement method for fertility consequences was self-report. Demographic characteristics, occupational data, medical history, and reproductive history were collected via data collection form. Finally, reproductive outcomes were evaluated in different occupational hazard categories. **RESULT:** Chemical exposures (solvents) were a risk factor for stillbirth. Prolonged working hours were associated with spontaneous abortion and breastfeeding periods. Shift workers did not have a higher frequency of reproductive and pregnancy outcomes, but the breastfeeding period was significantly decreased in shift workers. Psychiatric disorders were associated with preterm labour, low birth weight, and stillbirth in sequence with nervousness, depression, and mood disturbance. Furthermore, depression affects the breastfeeding period. Moreover, we found a link between job titles and infertility. In addition, socioeconomic status was related to stillbirth and infertility. **CONCLUSION:** The study revealed that chemical and ergonomic exposures have associations with some reproductive outcomes. We also conclude that shift work could adversely affect the breastfeeding period. So, implementing some organizational strategies to control adverse health effects of occupational hazards and modifying shift work and working hours for nursing mothers is recommended.

[Lien vers l'article](#)

Polyexposition

Association of prolonged occupational co-exposures to electromagnetic fields, noise, and rotating shift work with thyroid hormone levels.

Khosravipour M, Gharagozlou F, Kakavandi MG, Nadri F, Barzegar A, Emami K, Athar HV. *Ecotoxicol Environ Saf.* 2024 Jan 15;270:115837.

The purpose of this study was to determine the association of prolonged occupational co-exposure to extremely low-frequency electromagnetic fields (ELF-EMFs), noise, and rotating shift work with the levels of thyroid hormones (triiodothyronine (T3), thyroxine (T4), and thyroid-stimulating hormone (TSH)). From 2016 to 2017, we enrolled all male workers without a history of thyroid disorders and followed them until 2020. To measure ELF-EMFs and noise exposures, we calculated the 8-hour equivalent sound pressure levels (Leq) and the 8-hour average of ELF-EMFs, respectively. Shift work schedules involved 8-hr fixed day and 8-hr clockwise 3-rotating night schedules. The participant's thyroid hormone levels were obtained from blood test results in their medical records. The percentage change in the levels of T3, T4, and TSH was estimated by using different mixed-effects linear regression models. The TSH levels were significantly elevated per a 10-dB increment of noise. The levels of T4 hormone were significantly changed per a unit increase in the levels of ELF-EMFs. Compared to the fixed-day workers, we observed workers exposed to shift work had a significantly lower T4 level. For T4 and TSH hormones, we found significant interactions among noise, ELF-EMFs, and shift work variables. In summary, this study warranted that prolonged exposure to ELF-EMFs, noise, and rotating shift work might be associated with thyroid dysfunction.

[Lien vers l'article](#)

Pathologies cardiovasculaires

Administration of blue light in the morning and no blue-ray light in the evening improves the circadian functions of non-24-hour shift workers.

Zhong Z, Tan X, An X, Li J, Cai J, Jiang Y, et al. *Chronobiol Int*. 2024 Jan 24:1-16.

In modern 24-hour society, various round-the-clock services have entailed shift work, resulting in non-24-hour schedules. However, the extent of behavioral and physiological alterations by non-24-hour schedules remains unclear, and particularly, effective interventions to restore the circadian functions of non-24-hour shift workers are rarely explored. In this study, we investigate the effects of a simulated non-24-hour military shift work schedule on daily rhythms and sleep, and establish an intervention measure to restore the circadian functions of non-24-hour shift workers. The three stages of experiments were conducted. The stage-one experiment was to establish a comprehensive evaluation index of the circadian rhythms and sleep for all 60 participants by analyzing wristwatch-recorded physiological parameters and sleep. The stage-two experiment evaluated the effects of an intervention strategy on physiological rhythms and sleep. The stage-three experiment was to examine the participants' physiological and behavioral disturbances under the simulated non-24-hour military shift work schedule and their improvements by the optimal lighting apparatus. We found that wristwatch-recorded physiological parameters display robust rhythmicity, and the phases of systolic blood pressures and heart rates can be used as reliable estimators for the human body time. The simulated non-24-hour military shift work schedule significantly disrupts the daily rhythms of oxygen saturation levels, blood pressures, heart rates, and reduces sleep quality. Administration of blue light in the morning and no blue-ray light in the evening improves the amplitude and synchronization of daily rhythms of the non-24-hour participants. These findings demonstrate the harmful consequences of the non-24-hour shift work schedule and provide a non-invasive strategy to improve the well-being and work efficiency of the non-24-hour shift population.

[Lien vers l'article](#)

Night shift work and cardiovascular diseases among employees in Germany: five-year follow-up of the Gutenberg Health Study.

Jankowiak S, Rossnagel K, Bauer J, Schulz A, Liebers F, Latza U, et al. *Scand J Work Environ Health*. 2024 Jan 23.

OBJECTIVE: This study aimed to determine if there is an increased risk of incident cardiovascular diseases (CVD) resulting from cumulative night shift work in the German population-based Gutenberg Health Study (GHS). **METHODS:** We examined working participants of the GHS at baseline and after five years. Cumulative night shift work in the 10 years before baseline was assessed and categorized as low (1-220 nights \pm up to 1 year), middle (221-660 nights \pm 1-3 years), and high (>660 nights \pm more than 3 years) night shift exposure. Hazard ratios (HR) were estimated for incident "quality-assured CVD events" using Cox proportional hazard models. **RESULTS:** At baseline, 1092 of 8167 working participants performed night shift work. During the follow-up, 202 incident cardiovascular events occurred. The crude incidence rates for CVD per 1000 person-years were 6.88 [95% confidence interval (CI) 4.80-9.55] for night shift workers and 5.19 (95% CI 4.44-6.04) for day workers. Cumulative incidence curves showed a higher cumulative incidence in workers exposed to night shift work compared to day workers after five years. The adjusted HR for incident CVD events were 1.26 (95% CI 0.68-2.33), 1.37 (95% CI 0.74-2.53) and 1.19 (95% CI 0.67-2.12) for employees in the low, middle and high night shift categories compared to employees without night shift work, respectively. **CONCLUSIONS:** The observed tendencies indicate that night shift work might be negatively associated

with cardiovascular health. We expect the continued follow-up will clarify the long-term impact of night shift work.

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Insomnia symptoms and risk for atrial fibrillation - The HUNT study.

Gémes K, Malmo V, Strand LB, Ellekjaer H, Loennechen JP, Janszky I, Laugsand LE. *J Sleep Res.* 2024 Jan 29:e14156.

Studies on the effect of insomnia on atrial fibrillation risk in the general population are limited, therefore we investigated the association between insomnia and the risk of atrial fibrillation in a large-scale population-based study with valid atrial fibrillation measure. A total of 33,983 participants (55% women) reported their insomnia symptoms in the third wave of the HUNT study (between 2006 and 2008) in Norway, and they were followed for their first atrial fibrillation diagnosis until 2020 using hospital registers. Atrial fibrillation diagnoses were validated by physicians based on medical records and electrocardiograms. Insomnia symptoms were assessed by four questions, and analysed both individually and as cumulative symptoms. Cox regression, adjusted for age, sex, social and marital status, working in shiftwork, alcohol consumption, smoking, physical activity, body mass index, systolic blood pressure, and symptoms of anxiety and depression, was conducted. Overall, 1592 atrial fibrillation cases were identified during the follow-up and 31.6% of individuals reported at least one insomnia symptom. In our analysis, we did not detect meaningful associations between insomnia symptoms and the risk of atrial fibrillation. In conclusion, in this population there was no evidence for an association between insomnia symptoms and the risk of subsequent atrial fibrillation.

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The COVID-19 Pandemic Decreases Cardiorespiratory Fitness: A 3-Year Follow-Up Study in Industry.

Skare Ø, Mamen A, Skogstad M. *J Cardiovasc Dev Dis.* 2023 Dec 28;11(1).

BACKGROUND: We aimed to determine if maximal oxygen uptake ($\dot{V}O_2$ max), resting heart rate (RHR), and self-reported leisure-time moderate to vigorous physical activity (MVPA) changed over a 3-year follow-up (FU) among industrial workers. **METHODS:** We assessed cardiorespiratory fitness (CRF) August 2018 and August 2021. The last 17-18 months coincided with the COVID-19 pandemic. Data from 86 participants were collected; demographics by questionnaire and cardiovascular outcomes from medical examination: $\dot{V}O_2$ max, RHR, and fat mass (%). Workers reported on their leisure-time MVPA twice. To assess changes in health outcomes we applied a linear mixed model, adjusting for baseline (BL) age, sex, pack-years, shift work, and a 5-month plant shutdown. Further, we adjusted for actual age instead of BL age. **RESULTS:** $\dot{V}O_2$ max decreased from 39.6 mL/kg/min at BL to 34.0 at FU, a reduction of 5.6 mL/kg/min (95%CI, -7.6, -3.7). Adjusted for actual age, the corresponding figure for $\dot{V}O_2$ max was 5.4 mL/kg/min, (95%CI, -7.4, -3.4), an annual loss of 4.6%. RHR increased from 61.3 to 64.4 beats per minute (95%CI, 0.8, 5.4). Self-reported MVPA decreased by 43.9 min/week, (95%CI, -73.5, -14.4). **CONCLUSIONS:** We observed a decrease in $\dot{V}O_2$ max, an increase in RHR and a decrease in self-reported MVPA, suggesting physical inactivity during the COVID-19 pandemic.

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