



Shift Work: Nutrition Tips to Stay Healthy

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Modern lifestyles, particularly shift work, have changed the daily rhythms of life, but is this a cost to health? What preventative measures for employers and employees can be taken?

Shift work and its effects on health

Approximately one in five workers in Europe is employed on a shift work basis.¹ Shift work comprises work patterns that do not follow the conventional 8-hour daytime working period, including night shifts, rotating shift work, and/or irregular working hours.² Compared to individuals who work standard hours, shift workers may be at higher risk of a wide range of conditions such as obesity, type 2 diabetes, cardiovascular disease, digestive problems, sleep disorders, depression, and vitamin D deficiency (lack of exposure to sunlight).³⁻⁶ For example, night shift work is estimated to increase coronary heart disease risk by 40%.⁵ How might shift work cause these negative health effects?

Disrupted metabolism

Some of these health issues may in part be related to the lifestyle and irregular eating patterns due to shift work, but may also reflect deeper metabolic disturbances.⁶ Working at night essentially goes against the body's circadian rhythm, also known as the "body clock", a set of distinct physiological fluctuations throughout the 24-hour day linked to sunlight and temperature.⁴ A recent study shows that prolonged sleep restriction and circadian disruption alter metabolism, decreases resting metabolic rate (basal energy use), increases blood glucose (sugar) levels (inadequate insulin response after a meal), and thus increases the risk of obesity and diabetes.⁷ Additionally psychosocial stress and physical inactivity may contribute to a disrupted metabolism.⁴

Eating behaviour of shift workers

Shift working can affect energy distribution over the course of the day. Shift workers tend to snack more frequently instead of having full meals, but overall this does not appear to impact total energy intake. Few studies adequately assess nutrient intakes and the impact of timing of intake.⁴ Factors that may influence food consumption include disruption of meal time routines with family and friends, eating alone, and the quality of food and dining facilities. In addition, time for food consumption is seldom prioritised and can be constrained by staffing levels and shift schedules.^{4,6}

More research is required to elucidate the relationship between disruption of the circadian clock, lifestyle and metabolic conditions experienced by shift workers.³ This will be addressed by a new EU-funded project, EuRhythDia, on the effect of lifestyle interventions (diet, exercise, light exposure and melatonin intake).⁸

It is difficult to make dietary recommendations for shift workers, but possible to identify broad guiding principles for employees and employers to promote healthier lifestyles, in addition to general healthy eating and fatigue management guidelines.

Food and drink choices during shifts and in-between shifts:

- Workplaces should develop a nutrition strategy that ensures that healthy choices of foods and beverages are offered in a relaxed eating environment.
- Shift schedules should be designed to give employees adequate time between shifts to allow them to maintain a healthy lifestyle – to have regular meal times, exercise and sleeping patterns.⁴
- Shift workers should stick as closely as possible to a normal day-and-night pattern of food intake. Avoid eating, or at least restrict energy intake, between midnight and 6 am, and attempt to eat at the beginning and end of the shift.⁴ For example, afternoon workers should have their main meal in the middle of the day, rather than middle of their shift. Night workers should eat their main meal before their shift starts, at regular dinnertime.⁹ Eating breakfast before day-sleep will help to avoid waking due to hunger. However, it is advisable for this meal to be small, a large meal (1-2 hours before sleep) could cause difficulty in falling asleep.⁴
- Drink fluids, regularly, to help prevent dehydration which can increase tiredness.
- Stimulants such as caffeine can remain in the body for a few hours after consumption and may increase alertness, and therefore interfere with sleeping. If shift workers feel that they require caffeine during the shift, aim to have this at the start, and switch to non-caffeinated drinks as the shift progresses. Avoid alcohol as a means of getting to sleep.⁹

References

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