

Shift workers eat more and face higher illness risk than day workers, says study

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Rotating shift workers eat more kilojoules, snack more on junk food, and don't eat as many nutritious foods, increasing their risk of diet-related illness, Monash University-led research has found.

Published in *Advances in Nutrition*, the systematic review of dietary habit and energy intake studies found rotating shift workers had higher average 24-hour energy intake than day workers.

For each recorded day of kilojoule intake, rotating shift workers ate on average 264 more [kilojoules](#) than regular day workers. An increase of just 100 kilojoules each day can lead to a .5-kilogram weight gain over a year.

Shift workers also reported unhealthier dietary patterns than day workers, including irregular meals, more snacking or eating at night, less core food consumption and more eating of discretionary foods.

In Australia, 1.4 million employees (16 percent) have shift work as their main occupation. Rotating shifts, where schedules vary from week to week, are the most common form for women and men.

Previous studies have found that while shift work may be more convenient or pay more, it puts workers at increased risk of chronic illnesses such as cardiovascular disease and diabetes.

A contributing factor to these increased risks is the timing of eating occasions. Consuming a greater proportion of daily energy intake at night has also been associated with weight gain and impaired glucose metabolism.

Someone who concurs with the challenges of shift work is Tania Whalen, 51, who has done shift work off and on for 20 years, and consecutively for the last six years.

Although enjoying her work in telecommunications, Tania said when she was tired it was "too easy to grab junk food such as chocolate during a shift."

"The good part of rotational shift work is having up to four days off at a time and the work has fitted in nicely with raising a family," she said.

"The bad part is the food and nutrition challenges, especially as I often work 12-hour shifts. That's a long time to prepare food for and keep it fresh at work."

To better understand the situation, Monash University Ph.D. candidate and Research Dietitian, Angela Clark, supervised by Professor Maxine Bonham, from the Department of Nutrition, Dietetics and Food, compared the total daily kilojoule intake of workers on rotating shift schedules with those on day work schedules.

For the first time, the study revealed that rotating shift workers may be eating more kilojoules with a large proportion at night, helping to explain why they face increased risk of [chronic diseases](#).

Ms. Clark, who works with Monash University's SWIFt Study (Shifting weight in night shift workers), said understanding the impact of extra kilojoule consumption could go a long way towards much needed workplace support.

She explained that while the disruption to lifestyle that shift work causes could not be changed, improving diets and eating patterns could make a difference. "The study also found the diets of rotational workers tended to contain less protein and carbohydrates, and more fat than day workers," she said.

"The foods and drinks typically consumed by rotating workers were more fried and fatty foods, confectionary, sweetened drinks and alcohol, with fewer core foods such as dairy, meat, fruit and vegetables. There was also a pattern of more meals per day and frequent snacking at night, with the majority of kilojoules being eaten in the second half of the day.

"Adding to the complexities of nighttime eating, shift workers don't have the same access to healthy food as day workers and may rely more on vending machines, takeaway and convenience foods," Ms. Clark added.

Monash University, in collaboration with the University of South Australia, is now trialing the effectiveness of three weight loss strategies for night [shift workers](#). The SWIFt Study considers the complexities of circadian rhythms and meal timing on weight-loss success.

"These workers are an important part of our society and are often working around the clock to keep our world functioning," Ms. Clark said.

Shift work is regularly performed outside of the standard 7am to 6pm work hours and can involve fixed shifts such as [night](#) work only or rotating shifts. Rotating shifts regularly rotate around the clock between different shift types with hours of work changing repeatedly.

More information: Angela B. Clark et al, Dietary Patterns under the Influence of Rotational Shift Work Schedules: A Systematic Review and Meta-Analysis, *Advances in Nutrition* (2023). [DOI: 10.1016/j.advnut.2023.01.006](#)

Provided by Monash University

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