

Stress hormones may increase cardiovascular risks for shift workers

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A recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)* found that shift work at a young age is associated with elevated long-term cortisol levels and increased BMI. Previous studies have shown that long-term elevated cortisol levels lead to increased abdominal obesity, hypertension, diabetes and cardiovascular risk.

Shift work, defined as work performed primarily outside standard working hours, has been associated with increased incidences of obesity, hypertension and insulin resistance, ultimately leading to an increased incidence of cardiovascular disease. This is the first study that shows that working in shifts leads to changes in long-term [cortisol](#) levels, suggesting that the stress hormone cortisol might be one of the factors contributing to the increased cardiovascular risks of shift workers.

"Our findings show that cortisol might play an important part in the development of obesity and increased cardiovascular risk for those working in shifts," said Laura Manenschijn, MD, of Erasmus MC in Rotterdam, The Netherlands and lead author of the study. "Unraveling the role of cortisol in the health problems found in shift workers could result in new approaches to prevent cardiovascular damage in this specific group."

In this study, researchers collected hair samples from 33 [shift workers](#) and 89 day workers. Cortisol was extracted from the hair samples with methanol. Cortisol levels were measured using an ELISA cortisol kit, a diagnostic tool used to detect cortisol concentrations in saliva. Researchers found that long-term [cortisol levels](#) were significantly increased in individuals working in shifts, especially in study participants younger than 40 years.

More information: The article, "Shift work at young age is associated with elevated long-term

cortisol levels and body mass index," appears in the November 2011 issue of *JCEM*.

Provided by The Endocrine Society

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