HealthManagement
Promoting Management and Leadership

Study: Night Work 'Chrono-Chaos' for Body

Doing the night shift throws the body "into chaos" and could cause long-term damage, warn researchers. Shift work has been linked to higher rates of type 2 diabetes, heart attacks and cancer as people get too little sleep at the wrong time.

The human body has its own natural rhythm, also called body clock, which is tuned to sleep at night and be active during the day.

In a recent study published in Proceedings of the National Academy of Sciences, a group of scientists at the Sleep Research Centre in Surrey have identified the disruption caused by shift work at the deepest molecular level. They found the speed, scale and severity of damage caused by being awake at night was surprising, carrying with it profound effects on the body, altering everything from hormones and body temperature to athletic ability, mood and brain function.

The researchers followed 22 people as their body was shifted from a normal pattern to that of a night-shift worker.

Blood tests showed that normally 6% of genes - the instructions contained in DNA - were precisely timed to be more or less active at specific times of the day. However, once the volunteers were working through the night, that genetic fine-tuning was lost.

Dr Simon Archer, one of the researchers at the University of Surrey said, over 97% of rhythmic genes become out of sync with mistimed sleep, providing an explanation why people feel so bad during jet lag, or when they have to work irregular shifts.

Fellow researcher Prof Derk-Jan Dijk mentioned that each body tissue had its own daily rhythm, however this was getting lost with the heart running to a different time than the kidneys. He labeled this ‘chrono-chaos’, comparing it to living in a house that had a clock in every room showing a different time. This disruption of continuity invariably leads to chaos in the household.

Prof Dijk added it was known that shift work and jet lag were associated with negative side effects and health consequences appearing after a number of years of shift work. It was believed these changes in rhythmic patterns of gene expression were likely to be related to some of those long-term health consequences.

For Prof Hugh Piggins, a body-clock researcher from the University of Manchester, the study indicated that the acute effects were quite severe. He found it surprising how large an effect was noticed so quickly, exceeding previous estimates. In conclusion Prof Piggins cautioned that it was a short-term study, hence any lasting changes were uncertain, but there were indications that shift work leads to a lot of health-related problems.

Source: BBC

21 Janury 2014

Published on : Tue, 21 Jan 2014