

## Sleep/Wake Cycle and Circadian Disturbances in Shift Work: Strategies for Their Management—A Review

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### Abstract

**Introduction:** There has been a growing concern about the ability of individuals to maintain adequate levels of performance over long work shifts, particularly when those shifts span night-time hours. It has, therefore, become expeditious to understand and apply principles of circadian rhythms in order to establish simple, rational and appropriate strategies to help our shift workers maximise their performance and minimise their health problems under the various shift work regimes. This review sought to outline several principles of circadian rhythms and the sleep/wake cycle and some possible strategies to manage disturbances in the sleep and performance arising from shift works. **Methods:** Many studies in this field had been carried out. The present review concerns studies which elucidate the general circadian principles as well as those which may provide helpful information applicable for us in the work environment we are living in. **Results:** It has been found that shift workers invariably suffer from a constellation of symptoms, which can sometime severely compromise their ability to perform optimally during their shift work. There are many factors that influence the sleep/wake cycle and thus, the performance of shift work. These include 1) circadian factors, 2) type of shift work, 3) how a person adapt to circadian disruption, 4) ageing, 5) sleep factors and 6) social and domestic factors. **Conclusions:** Several possible strategies could be adopted to improve sleep and performance. These include 1) appropriate scheduling of shift work, 2) proper consideration of the speed of shift rotation, 3) strategies for sleep and napping, 4) installing appropriate lighting at the workplace, 5) the use of sleeping pills/hypnotics such as melatonin and melatonin agonists.

*Ann Acad Med Singapore* 2000; 29:90-6

**Key words:** Circadian rhythm, Lighting, Melatonin, Performance, Shift work, Sleep/wake cycle

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