

Workplace Health and Safety Bulletin



Focus on Human Performance Part One: Sleep Inertia

Wild animals seem to be able to go from deep sleep to complete alertness in an instant, but most humans need some time to clear their heads before beginning each day. That sluggish, disoriented feeling we sometimes experience upon waking is called “sleep inertia.”

Researchers have shown that sleep inertia is characterized by measurable levels of impaired performance and reaction time, reduced memory ability and an impairment of the ability to make decisions. Since making a decision can involve complex skills such as gathering information, assessing it and the options for action, and then actually taking action, the impaired or reduced functions caused by sleep inertia can have significant effects on safety. For example, think of a firefighter or paramedic responding to a call and making decisions. Or of a worker who must drive or operate some type of equipment immediately upon waking.

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Australian researchers have found that within the first three minutes of waking a person’s ability to make decisions can be as low as 51 per cent of his or her best decision making ability before sleep. Even 30 minutes after waking, the same study showed, decision-making performance may still be 20 per cent below optimum levels.

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Factors influencing the degree of impairment caused by sleep inertia include:

- How abruptly you are awakened. If you wake normally the effects of sleep inertia appear to last less than five minutes, but if you wake up suddenly you may experience the effects of sleep inertia for 30 minutes or more.
- The point you are at in the sleep cycle when you wake up. If you awaken from a period of deep sleep you may feel more sluggish and not be able to perform at your optimum level.
- Whether you are sleep deprived. If you have not had enough sleep during the preceding days or months, you will be more greatly affected by sleep inertia. When you are tired, your brain can play some unusual tricks. You could do the wrong thing or think you have performed a task that has not really been completed.
- The type of task you are performing. Sleep inertia has a greater effect on performance accuracy than on reaction time.

What to do

To “get started” upon awakening, you might wash your face in cold water or drink coffee or tea. Like bright lights, loud noises and physical exercise, these methods of waking up or “alerting” seem to have a positive effect. Caffeine, whether from coffee, tea, pop or candy, makes you feel more alert but takes about 30 minutes to enter the bloodstream and the effects end after two or three hours.

Be aware that sleep inertia can effect a worker’s performance. The Australian researchers recommended that emergency service workers not engage in any critical decision making or in tasks such as driving for at least 20 minutes after waking.

And finally, one of the best ways of reducing the effects of sleep inertia is to get lengthy periods of quality sleep.

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Resources



www.atsb.gov.au/aviation/rec/rec_detail.cfm?ID=398

Australian Transport Safety Bureau: “Sleep Inertia and Wake-Up Effects on Performance”



www.casa.gov.au/fsa/2002/sep/24-29.pdf

“Asleep at the Controls”, Flight Safety Australia, Sept.-Oct. 2002



www.aaafoundation.org/pdf/wakeup.pdf


Wake Up! (brochure), AAA Foundation for Traffic Safety


Original article appeared in the May 2005 Occupational Health and Safety Magazine

Archived

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