

# Inadequate sleep

## Indicator overview

VicHealth Indicators Survey

VicHealth Indicators are used to measure community wellbeing with a focus on social determinants of health.

Survey topic areas include: wellbeing, healthy eating and sedentary behaviour, use of green space and safety, smoking policy, alcohol, using of social networking, participation in arts activities and the community, social attitudes, and work, life and time.

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November 2012  
ISBN: 978-1-921822-79-7  
Publication number: K-040-KN

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### Introduction

Many people experience inadequate sleep, insufficient quality of sleep or disruption to the sleep-wake cycle resulting in a 'sleep debt' (Bonnet and Arand 1995). While the amount of sleep required varies across age groups (see Table 1), life stages and lifestyle, most adults require between seven and nine hours of sleep each night for optimal functioning (Bonnet and Arand 1995, Ferrara and De Gennaro 2001). Performance decreases in people who have less than six hours of sleep each night (Lamberg 2002). Limited sleep can result in sleeplessness and fatigue, and is associated with impaired judgement, poor decision-making, and an increased risk of occupational and road accidents (Killgore et al. 2006, Lamond et al. 2004).

### Health consequences

Good quality sleep is a public health issue. Sleep is essential for maintaining an elevated mood, optimal health and wellbeing, as well as the consolidation of a variety of learning and memory tasks (Stickgold et al. 2001). Adequate sleep is also needed for normal functioning of the body's endocrine and immune systems (Spiegel et al. 1999), and insufficient sleep has been linked to the development of a number of chronic diseases and conditions including type 2 diabetes, cardiovascular disease, obesity and depression (Unruh et al. 2008). It is also known to interfere with the management of these conditions (Unruh et al. 2008), compounding the problem.

Individuals who have insufficient sleep are at risk of accidents in the home, at work and while driving (Swanston et al. 2011, Horne and Reyner 1999). Driving while sleep deprived is particularly dangerous: sleep deprivation of only 24 hours leads to a reduction of hand-to-eye coordination that is similar to having a blood-alcohol content of 0.10 (Lamond et al. 2004, Horne and Reyner 1999). Decreased productivity and increased absenteeism from school and work can be attributed to inadequate sleep (Swanston et al. 2011).

### Causes of inadequate sleep

Individuals have inadequate sleep for a number of reasons. Parents of young children can experience poor-quality and inadequate sleep (Meltzer and Mindell 2007). People working more than 60 hours each week can also experience poor sleep, even on days when they do not work (Salamien et al. 2010, Eisenmann et al. 2006). In the general population, late night activities such as television viewing, using mobile phones and playing computer games are major contributors to later bedtimes resulting in less sleep, or poorer quality of sleep (Sivertsen et al. 2011).

**Table 1**

Age	Sleep needs
Newborns (0 to 2 months)	12–18 hours
Infants (3 to 11 months)	14–15 hours
Toddlers (1 to 3 years)	12–14 hours
Preschoolers (3 to 5 years)	11–13 hours
School aged children (5 to 10 years)	10–11 hours
Teens (10 to 17 years)	8.5–9.25 hours
Adults	7–9 hours

Source: National Sleep Foundation (USA)

## Find out more

*Sleep deprivation*, Better Health Channel.

[www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/sleep\\_deprivation?open](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/sleep_deprivation?open)

*Sleep yourself thin. Really?*, Australian Broadcasting Corporation.

[www.abc.net.au/science/articles/2012/02/22/3435626.htm](http://www.abc.net.au/science/articles/2012/02/22/3435626.htm)

*Myths – and facts – about sleep*, National Sleep Foundation.

[www.sleepfoundation.org/article/how-sleep-works/myths-and-facts-about-sleep](http://www.sleepfoundation.org/article/how-sleep-works/myths-and-facts-about-sleep)

*Sleep and sleep disorders*, Centers for disease control and prevention.

[www.cdc.gov/sleep/](http://www.cdc.gov/sleep/)

*Yawning gulf: napping feature*, Radio National Health Report, Australian Broadcasting Corporation.

[www.abc.net.au/radionational/programs/healthreport/yawning-gulf-napping-feature/3665136](http://www.abc.net.au/radionational/programs/healthreport/yawning-gulf-napping-feature/3665136)

## References

Bonnet, MH & Arand, DL 1995, 'We are chronically sleep deprived', *Sleep – New York*, vol. 18(10) pp. 908-911.

Eisenmann, JC, Ekkekakis, P & Holmes, M 2006, 'Sleep duration and overweight among Australian children and adolescents', *Acta Paediatrica*, vol. 95(8), pp. 956-963.

Ferrara, M & De Gennaro, L 2001, 'How much sleep do we need?', *Sleep Medicine Reviews*, vol. 5(2), pp. 155-179.

Horne, J & Reyner, L 1999, 'Vehicle accidents related to sleep: a review', *Occupational and Environmental Medicine*, vol. 56(5), pp. 289-294.

Killgore, WDS, Balkin, TJ & Wesensten, NJ 2006, 'Impaired decision making following 49 h of sleep deprivation', *Journal of Sleep Research*, vol. 15(1), pp. 7-13.

Lamberg, L 2002, 'Long hours, little sleep', *JAMA: The Journal of the American Medical Association*, vol. 287 (3), p. 303.

Lamond, N, Dorrian, J, Burgess, HJ, Holmes, AL, Roach, GD, McCulloch, K, Fletcher, A & Dawson D 2004, 'Adaptation of performance during a week of simulated night work', *Ergonomics*, vol. 47(2), pp. 154-165.

Meltzer, LJ & Mindell, JA 2007, 'Relationship between child sleep disturbances and maternal sleep, mood, and parenting stress: a pilot study', *Journal of Family Psychology*, vol. 21(1), p. 67.

Salamien, S, Oksanen, T, Vahtera, J, Sallinen, M, Harma, M, Salo, P, Virtanen, M & Kivimaki, M 2010, 'Sleep disturbances as a predictor of occupational injuries among public sector workers', *Journal of Sleep Research*, vol. 19(2), pp. 207-213.

Sivertsen, B, Øverland, S & Pallesen, S 2011 'Trends in timing of sleep in the general population of Norway: 1980 to 2000', *Perceptual and Motor Skills*, vol. 113(2), pp. 509-518.

Spiegel, K, Leproult, R & Van Cauter, E 1999 'Impact of sleep debt on metabolic and endocrine function', *The Lancet*, vol. 354(9188), pp. 1435-1439.

Stickgold, R, Hobson, J, Fosse, R & Fosse, M 2001, 'Sleep, learning, and dreams: off-line memory reprocessing', *Science*, vol. 294(5544), p. 1052.

Swanston, L, Arnedt, J, Rosekind, M, Belenky, G, Balkin, T & Drake, C 2011, 'Sleep disorders and work performance: findings from the 2008 National Sleep Foundation Sleep in America poll', *Journal of Sleep Research*, vol. 20(3), p. 487.

Unruh, ML, Redline, S, An, MW, Buysse, D J, Nieto, FJ, Yeh, JL & Newman, AB 2008, 'Subjective and objective sleep quality and ageing in the sleep heart health study', *Journal of the American Geriatrics Society*, vol. 56(7), pp. 1218-1227.