NSW GOVERNMENT | Family & Community Services

Supporting Sleep

Practice Guide for Practitioners who Support People with Disability

Document approval

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[1] The term practitioner as used here includes dieticians, speech pathologists, occupational therapists, physiotherapists, psychologists, behaviour support practitioners and nurses.

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1. Background to the FACS core standards

The core standards program outlines the current evidence on topics, and guides practitioners in their application of this research evidence into practice. The core standards program materials can be found at: http://www.adhc.nsw.gov.au/sp/delivering_disability_services/core_standards.

1.1 Occupational Therapy Core Standards

The FACS core standards for occupational therapists working with people with disability include:

- Play and Leisure
- Sensory Processing
- Mealtime Management
- 24 Hour Positioning (including seating and wheeled mobility)
- Environmental Modifications
- Supporting Sexuality
- Supporting Sleep.

The occupational therapy core standards and the foundation common core standards (see below) represent some of the more significant core knowledge for occupational therapists supporting people with disability of all ages. Although they cannot cover all the knowledge required, they aim to enhance the capacity of occupational therapy practitioners by providing a convenient and up to date summary of information.

The core standards are intended to form part of a practitioner's learning plan as developed with a professional supervisor (see Supervision Core Standards). This practice guide provides a starting point for practitioners in accessing knowledge about current evidence in supporting sleep. Good practice integrates practice wisdom (the proficiency and judgment gained from experience) with best available evidence, and knowledge of local and individual circumstances (Straus, Richardson, Glasziou, & Haynes, 2010).

The core standards are designed to be flexible in meeting professional development needs for practitioners. FACS practice guides can be used alone as resources or can form part of an induction program for someone who is new to the area of practice. More comprehensively, the practice guides can be used to extend professional learning, by formal appraisal of knowledge and application of knowledge into practice (see the Supporting Sleep Appraisal). On completion, within FACS, this is formally recognised with a certificate of achievement. It is highly recommended that the program be incorporated into existing supervision, professional development and work goals, regardless of whether certification takes place.

1.2 Supporting Sleep Core Standard

This practice guide is part of the Supporting Sleep Core Standard. It has been developed by the FACS Practice Leader Occupational Therapy, with expert content providers, as a tool for occupational therapists and their practitioner colleagues to support people with disability to experience adequate sleep. The information provided may be of interest to others (such as people with disability themselves, carers, educators, and managers) and is available freely in the spirit of sharing.

Readers are encouraged to develop their knowledge through further reading and participation in relevant training opportunities when they arise. Knowledge translation is supported by participating in reflection and appraisal by someone with good content knowledge and clinical skill. This may be via the core standard appraisal within this Supporting Sleep Core Standard. Readers should also be aware of any of their own organisation's guidelines and resources related to sleep. Some of these are referenced within this document but there may be others such as those only available internally.

Other related resources within FACS include the FACS Safe Sleeping Guide (Family and Community Services, November 2014) for information on developing a safe sleeping environment, the FACS Sensory Processing Practice Guide (Family and Community Services, July 2014) for sensory issues, and the FACS 24 Hour Positioning Practice Guide for information on sleep equipment.

1.3 Common Core Standards

This practice guide is enhanced when used with the four common core standards for practitioners supporting people with disability. The common core standards include practice guides, appraisals, as well as video footage of practitioners and family members discussing the relevance of the topic area. Use of the core standards to develop knowledge, skill and recognition is outlined in the Frequently Asked Questions document.

The four common core standards are: 1) Professional Supervision; 2) The Working Alliance; 3) Philosophy, Values and Beliefs; 4) Service Delivery Approaches. All these resources can be found at: http://www.adhc.nsw.gov.au/sp/delivering_disability_services/core_standards.

2. Understanding sleep

"O magic sleep! O comfortable bird,
That broodest o'er the troubled sea of the mind
Till it is hush'd and smooth!" (Keats, 1999)

Sleep is considered essential to balance or maximise performance in the other socio-cultural, daily and lifespan occupations. The need for adequate sleep for general health and well-being is well documented in the fields of sleep research and sleep medicine. Sleep restores the body's resources that have been depleted by waking activities, allows growth and boosts the immune system. While sleeping, the brain processes and retains information that was learned from the day and makes it accessible for future use through long term memory.

The *quantity* of sleep decreases with age with infants sleeping approximately two thirds of the day, two to five year olds sleeping half the day, and adults sleeping one third of the day. (For more information see http://raisingchildren.net.au/articles/concerned_about_your_babys_sleep.html and http://www.sleephealthfoundation.org.au/fact-sheets-a-z/230-sleep-needs-across-the-lifespan.html). Sleep needs and function does not change across the adult life span but due to gradual changes in circadian function and sleep structure, obtaining adequate sleep with advancing age is more difficult (Rybarczyk, Lund, Garroway & Mack, 2013). See the USA's National Sleep Foundation review of recommendations for sleep time duration across all age groups (Hirshkowitz et al., 2015).

The sleep cycle alternates between the three (previously four) stages of Non Rapid Eye Movement (N-REM) and Rapid Eye Movement (REM). The *quality* of sleep can be measured by the disruption of the sleep cycles and sleep stages. There is also a distinctive decrease in the percentage of REM (dream or active) sleep from 50% in the first year to 20% at five years of age and remains similar in older age groups. There is a subsequent increase in the percentage of N-REM sleep in the first five years of life needed for a growing child and this stabilises during adolescence. Older adults sleep less deeply than younger adults with a gradual decrease in stage three of N-REM and an increase in lighter stages of stages one and two of N-REM. Older adults are more likely to wake and have early mornings, impacting on total sleep time.

The sleep-wake cycle is one of the circadian rhythms, like body temperature and the release of melatonin that needs to be reset on a daily basis and impacts on the *timing* of sleep (for more information see http://www.sleephealthfoundation.org.au/fact-sheets-a-z/203-body-clock.html). Significant difficulties with this timing of sleep can be experienced by shift workers and travellers who experience jet lag.

The sleep process within the brain is a distinct active physiological state different from the waking state http://www.sleephealthfoundation.org.au/fact-sheets-a-z/221-facts-about-sleep.html (Sleep Health Foundation, n.d.). Sleep can be defined as a learned neurological process in response to cues from the environment (Jan & Freeman, 2004). Therefore, sleep disturbance may be

due to the immaturity or dysfunction in the neurological process or delays in adapting to environmental cues such as light or sleep routines. Sleep disturbance is considered a significant concern that practitioners need to address when working with families (Stores, 2014). Some consequences of sleep disorders are covered in the next chapter.

3. Consequences of sleep disorders

Understanding typical sleep and the impact of inadequate sleep on daily occupations is important in supporting people with disability. Research in this area is growing, including the importance of sleep in relation to mental and physical health performance, relationships and well being (Blask, 2009; Karatsoreos, 2012; Smith, Lack, Lovato, & Wright, 2014; Walker, 2008).

Without adequate sleep a person's learning ability and daytime behaviour are compromised with loss of concentration, increased irritability and reduced motivation. In addition, depression and anxiety are linked to disturbed sleep across the age groups. Developmental changes throughout a person's life-span can impact on sleep quantity, quality and timing.

Missed sleep difficulties can lead to misdiagnosis, for instance: a person investigated for onset of dementia may in fact have sleep difficulties; a person reported as having behaviours of concern or low motivation, may instead have excessive daytime sleepiness; a person identified as having learning and memory impairment, may have severely disturbed sleep.

3.1 Sleep disorders in children and young people

In children, inadequate sleep can result in sleepiness during the day or the opposite effect of increased hyperactivity. Inadequate sleep in children and adolescents with developmental disability has been linked to increased daytime behaviours of concern, heightened sensitivity to sensory inputs and poor emotional regulation (Stores & Wiggs, 2001). Delayed sleep phase syndrome experienced by some adolescents and young adults is associated with depression and impaired academic performance.

Sleep disturbances should be treated early to avoid the resultant harmful effects on children and their parents or carers (Jan et al., 2008; Jan, Owens, Weiss, Johnson, Wasdell, Freeman, & Ipsiroglu, 2008). Interventions are outlined later in this guide.

Sudden and Unexpected Death in Infancy (SUDI) is a general term applied when seemingly healthy infants die suddenly and without warning, usually after the infant was placed to sleep or during sleep. The more familiar term SIDS – Sudden Infant Death Syndrome – is one of the sub categories of SUDI. SIDS is an exclusionary cause of infant death that cannot be explained after a thorough investigation, including performance of a complete autopsy and review of the circumstances of death and the clinical history. SIDS accounts for a large proportion of SUDI deaths. More information on SUDI can be found in the FACS Safe Sleeping Guide (Family and Community Services, November 2014).

3.2 Sleep disorders in adults

In adults disturbed or poor quality sleep has far reaching consequences, with impact reported at all levels of individual and social function (Buysse, Grunstein, Horne, & Lavie, 2010; Hillman & Lack, 2013).

In adults, severe obstructive sleep apnoea is strongly associated with increased mortality, stroke and cardiovascular disease in middle-aged populations. Breathing difficulties during sleep are also linked to obesity and diabetes. In adults over 60 years of age, sleep quality has been linked to a sense of loneliness and increased stress (McHugh & Lawlor, 2013).

Lifestyle factors have an impact on sleep, in particular use of technology, and shift work, with sleep impairment associated with deleterious effects on alertness, mood, cognitive function and health (Rajaratnam, Howard, & Grunstein, 2013).

Further to primary sleep disorders, sleep problems are associated with the wide variety of health conditions that are more prevalent with aging and lifestyle factors, including: cancer (Davidson, 2012; Langford, Lee, & Miaskowski, 2012), musculoskeletal conditions (Abad, Sarinas, & Guilleminault, 2008; Vitiello, Rybarczyk, Von Korff, & Stepanski, 2009; Ward, Lentz, Kieckhefer, & Landis, 2012), and mental health conditions (Bower, Bylsma, Morris, & Rottenberg, 2010; Luca, Luca, & Calandra, 2013).

Females may experience disruption to sleep related to menstruation, pregnancy or menopause (see http://www.sleephealthfoundation.org.au/fact-sheets-a-z.html).

Fatigue is directly linked to academic and work performance, work related injuries and motor vehicle accidents (see http://www.sleephealthfoundation.org.au/fact-sheets-a-z/421-fatigue-as-an-occupational-hazard.html). In older adults, increased falls are associated with sleep disturbance (St George, Delbaere, Williams, & Lord, 2009).

The economic impact of sleep disorders in adults is estimated to cost Australia AUD$5.1 billion per year of which AUD$800 million are direct health care costs of the disorders and of other medical conditions attributable to them. Other costs include productivity losses, and sleep-loss related accidents such as motor vehicle accidents or work place injuries.

4. Prevalence of sleep disturbance

Children's sleep patterns vary considerably at all ages and may or may not present as a significant cause for parental anxiety. However, up to 40% of typically developing children (infants to adolescents) have a sleep disturbance that impacts on their learning, behaviour, family's well-being and stress levels (Mindell & Owens, 2010). Approximately 65% of children and adolescents with specific genetic syndromes, and 75-80% of those with neurological developmental disability including autism spectrum disorder are estimated to have a *combination* of sleep disturbances (Jan, Weiss, Johnson, Wasdell, Freeman & Ipsiroglu 2008; Tietze, Blankenburg, Hechler, Michel, Koh,

Schluter, & Zernikow, 2011; Tietze et al., 2011) which can last over many years (Stores, 2014).

Sleep disturbance is commonly associated with children who have acute and chronic physical disorders especially where pain or uncomfortable positions can affect sleep, as seen in rheumatoid arthritis, cerebral palsy, dermatitis or burns. Children with severe visual or hearing impairment are reported to have free running or irregular sleep wake cycles. Sleep difficulties are common in children and adolescents with attention deficit disorders, hyperactivity, mental health problems (including anxiety or depression), and post-traumatic stress.

In Australia, 20-35% of adults report disrupted sleep, inadequate sleep duration, daytime fatigue, excessive sleepiness and irritability due to specific sleep disorders or poor sleep habits or lifestyle choices. Common sleep disorders include:

- obstructive sleep apnoea (affecting about 25% of adult male,10% of adult females and up to 80% of adults with developmental disability)
- insomnia often becoming more persistent with age with 13%–33% of the adult population having regular difficulty either getting to sleep or staying asleep
- restless legs syndrome and periodic limb movement disorders are more common with age and reported in about 40% of people over 65 years of age.

The prevalence of disrupted sleep in older adults (65 years onwards) is between 30-43%, and higher with medical comorbidities (Ancoli-Israel, 2009), with primary or secondary insomnia being the most prevalent. It is estimated that 80% of older adults living in long term care facilities and hospital settings have sleep difficulties. Older adults may experience increased nocturia (night time urination) which may have an underlying medical condition or may have become a learnt behaviour (see http://www.sleephealthfoundation.org.au/fact-sheets-a-z/260-incontinence.html).

5. Supporting adequate sleep in children

5.1 Sleep education

Sleep education for parents or carers can take the form of group workshops, individual counselling or written information. Increasing the parents or carers awareness about typical sleep including the developmental changes with age, sleep cycles, sleep stages and need for adequate sleep can improve sleep patterns. So too can introducing positive sleep practices (sleep hygiene or habits) appropriate for the age of the infant or child. See Chapter 9: Resources and further reading.

5.2 Screening for sleep disturbance

Sleep disturbance in children may initially be screened through an informal tool such as the BEARS Sleep Screening Algorithm or the Ten Item Sleep Screener which asks:

1. Does the child snore lightly or loudly at night?
2. Does the child exhibit excessive daytime sleepiness?

3. Does the child have difficulty falling asleep at night?
4. Does the child roll, kick, or move around frequently in sleep?
5. Does the child wake up frequently in the night?
6. Is the child difficult to awaken in the morning?
7. Does the child gasp, choke, or snort in sleep?
8. Does the child stop breathing during sleep?
9. Does the child get enough sleep at night compared with peers of the same age?
10. Does the child have a difficult temperament (irritable or easily frustrated)?

The Autism Network (Malow et al., 2012; Malow, Adkins, McGrew, Wang, Goldman, Fawkes, & Burnette, 2012) suggests screening for insomnia in children on the autism spectrum by asking five questions:

1. Does your child fall asleep within 20 minutes after going to bed?
2. Does your child fall asleep in the parent or sibling's bed?
3. Does your child sleep too little?
4. Does your child awaken once during the night?
5. Do you consider these a problem?

A formal and validated questionnaire can also be used such as Children's Sleep Habits Questionnaire (Owens, Spirito, & McGuinn, 2000) for preschool and school age children.

5.3 Identifying the sleep disturbance and cause

A child may present with a specific sleep disorder or combination of sleep disturbances. The International Classification of Sleep Disorders (American Sleep Disorders Association, 2001) details over 80 sleep disorders across the age groups including infants and children. Mindell & Owens (2010) simplified paediatric sleep disturbances under the following areas:

- bedtime problems
- night wakings
- night time fears
- nightmares
- sleepwalking and sleep terrors
- head banging and body rocking
- bruxism (grinding or gnashing of teeth)
- obstructive sleep apnoea and sleep disordered breathing
- restless legs syndrome and periodic limb movement disorder
- narcolepsy
- delayed sleep phase syndrome
- insomnia and insufficient sleep and inadequate sleep hygiene.

The majority of sleep disturbances can be identified through *a health assessment, completion of a sleep diary* and a *detailed sleep interview.* However, due to the subjective nature of parent report, it is recommended that children at risk also undergo objective measures of sleep assessment (Ashworth, Hill, Karmiloff-Smith, & Dimitriou, 2013).

A *health assessment* from the child's general medical practitioner or paediatrician is required to consider physical or mental health issues including

ear, nose and throat problems, breathing difficulties, asthma, allergies, food intolerances, constipation, digestive problems or severe anxiety. Some children may require a referral to medical specialist and have a polysomnography to diagnose specific sleep disorders such as apnoea, epilepsy, sleep movement disorders or REM sleep disorder. Recent guidelines suggest that children need one night in a sleep clinic without sedation or sleep deprivation (Davey, 2005). It is important to consider the use of any medications the child is currently taking on their sleep pattern.

A *sleep diary* over one to two weeks provides valuable information about the *quantity, quality and timing* (types and frequency of the sleep disturbance) of a child's sleep. The use of a sleep diary has consistently been reported to have a positive impact on parents behaviour in encouraging bedtime routines (Bates, Viken, Alexander, Beyers, & Stockton, 2002) with the sleep difficulty often reducing or disappearing following the completion of the diary (Bramble, 1997). A seven day diary is available to download from the bottom of this link http://www.flinders.edu.au/sabs/psychology/services/casc/.

A *sleep interview* with individual families during a home or centre based visit provides detailed information about current and previous health issues, sleep difficulty, family context, going to bed routines, night waking, morning waking, daytime sleep and other considerations. There are many factors that impact on sleep including parental practices regarding night feeding, use of security or comfort objects and the age a child moves from a cot to a bed. Many families prefer to co-sleep with their infant or child while other families may co-sleep as a response to their child's sleep disturbance. Children with disability (such as asthma, medical conditions or developmental disability) are reported to excessively co-sleep, with their parents expressing additional stress with ongoing co-sleeping. See the FACS Safe Sleeping Guide (Family and Community Services, November 2014) for information on the risks and considerations of co-sleeping.

5.4 Sleep interventions for children

Sleep interventions need to be considered for different age groups. In newborns (0-2 months) and babies (2-12 months) there is considerable information and debate relating to sleep. See Chapter 9 for resources and further reading.

Children's sleep disturbances (not related to physical or mental health issues) can be prevented or resolved through fostering positive sleep practices and developing a sleep plan using communication, sensory, behavioural and pharmacological strategies, as well as goal directed interventions. These are outlined below. These strategies are promoted for both typical developing children and those with disability (Gray, 2013; O'Connell & Vannan, 2008) however there is a paucity of empirical evidence regarding the effectiveness (Cortesi, Giannotti, Ivanenko, & Johnson, 2010).

1. *Communication strategies* such as the use of visual schedules, visual cues and sleep stories (Gray, 2013; Turner & Johnson, 2012; Moore, 2004) are regularly included in sleep plans with children with autism spectrum disorder. View the following link to a parent manual for children with autism spectrum disorder https://www.autismspeaks.org/science/resources-

programs/autism-treatment-network/tools-you-can-use/sleep-tool-kit. Also refer to the FACS Augmentative and Alternative Communication Practice Guide.

2. *Sensory strategies* appropriate to the child's sensory needs or preferences may assist self-soothing or self- regulation for sleep (IDSC, 2005; Jan et al., 2008). These can include pre-bed calming activities, massage and appropriate noise, temperature, levels of light, bed and bedding for optimal sleep environments. Sensory strategies are highly individualised. See the FACS Sensory Processing Practice Guide (Family and Community Services, July 2014) for more information and considerations.
3. *Behavioural* strategies include sleep scheduling, bed time fading, sleep restriction, gradual distancing of parents (*camping out*), extinction (ignoring, standard, partial or with parents present) and scheduled awakening. In systematic reviews of intervention for sleep disturbance in typically developing children, the extinction method had more immediate effect, but other behavioural strategies were as effective although taking longer to achieve change (Owens, France, & Wiggs, 1999; Ramchandani, Wiggs, Webb, & Stores, 2000). Extinction, partial extinction and scheduled awakening have been found to reduce sleep disturbance effectively and efficiently in children with autism (Schreck, 2001). Infants and children's level of distress while using extinction varies greatly. Many families find the extinction or partial extinction strategies (often referred to as controlled comforting, controlled crying, or the checking method) stressful and prefer a more gradual approach especially when their child has complicated needs or health issues such as asthma, epilepsy or disability. This intervention includes promoting evidence based sleep hygiene practices also referred to as sleep tips, positive sleep practices or good sleep habits. These promote adequate sleep in children with and without disability (see resources). For information related to a child's physical disability, see chapter 7. See also the FACS Core Standard: Positive Approaches to Behaviour Support.
4. *Combination of approaches with goal setting:* Families can develop a unique sleep plan for their child based on communication, sensory, behavioural strategies, reinforcement and goal setting (IDSC, 2005). The implementation of the intervention is usually carried out at home through the parent or carer with support from a practitioner over several months. Intervention for children and adolescents with disability report successful outcomes but the approach needs to be individualised using a variety of sleep management strategies (Weiskop, Matthews, & Richdale, 2001).
5. *Pharmacological*: The long term use of medication for sleep disturbance in children is not recommended, however, parents may wish to discuss with their medical practitioner the possible short term use of medication (particularly in a crisis situation), herbal remedies or melatonin in combination with sleep plans (Jan & Freeman, 2004; Owens, Rosen, & Mindell, 2003). The most common and widely researched pharmacological treatment in children with neurodevelopmental disorders is rapid-release melatonin (Gringas et al., 2012; Malow et al., 2012) and/or slow-release melatonin in children with autism spectrum disorder (De Leersnyder, Zisapel, & Laudon, 2011; Rossignol, Daniel, & Frye, 2011). A recent large randomized controlled study examining melatonin use in children with neurodevelopmental disorders, implemented a pre- four to six week behavioural intervention before the melatonin treatment (Appleton et al.,

2012). Following this intervention, 44% of children no longer met the criteria for inclusion in the study, suggesting that medication should not be the first line intervention for sleep disturbance in children with neurodevelopmental disorders.

For more information related to physical disability, see Chapter 7.

6. Supporting adequate sleep in adolescents and adults

6.1 Sleep education

Practitioners working in the community are in a unique position to improve the quality of life for people with and without disability through promoting adequate sleep via education. This can include promoting awareness of the high prevalence of sleep difficulties in people with disability; the serious impact this has on health, wellbeing, function and participation; and the fact that there is much that can be done to rectify sleep difficulties for people with even the most severe disability.

Provision of information resources can promote individual's (and/or their caregiver's) awareness of their own sleep habits, deficits and needs, and enable lifestyle, health and environmental changes to resolve sleep difficulties. The numerous sleep information resources and sleep tips that are available to the general population can be equally relevant to people with disability, and modified to suit specific needs and settings if required.

6.2 Screening for sleep disturbance

It is important to ask people, and/or their caregivers, how they are sleeping as sleep difficulties are frequently not reported (and instead considered as always been that way, part of the disability, just to be expected, or not a priority for the family). Practitioners should include sleep screening questions into assessments where relevant due to increase prevalence of sleep disturbance people with disability.

Basic sleep screening questions may include:

Option 1:

1. Do you feel you get enough sleep (*quantity*)?
2. Do you feel refreshed after a night of sleep (*quality*)?
3. Do you sleep at regular times that fit with your preferred daily schedule (*timing*)?

Answers to these question or observations from carers may lead to a more formal sleep assessment.

Option 2:

When asked, people or their caregivers may report that their sleep is 'ok, fine' (ie, the same as it has always been, or as good as can be expected). People's own awareness of their own sleep difficulties may not emerge until they are

asked specific questions about whether their sleep pattern suits them. Possible screening questions include:

1. What time do you normally go to bed at night and wake up in the morning? Do you often have trouble falling asleep at night?
2. About how many times do you wake up at night?
3. If you wake up during the night, do you usually have trouble falling back asleep?
4. Does your bed partner say (or are you aware) that you frequently snore, gasp for air or stop breathing?
5. Does your partners say (or are you aware) that you kick or thrash about while asleep?
6. Are you aware that you ever walk, eat, punch, kick or scream during sleep?
7. Are you sleep or tired during much of the day?
8. Do you usually take one or more naps during the day?
9. Do you usually doze off without planning to during the day?
10. How much sleep do you need to feel alert and function well?
11. Are you currently taking any type of medication or other preparation to help you sleep?

(Bloom, Ahmed, Alessi, & Ancoli-Israel, 2009).

Option 3:
Sleep disturbance may initially be screened using the Epworth Sleepiness Scale (available via http://epworthsleepinessscale.com/about-epworth-sleepiness/ . This scale asks people to rate their usual chances of dozing off or falling asleep in eight different situations or activities that most people engage in as part of their daily lives, although not necessarily every day. A score of 0-4 indicates satisfactory daytime functioning; 5-9 indicates daytime tiredness or lack of energy and score of over 10 as excessive daytime sleepiness with a possible underlying medical condition. A pictorial format of the Epworth Sleepiness Scale has been developed for adults with intellectual disability (Ghiassi, Murphy, Cummin, & Partridge, 2011).

Option 4:
Formal and validated questionnaires can also be used. These include:

- Pittsburgh Sleep Quality Index
- Pittsburgh Insomnia Rating Index
- Insomnia Severity Index (Bastien, Vallières, & Morin, 2001)
- Functional Outcomes of Sleepiness Questionnaire, (Chasens, Ratcliffe, & Weaver, 2009)
- Holland Sleep Disorders Questionnaire, (Kerkhof et al., 2013): recently developed as a screening tool to help to identify sleep disorders in relation to more specific domains of insomnia, parasomnias, circadian rhythm sleep disorder, hypersomnia, restless legs syndrome/periodic leg movement disorder, and sleep disordered breathing.

6.3 Identifying the sleep disturbance and cause

There are many common sleep disorders. For information on these refer to the International Classification of Sleep Disorders http://www.esst.org/adds/ICSD.pdf which details over 80 sleep disorders across the age groups, or http://www.sleephealthfoundation.org.au/fact-sheets-a-z/219-common-sleep-disorders.html.

The majority of sleep disturbances can be identified through a health assessment, completion of a sleep diary and a detailed sleep interview as outlined below.

A *health assessment* is needed if the sleep disturbance is likely to be caused by one of the following: medication, sleep apnoea, restless legs, depression, narcolepsy, pain or other medical conditions. It is recommended the person seeks medical review to manage the underlying cause appropriately and/or is refered to a sleep specialist if they require overnight polysomnography to diagnose a specific sleep disorders. Adequate pain management is essential to obtain optimal sleep.

The Insomnia Management Kit is a comprehensive online *sleep diary* that practitioners can use to determine sleep disturbances in adolescents and adults and select management strategies (http://www.sahealth.sa.gov.au). The flow chart and forms including sleep diaries and information sheets are readily available at: http://www.sahealth.sa.gov.au/wps/wcm/connect/Public+Content/SA+Health+Internet/Clinical+resources/Clinical+topics/Substance+misuse+and+dependence/Sleep+problems+-+Insomnia+Management+Kit.

A detailed *sleep interview* can be used to gather further information. Allied Health practitioners may particularly like to know when the sleep disturbance started; who perceives sleep as a problem; what is the impact of inadequate sleep on that person and what change in quality of life would be perceived with improved sleep. Specifically ask people with disability or their proxy:

1. Does the person have his/her own bedroom?
2. What is the persons' level of mobility and level of overall disability?
3. What are the person's daily activities? Specifying the type (sedentary/active) and number of activities completed during the day.
4. Does the person have easy access to drinks containing caffeine at any time?

(Hylkema & Vlaskamp, 2009)

Other assessments may be required to consider sensory processing, mobility, toileting and safety. Applying the Model of Human Occupation (MoHo) (Keilhofner, 2008) components of volition, habituation, performance capacity and environment can also assist assessment. See case studies for older adults (Boswell, Thai, & Brown, 2015) and people with learning difficulties (Nakopoulou, Wale, & Wood, 2015) in an Occupational Therapist's Guide to Sleep and Sleep Problems (Green & Brown, 2015).

6.4 Sleep Interventions for adolescents and adults

Intervention begins by promoting evidence based sleep hygiene practices also referred to as sleep tips, positive sleep practices or good sleep habits. These promote adequate sleep in people with and without disability (see resources). For information related to physical disability, see the following chapter.

Sleep interventions need to cater for different age groups, types of sleep disturbance and disability. Practitioners can be instrumental in developing non-pharmacological interventions to improve sleep in adolescents and adult with

disability. The techniques or strategies of cognitive behavioural therapy – Insomnia (CBT-I) used for adolescents and adults with primary or comorbid insomnia are often the basis of intervention for other sleep disturbances (Rybarczyk, Lund, Garroway & Mack, 2013). However, practitioners need to consider an individual's needs. For example, a person with pain may need pain management for sleep and positioning in bed rather than cognitive behaviour techniques. Sleep may also improve with changes to the environment or daily schedule.

Often a combination of interventions can be effective. For example adolescents may benefit from cognitive behavioural techniques, relaxation and light therapy (Gradisar, Dohnt, Gardner, Paine, Starkey, & Menne, 2011).

Timing and rhythms of sleep and daily activity

The importance of regularity of daytime activity for sleep is well recognised (Moss, Carney, Haynes, & Harris, 2015). People who have trouble getting to sleep, who wake too early, or are tired during the day may benefit from information about the importance of 'just right' timing for bedtime, waking, and daily activities such as meals, exercise and time spent outdoors.

Baseline data is collected via a sleep diary to record sleep patterns and determine the total sleep time over 24 hours and then the average over a week. Intervention then involves initially restricting the amount of time spent in bed to the average amount of time slept per night based on a weekly average (sleep restriction). The person follows a strict timetable of bedtimes and arising times to decrease the time spent awake in bed. The person maintains a regular rising time, even on weekends or after a night of bad sleep. Naps are avoided or limited to 15-20 minutes. Once sleep efficiency (time spent in bed actually sleeping) reaches 85%, the sleep window is gradually increased each week by moving the bedtime 30 minutes earlier.

There needs to be a balance between sleep and day activities. Consider the person's day time activities such as time outside during the day, and active meaningful daytime occupations. In the evening consider more restful or sedentary routines. Regular exercise should occur no sooner than about three hours before sleep time. Occupational therapists can work with the individual to create daily activity planners, in context of their family, school, work and social routines. Visual schedules, including fridge charts, or i-pad planners, may be useful to help with maintaining schedules. Be aware that some people with disability are 'put to bed' earlier than is appropriate for their age, due to habit (for example 'He's always been in bed by 7.30') or because of timing and schedule of care assistants ('We have to put him into bed by 8.30, because after that we only have one care assistant, and he needs two people for safe manual handling'). Some individuals rouse at inappropriate times because they do not realise that it is still night time. Simple cues to indicate when it is time to get up or time to wake can be useful. These include clocks with lights which can be set to gradually make the bedroom lighter at an appropriate time.

Calming and settling before bedtime

People who have trouble getting to sleep may benefit from information about the importance of calming activities prior to sleep time. Discussion about the negative effects of electronic screens close to sleep time, about exercising too

close to bedtime, and the possible beneficial effects of bath or shower prior to bedtime may be useful. Occupational therapists can work with individuals to identify activities which they enjoy and which are calming and relaxing and feasible before bedtime. People with disability, who for practical purposes or for pain management go into their bed some hours before desired sleep time may report that screen time is an essential part of their evening activity routine. Strategies such as using screen filters (to filter out the blue spectrum light which impedes melatonin onset) or having a routine of turning off and putting away the device, allowing time to settle to sleep without the device, may be useful.

A person can decrease their anxiety and reduce cognitive and physiological arousal at bedtime using techniques such as mindful breathing, progressive muscle relaxation, and meditation. These techniques take time to learn before being useful to assist sleep. For example, it may take an adult three weeks of daily practice to learn the relaxation response with progressive muscle relaxation.

Ensure that the bedroom setting is suitable for sleep
While individuals vary in their sensory preferences, environments that are conducive to sleep include:

- A room as dark as possible for sleeping, restricting blue light that suppresses melatonin levels (Gooley, Chamberlain, Smith, & Khalsa, 2011) for instance using block out blinds and using a dim night light/movement sensitive light when required for safety for mobility, monitoring by carers or a person's anxiety of being in the dark.
- Maintaining the temperature slightly cooler (16 to 20 degrees) to allow the body temperature to drop to allow sleep. There is large variation of preferred or experienced body temperature between individuals and other factors such as heating/cooling, seasons of the year, bed attire and the type of bed and bedding impact on sleep quality.
- A quieter room, calming music to facilitate sleep or the use of white noise to mask noise available (available as CD or various apps).

As circadian rhythm disruption are often seen in residents in long-term care or hospital settings (White, Ancoli-israel, & Wilson, 2013) it is important to facilitate the optimal sleep environment http://www.somnia.surrey.ac.uk/pdf%20and%20word%20documents/SomnIA%20booklet%20FINAL.pdf. A person with sensory processing difficulties may also benefit from sensory approaches to improve self-regulation and sleep (Hylkema & Vlaskamp, 2009). This may include use of a heavy quilt, a sheepskin rug, or light satin sheet, depending on preference. See the Sensory Processing Core Standard.

Practitioners can help individuals or caregivers to analyse the sleep setting, to be sure that it is optimum for a good night's sleep. Sounds, light, temperature, and disruptions can be explored. Overnight video can yield surprising information, especially regarding the amount of noise and light that pervades the bedroom during the night and early hours of the morning.

Falling asleep in bed, sleep onset association
People who have trouble getting to sleep, or going back to sleep if they wake during the night, may benefit from information about the importance of falling asleep in their bed (that is not in the lounge chair or wheelchair). It is useful to analyse the factors that the individual associates with falling asleep (sounds, textures, light, smells), so that these can be sustained throughout the night. It is important to explain that all people have phases of light sleep, with awakening, during the night, and that the right sleep-onset factors or stimulus control will assist their ability to go back to sleep easily. Many people have sleep onset factors which are not sustainable throughout the night (for instance will only fall asleep having their foot massaged, or with sound of household voices), and it will be useful to explore and offer new sleep onset factors (such as white noise or soft music in the bedroom, dim night light, or a ceiling fan) which can be in place all night long. A gradual approach to shifting these factors may be most suitable.

A person can learn to associate bed with sleep by using bed for sleep and/or sex only, for more information see the Supporting Sexuality Core Standard. One behavioural strategy to reduce difficulty sleeping is to go bed only when sleepy. When the person cannot fall asleep within 15 minutes, they get out of bed and engage in a non-stimulating task in a different room. Again the use of electronic devices in the bedroom is not recommended as they become a negative sleep association. The person returns to bed only when sleepy. This technique may need to be adapted if a person has only access to one room, has limited mobility in and out of bed or the 15 minutes suggested time is not appropriate to that person.

Cognitive behaviour therapy
Evidence shows that a cognitive behaviour therapy approach can be effective for people with co-morbid conditions such as pain or intellectual disability in the management of insomnia. In this intervention, the person challenges and modifies unrealistic beliefs and irrational fears about their sleep patterns. They learn about normal and abnormal sleep, learn about the development of good sleep hygiene and identify maladaptive beliefs, and then replace them with more adaptive beliefs. For more facts and tips on sleep, see http://www.sleephealthfoundation.org.au/fact-sheets-a-z/223-sleep-myths.html.

For many people with disability, insomnia is unrelated to their disability. For instance, most adults wake several times each night for a short time but some increase their waking time due to their fear or anxiety about not getting back to sleep. Effective cognitive strategies in these instances include thought blocking, giving up trying to sleep and stop clock watching (Espie, 2006).

Light Therapy
The sleep-wake cycle is one of the circadian rhythms influenced by day and night (light and darkness). It is common in adolescents and some adults to have difficulty falling asleep (delayed sleep phase) at night until a late hour. To adjust their sleep time and bring bedtime earlier they may benefit from having bright light therapy in the morning and dim light in the evening. For a person who falls asleep early and wakes early they may adjust their sleep time and

bring the bedtime later by having bright light therapy in the evening and dim light in the morning.

7. Supporting adequate sleep for people with physical disability

Sleep for people with physical disability is a 24 hour affair balanced with rhythms of daytime activity and rest, as well as night time sleep (Green & Brown, 2015). Adequate sleep depends on a multitude of factors. Some factors are specific to the person's health condition or disability, especially issues around pain and discomfort (Baxter, 2013; Castle, Imms, & Howie, 2007; Engel, Jensen, Hoffman, & Kartin, 2003; Jahnsen, Villien, Aamodt, Stanghelle, & Holm, 2004), as well as respiration, gastro-intestinal function, thermoregulation, movement control, independent mobility, continence, skin integrity, carer needs, sensory regulation, need for specialized bed or bedding equipment, epilepsy, and medications. Sleep for people with disability also depends on the same factors that are relevant to all adults, including general health and mental health and wellbeing (these can include factors related to lifestyle and habit, such as diet, exercise, time spent outdoors, use of technology, and stress management).

People with disability and health conditions are likely to have varied nights, and a single night of measuring for assessment is usually not enough. Combinations of sleep diaries, behaviour logs, day/night activity logs, and sleep / activity trackers such as actigraphy or personal activity devices, can provide useful information over one to two weeks. This information helps to show patterns of sleep and activity, and to identify issues such as sleep phase delay or circadian rhythm disorder. More specific information such as photography or over-night video is more feasible over two to three nights in the home setting, and can show specific aspects of the person's movement and posture, as well as other events that may occur during sleep (such as the family cat sitting on the individual during the night). Similarly, specific measures such as pulse oximetry, thermologgers for temperature, and pressure mapping are more feasible in the home setting for only one or two nights.

7.1 Specific and targeted assessment of sleep difficulties

A range of tools can be used for holistic assessment in relation to sleep difficulties, which ideally takes place in the person's own sleep setting. It is important to be mindful of impact of any assessment (possibly intrusive on individuals and their household and time consuming for all concerned). Therefore, it is useful to screen first, then consider the need and the options for more specific and detailed assessment (McCabe, Blackmore, Abbiss, Langdon, & Elliott, 2015).

Screening

From checklists and related discussion (see chapters 5.2 and 6.2) it may be possible to determine if more specific in-home or clinic based assessment is required. People with complex neuro-motor conditions may need to have in-home monitoring and assessment of breathing, temperature and so on for

their health and safety. In all cases this depends on the person's condition and ability to use and manage the tools and devices. Thorough and practical assessment will look at the person, their activities, their environment, the bed, bedding and any equipment that they use. See the 24 Hour Positioning Core Standard.

Pressure mapping
Pressure mapping may also be a specific and relevant assessment tool for those who are vulnerable to pressure injury due to movement impairment or uncontrolled movements. Recording pressure readings with position changes, or on different lying support surfaces, can help with decisions and for most effective pressure care. However pressure mapping is just one part of what must be a holistic, team process (Reddy, Gill, & Rochon, 2006).

Assessment of posture and movement
Assessment of posture and movement in the lying position for sleep and for rest is particularly relevant for people with musculo-skeletal and neuro-motor conditions. It is important to view this in holistic context as positioning for function. That is, positioning support must be considered in relation to the impact of lying position on: respiration, pain, comfort, skin care, movement control, gastro-intestinal function, mobility, continence, manual handling, safety, sleep, and postural care.

Hands-on assessment is required to determine patterns and limitations of posture and movement, identify correctable or fixed deformities, and identify uncontrolled and purposeful movements that could cause person to move into painful or dangerous positions. For people with severe physical impairment, it may be necessary to do a full 'postural assessment' as you would for seating and positioning. Physical assessment also involves knowing about the other daily interventions and activities which will impact on the person's posture and movement, pain and comfort.

More specific assessment of the person's body shape and changes and progression of deformity may be appropriate for people with neuro-motor conditions who are at risk of development of postural deformity. Assessment will include hands on postural assessment, photography, and note of x-ray information from hip surveillance and spinal clinic monitoring. Practitioners may also use specific assessment procedures, such as Goldsmith's indexes of symmetry, measuring the sternal-spinal line for measurement of chest asymmetry, and measuring of windsweeping deformity. Use of these measures depends on time, training and resources available.

Photography can be a useful tool, helping with decision making and clinical reasoning, feedback and explanation to individual and caregivers. Consent, dignity, and confidentiality issues must be adhered to.

See the 24 Hour Positioning Core Standard for further information.

7.2 Sleep Intervention

Sleep intervention is underpinned by current models of practice including: the person and family centred approach, biopsychosocial context, matching the person and technology (Scherer, 2008). It relies on each practitioner's knowledge base about the condition, modalities of practice and clinical reasoning.

An inter or transdisciplinary team approach is recommended (see Philosophies, Values and Beliefs Core Standard). All members of the team can bring knowledge and skill to the sleep intervention. These team models require communication between members of the team, so that services are integrated (for example, a clinical psychologist may be asked to implement a behavioural support strategy; if they do not check with the team, they may not be aware about sensory regulation and communication strategies that are in place).

Be aware that conflicting priorities can be counterproductive. For example an orthopaedic surgeon may advise that the person must sleep on their back, but this may compromise respiration and management of gastro-oesophageal reflux; the gastro-intestinal specialist and dietician may advise that the person needs continuous feeds during sleep, but this may create challenges for a safe sleeping position if the person cannot maintain a semi upright position during sleep.

For people with any health condition or disability, it is important to consider intervention strategies with the holistic perspective which has guided the assessment process. Some individuals may be specific about their expected outcomes of the intervention, and a goal setting process, using the Goal Attainment Scale and / or the Canadian Occupational Performance Measure (Carswell et al., 2004), can be useful to determine the focus of the intervention.

Ensure that the individual is safe, and comfortable in their bed
Thermal comfort, sensory comfort, and postural/physiological comfort are essential for good sleep as follows:

a. Thermal comfort: many individuals have difficulty regulating body temperature during sleep – this can be due to the physiological aspects of their gender and age, the neurophysiology of their condition, because of inability to change position for thermal comfort, or inability to adjust bedding as required. Simple measures such as use of bed socks, ceiling fans, or open windows, can make a difference. More specifically, thermoregulation bedding can be provided for trial. Options here include use of air flow overlays for people who report that hyperhydrosis (excessive perspiration) is an issue. Absorbent or wicking materials (such as fleecy, bamboo or terry toweling stretch sheets) may also be effective. There are services that offer trial of special thermoregulation bedding, and this bedding is available online or from some commercial bedding stores. Thermoregulation clothing (t-shirts, pyjamas) is also available online. Be aware that some individuals or caregivers choose to use moisture proof sheets on the bed due to difficulties with continence, as well as reflux,

vomiting, overnight feeds, excessive salivation. Some may simply buy plastic sheeting from hardware stores, or use shower curtains. These can cause people to be hot, sweaty and uncomfortable. Consider the use of soft, stretchy and breathable moisture proof bedding (fitted sheets, duvet covers, pillow covers) made for the purpose obtained.

b. Sensory comfort: occupational therapists will be well equipped to help people to explore their sensory requirements throughout the day and before bedtime to help with calming in readiness for sleep. Sensory comfort in bed may be an issue. It is important to be aware that everyone is different, and also that the individual's preferences may be different from one night to the next. It is advantageous if occupational therapists have a repertoire of equipment to lend, for trial (pending infection control and second hand equipment risk appraisal and decision making). Equipment items that may be trialled for sensory comfort include fleece overlays, body comfort cushions (including cushions which are moisture proof), a heavy or light-weight cover depending on preference, cushions to make a 'nest' in the bed, ceiling fans, satin sheets or pillow covers, stretchy pyjamas, and even the 'just right' bed socks. See the Sensory Processing core standard for more information.

c. Postural / positioning comfort: Individualised positioning support may be required for all aspects of comfort and pain management for sleep. Lying position in bed will have an impact on comfort and pain management for musculo-skeletal (eg hip pain, back pain, neck pain), gastro-intestinal (reflux, constipation), respiratory (breathing comfortably) and movement control (managing or limiting uncontrolled movements) conditions.

   Practitioners should consider the bed, the mattress, pillows, and additional positioning support items such as cushions and wedges. In the first instance, people may benefit from use of a bed wedge, bed raisers, portable adjustable head raise, or electric adjustable bed to ensure that they are able to raise/lower the head of their bed for comfortable lying position. Elevation of head of bed can affect respiration, digestion (swallowing and reflux management), and musculo-skeletal comfort. It is essential that the mattress is just right for pressure care and for comfort during sleep. With permission of the individual or caregivers, practitioners should pull back the bedding and even remove the cover of mattresses, to visually check and put their hands on to feel the mattress. Even the most vigilant and attentive caregiver may be surprised to discover that the relatively new, or high level mattress has 'bottomed out', and no longer provides a comfortable supporting surface. It may be necessary to arrange a trial of new/different mattress, before deciding on which sort best suits the individual.

   Individualised positioning support for comfort may be as simple as providing a cushion under the knees (for people who have back pain, with lordosis, and feel more comfortable resting with slight flexion of their hips and knees), providing a foot cradle to keep bedding from pushing down onto sensitive feet, or providing a lower, higher, or C shaped pillow for 'just right' head and neck positioning. People with complex positioning support needs may need individualised positioning support items, to help support

their head, trunk, shoulders, pelvis, hips and limbs in as neutral position as possible. There is a range of lying support equipment options available. Soft Velcro or non-slip stretch sheeting can be used to place padded brackets, foam wedges, and shaped cushions for this 'just right' body support. Items may be as simple as usual pillows and cushions, rolled up towels or even the 'just right' shape and size soft toys. Dedicated positioning support items are available, and custom shaped support cushions can be made to order. Note that in Australia precribers must comply with the Therapeutic Goods Act for both commercial and custom made items.

See the 24 Hour Positioning Core Standard for further information.

Ensure that appropriate strategies are in place for behaviour and communication support

People with physical disability and co-morbid cognitive impairment or behavioural disorders may need the same psycho-social and behavioural support as would be used for promoting participation in other aspects of daily living. Depending on the person's needs, and preferences, various supports can be used to promote bedtime routines, and the ability to stay in bed until desired wake up time. Visual cues, social stories, reward charts, and gradual distancing may be appropriate for the individual. It makes good sense to work with others in the person's behaviour support team (eg social worker, psychologist, speech pathologist, teacher, caregivers) to identify the most effective behaviour support approach for each individual. Evidence shows that a cognitive behaviour therapy approach can be as effective for people with co-morbid conditions such as pain or intellectual impairment, for the management of insomnia. See the FACS Core Standard: Positive Approaches to Behaviour Support and the Communication Practice Guides for further information.

Ensure that appropriate mental health support is in place

Stress, grief, anxiety, and depression have a significant effect on ability to go to sleep, and to stay asleep. Interventions such as acceptance and commitment therapy, mindfulness, and cognitive behavior therapy are reported to be effective with people with chronic conditions such as pain, depression and anxiety, and can be also used effectively for people with intellectual disability. It is important to ensure that all in the team are well connected, to ensure a consistent approach to communication and behaviour management strategies.

Ensure that medical conditions are addressed

It is too easy to see the sleep difficulty only in relation to issues related to the person's disability or diagnosis, and to miss other conditions which may be affecting health, wellbeing and sleep. This is especially the case when the individual requires support with communication.

Consider various health conditions which may cause pain, or distress, such as ear infections, headache, toothache, urinary tract infections, constipation, and allergies. Be aware that sleep disorders may be present, independent of the person's disability or diagnosis. These include conditions such as confusional arousals, REM sleep behaviour disorder, sleep walking, nightmares, periodic limb movement disorder, restless legs syndrome and sleep disordered

breathing. Note the timing and dose of medications, and the impact that this has on daytime alertness, and on sleep/settling difficulties. Encourage the individual to tell their medical specialist if sleep is a problem. Note that medications can make a difference and support sleep strategies; exogenous melatonin in particular has strong evidence base as an effective support for sleep onset difficulties, particularly for people with neurological impairment (Braam et al., 2010; Lemoine, Nir, Laudon, & Zisapel, 2007). It may be appropriate for occupational therapists to encourage the individual to talk to their doctor about sleep issues, and possible trial of melatonin.

Complementary medicine is also recognised as having a place in treatment of sleep difficulties, with reported positive effects of yoga and meditation, aroma therapy, acupuncture and acupressure(Oliveira, Hachul, Goto, Tufik, & Bittencourt, 2012; Patra & Telles, 2011; Sarris & Byrne, 2011).

8. Conclusion

Promoting adequate sleep across the lifespan requires the provision of services at three levels: community, medical services and specialised sleep clinics. While community services may address common sleep disturbance, medical services and sleep clinics are often required to identify and address sleep disturbances related directly to physical and mental health issues.

Practitioners working in community and medical settings have a valuable role in promoting positive sleep practices in infants, children, adolescents, adults and older adults.

Sleep disturbances are prevalent across all age groups, and in particular affect people with disability and health conditions across physical and mental health domains. The impact of sleep disturbance on health, wellbeing, function, participation and quality of life is significant. Occupational therapists have a unique role in identifying sleep disturbance, as part of their assessment of individuals' daily activity, participation and occupational performance. It is the occupational therapy practitioner's business to work as part of multi-disciplinary team to address sleep difficulties, because:

i) the effects of poor sleep will impact on the effectiveness of all occupational therapy interventions, and
ii) occupational therapists have relevant skills towards addressing sleep difficulties, with focus on the rhythms and routine of everyday activity, on the environment, on sensory and mental health approaches for health and well-being, and on specialised equipment provision when required.

It is recommended that practitioners routinely screen for sleep disorders and address sleep issues in each person centred plan. When a combination of strategies is used, the critical factors leading to a successful intervention for sleep disturbance are often not known. Further research is required comparing different sleep intervention strategies and regarding the effectiveness of different education and training methods. For some people, ongoing support and monitoring by practitioner over several weeks or months is needed while a person's sleep pattern is changing.

Promoting adequate sleep in *quantity, quality* and *timing* for people of all ages with disability can significantly improve the quality of life and wellbeing for that individual and their families.

9. Resources and further reading

Sleep diaries, sleep interviews and sleep forms

- Mindell & Owens' *A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems 2010* (a code is given within the textbook to access online resources–note new edition soon to be published).
- Durand's *Sleep Better!: A Guide to Improving Sleep for Children with Special Needs, Revised Edition 2014* (Durand, 2014).
- Intellectual Disabilities Services Council (IDSC) *Sleepwise: A Resource Manual. Positive Sleep Practices for Young Children with Developmental Delay 2005* (IDSC, 2005).
- Stores *Sleep and its Disorders in Children and Adolescents with a Neurodevelopmental Disorder. A Review and Clinical Guide. Cambridge: Cambridge University Press 2014.*

Sleep interventions for children

- *Sleeping like a baby - not! Evidence and current controversies* is a webinar presented by A/Prof Harriet Hiscock discussing common sleep problems in infant sleep management. This webinar can be viewed on this link http://www.aracy.org.au/publications-resources/area?command=record&id=195.

- http://raisingchildren.net.au/

- SIDS and Kids NSW and Victoria supports parents and families who experience the death of their baby or young child during pregnancy, birth, infancy and childhood including miscarriage, stillbirth, neonatal death, sudden unexpected death in infancy and the death of a child for any reason. SIDS and Kids NSW and Victoria focus is also on education through programs such as the Safe Sleeping Campaign http://www.sidsandkids.org/

- Family and Community Services. (November 2014). Safe sleeping: Supporting parents to make safer choices when placing their baby to sleep http://www.facs.nsw.gov.au/__data/assets/pdf_file/0013/303124/FACS_safe_sleeping_guide.PDF.

- For babies and toddlers, the Raising Children Network has user friendly guides linked to evidence http://raisingchildren.net.au/articles/evidence_for_this_guide.html and http://raisingchildren.net.au/articles/about_this_guide.html for parents and carers around behavioural strategies. There are also strategies for

children when transferring from a cot to a bed, dealing with fear and worries, night mares, night terrors and sleepwalking.

- An online appendix in Mindell and Owens' *A Clinical Guide to Pediatric Sleep: Diagnosis and Management of Sleep Problems– 2010* (a code is given within the textbook to access http://solution.lww.com/clinicalguidetopediatricsleep – note: new edition soon to be published).

Sleep interventions for adolescents and adults

- http://www.sleephealthfoundation.org.au/fact-sheets-a-z/225-tips-for-a-good-night-sleep.html

- http://www.apa.org/topics/sleep/why.aspx

- Insomnia Management Kit

- Harvard Medical School interactive information resource (http://healthysleep.med.harvard.edu/portal/), Western Australian Health Department
- http://www.health.wa.gov.au/docreg/Education/Population/HP9720_good_night_sleep.pdf), Victorian Better Health (http://www.betterhealth.vic.gov.au).

Resources for specific health conditions include:

- interactive website on sleep and dementia Canadian Professor of Occupational Therapy, Prof Cary Brown (http://www.sleep-dementia-resources.info/)
- podcast for health practitioners (https://rehabilitation.ualberta.ca/professional-development/rehabilitation-webcasts/occupational-therapy-webcasts)

- For people with Alzheimer's disease: http://www.mayoclinic.org/healthy-lifestyle/caregivers/in-depth/alzheimers/art-20047832.

Further reading

An Occupational Therapist's Guide to Sleep and Sleep Problems (Green & Brown, 2015) provides background information, assessment and intervention strategies for:

- older adults
- intellectual disability
- mental health including anxiety disorders, depression, schizophrenia
- dementia including Alzheimers
- neurological conditions including Parkinson, Multiple sclerosis, traumatic brain injury and stroke
- chronic fatigue syndrome.

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