

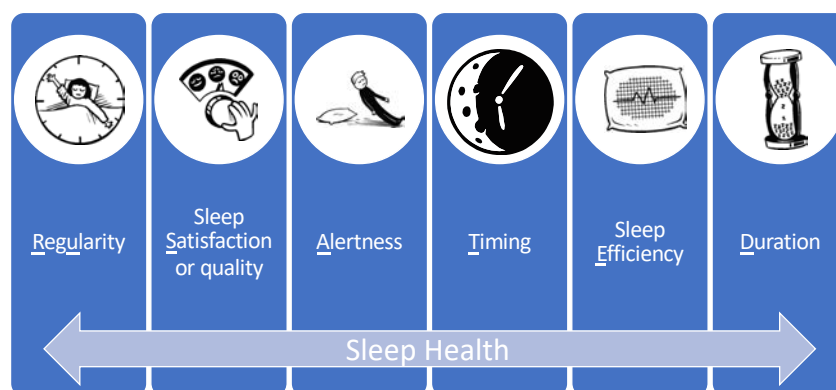
perinatal sleep

Dr Bronwyn Sweeney, MCLinPsych, PhD, ASA, 13 May 2026



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Sleep health – 6 key factors



RU SATED



Buyse, 2015

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Nature & Nurture

Humans are biologically “wired” to sleep at night and to be awake during the day. Multiple processes work in harmony to produce sleep/wake rhythms to our days and night.

Human babies develop sleep habits and patterns within their unique whānau setting. These habits and patterns change with age, stage and environment, continuously and throughout our lives.



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Sleep is regulated by two processes

1) **Circadian system** – a system of timing across the 24-hr day

- Endogenously generated daily rhythms e.g. sleep/wake cycle, alertness, core body temperature, hormone secretion such as growth hormone
- Exogenous synchronizing: external signals synchronise the clock daily through environmental cues, especially light, and also the timing of behaviours such as eating and physical activity

Bathory & Tomopoulos, 2017



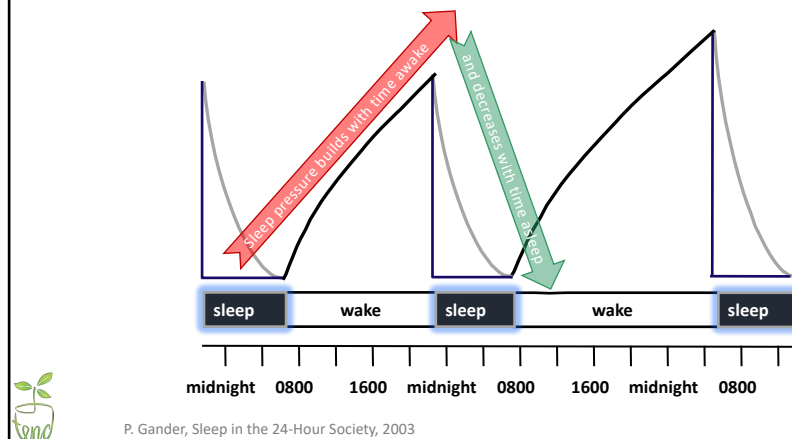
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Internal Sleep Drive

Sleep/wake homeostasis – sleep pressure

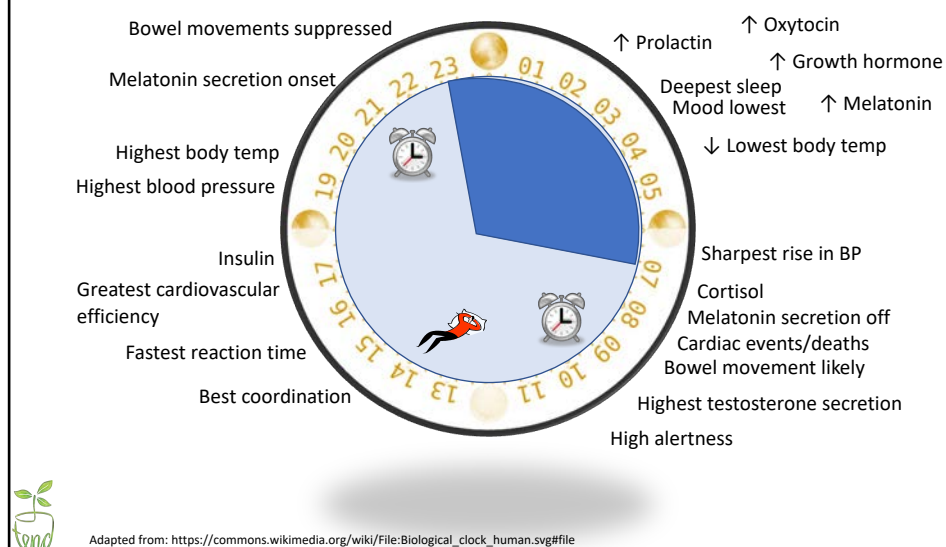
Biological drive for a balance between sleep and waking

Sleep promoting substances (somnogens) build up in the central nervous system during waking and are dissipated during sleep



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Sleep/Wake Timing



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Non rapid eye movement sleep (nREM)

- sleep becomes progressively deeper – harder to rouse
- brain activity, heart rate and breathing slow and regular
- Brain and core body temperature drop
- muscles relaxed, movements common but reduced
- groggy if disturbed from deepest sleep
- dominant in first part of sleep, ~75% of total sleep



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Rapid eye movement sleep (REM)

- intense brain activity, brain temp rises
- bursts of rapid eye movements
- dreaming most often reported
- heart rate and breathing uneven
- muscles “paralysed” (atonia)
- dominant in later night, ~ 25% of sleep



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Not enough sleep affects the brain

- irritability, impatient, flat mood, decreased regulation of pain and emotions, mood swings
- harder to concentrate and learn, decreased inhibition (easily distracted)
- more inclined to rumination and worry
- poorer coordination (clumsiness)
- slower reactions
- poorer decision making
- memory processing
- ↑negative attention bias
- ↓positive attention bias
- poorer emotion recognition



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Not enough sleep affects behaviour

- feeling sleepier (? a motivator for sleep, to lie down, to shut eyes, facilitates preparatory behaviours)
- sleep preparation – seek safety, comfort, social dynamics
- ↓motivation – less likely to do rewarding things
- want to engage less with others
- less trusting
- less likely to want to be with strangers
- avoid social and physical activities (much more likely to be social when we feel alert)
- social activity “masks” sleepiness – activates our “alerting” system but at a cost of feeling even more sleepy after



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Poor sleep affects the body

- increased appetite / altered food choices
- glucose tolerance
- immune system
- inflammatory responses
- appear tired / less healthy / sad (beauty sleep!)
- intrauterine growth
- increased blood pressure, diabetes, preterm birth
- increased risk of intervention including c-section
- increased mood and anxiety symptoms



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Sleep, anxiety and depression

- Sleep disturbance is an important feature of most anxiety and mood disorders
- Insomnia symptoms can precede anxiety
- Insomnia and/or anxiety often precede depression
- Changes in “social rhythms” – often delaying sleep
- Longer sleep onset is associated with perinatal mood and anxiety symptoms
- Shorter sleep duration and delayed sleep timing are seen in OCD (Nota, Sharkey & Coles, 2015)
- Disturbed sleep can be considered a “stressor” in it’s own right



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- Circadian rhythm disturbance of melatonin is seen in women with perinatal depressive symptoms (Parry, et al., 2008)
- Sleep timing appears to shift – “postpartum jetlag” (Sharkey, Pearlstein & Carskadon, 2013)
- Depending on timing, light exposure can be mood enhancing and rhythm disrupting
- SSRIs appear to increase light sensitivity – suppressing melatonin which produces a decreased signal for sleep (McGlashan et al, 2018)
- This may be exacerbated in “evening types” who tend to more irregular sleep habits (McGlashan et al, 2018)
- Sleep disturbance is linked to suicidality (Perlis, et al, 2016)



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Sleep in pregnancy

- Major physiological changes associated with pregnancy, labour, birth, and breast/chest-feeding.
- Major psychological transitions to becoming a parent, feeding and caring for a newborn.
- Extra considerations in transgender people



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First Trimester

- Increased daytime sleepiness, insomnia ($\geq 38\%$), obstructive sleep apnoea ($\geq 15\%$) and ($\geq 20\%$) restless legs syndrome (Meers & Nowakowski, 2022)
- By 11/12 weeks gestation (Lee et al, 2000):
 - $\uparrow$ TST approx 30 minutes
 - $\uparrow$ night waking, $\downarrow$ sleep efficiency, $\downarrow$ slow wave (deepest) sleep
 - High variability across all trimesters on sleep variables
- Circadian clock changes –
- Sleep timing changes



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Second Trimester

- Sleep and sleepiness improved compared to first trimester
- Disturbance due to movement of foetus
- Nasal congestion $\rightarrow$ snoring
- Obstructive sleep apnoea



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Third Trimester

Disturbance due to many factors now.

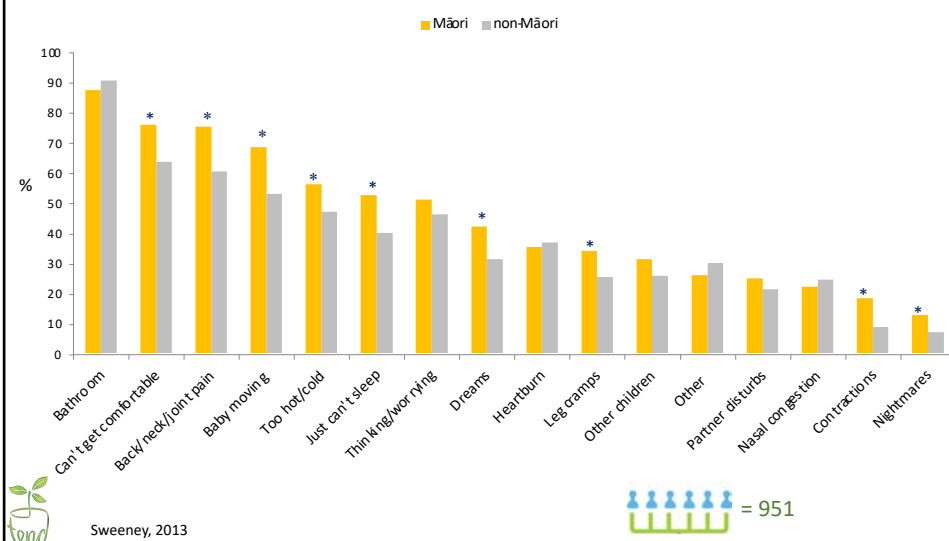
- Timing may shift around
- Sleep efficiency declines
- Waking doubles from pre-pregnancy
- Decrease in total sleep duration
- ? decreased SWS ? change in REM sleep



Image: Chichicko, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

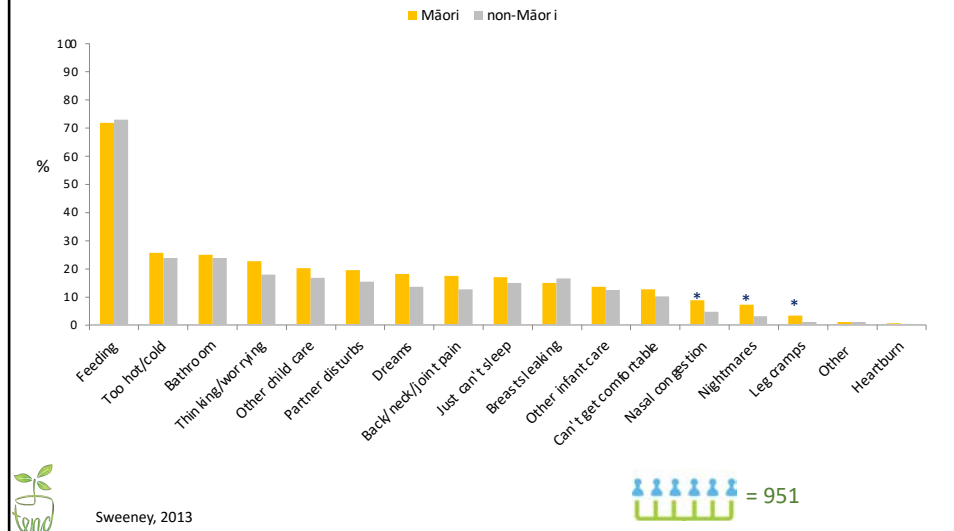
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Sleep disturbances in late pregnancy



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Sleep disturbances at 3m postpartum



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It's to be expected, but...

- Sleep loss and disruption are to be expected at this time.
- Don't want to pathologise 'normal' processes but...
- At least the same consequences may apply and...
- Birthing people may be more vulnerable, physically and psychologically at this time.



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Our role

- Sleep awareness and education
- Take sleep seriously – it is a basic need as essential as food, water and exercise and easier to facilitate usually: prize & prioritise – not a luxury
- Diagnostics: iron, folate, thyroid, other?
- Pain, other physical problems
- Anchor wake time
- Environment, cool room, comfy, screens out, low light, noise, hot-ish shower 60-90mins before bed, dim light at night for getting up



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Our role

- Create the opportunity, naps help too, timing is important (consider work patterns, lifestyle eg other caregiving, online/screen/gaming, etc)
- Take relaxation seriously – encourage exercise including cardio, yoga, tai chi
- Think about wind-down time
- Consider CBTi including online options
- Consider night pre-prep especially if other kids or for work tomorrow
- Cut some slack e.g. sleep in / early bedtime if possible, consider the 'essentials' vs the perfects



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Infant sleep development

- Complex neurologic function: brain networks + genetics + environment
- Understood through electroencephalogram (EEG) + behavioural observation
- Is a useful indicator of brain maturation and infant development
- “Biologically pre-programmed process of sleep development during the neonatal period” – rapid change in neonate and infant, subtle changes throughout childhood through a mix of genetics and environmental inputs



Dereymaeker, Pillary, Vervisch, de Vos, van Huffel, Jansen, & Naulaers, 2017

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Early sleep development

- During the first 1–2 years of life, total sleep duration remains rather stable (~14 h).
- Main sleep periods gradually shift to the night with a reduction of daytime sleep at the same time
- During this childhood period the build-up of sleep pressure during wakefulness appears to slow down, allowing for longer, uninterrupted wake periods and a shift toward later bedtimes.

Huber & Born, 2014



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Early classification of sleep stages

During the first 3-6 months

- Sleep stages are immature, disorganized, and look quite different from those in adults.
- REM sleep during this early period is called 'active sleep' due to frequent muscle twitches and body jerks that break through tonic muscle inhibition
- NonREM sleep is referred to as 'quiet sleep'.
- Sleep is evenly divided between quiet, or NonREM sleep, and active, or REM sleep. Arousals often elicit waking.

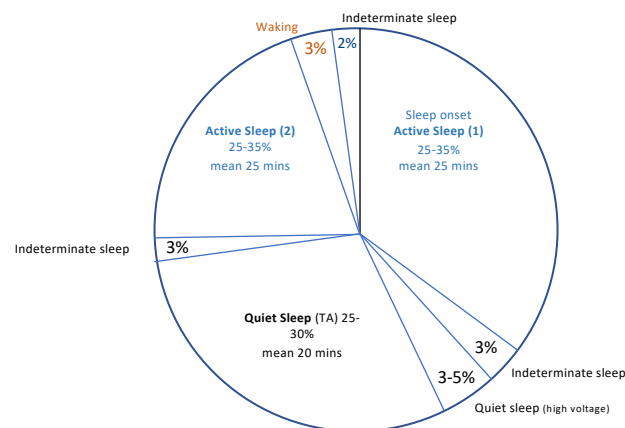
Cirelli & Tononi 2015



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Full-term neonate sleep cycle

AVERAGE $\pm$ 50–60 min (**RANGE** 30-70 mins)



Dereymaeker, A., Pillay, K., Vervisch, J., De Vos, M., Van Huffel, S., Jansen, K., & Naulaers, G. (2017). Review of sleep-EEG in preterm and term neonates. *Early human development*, 113, 87-103.

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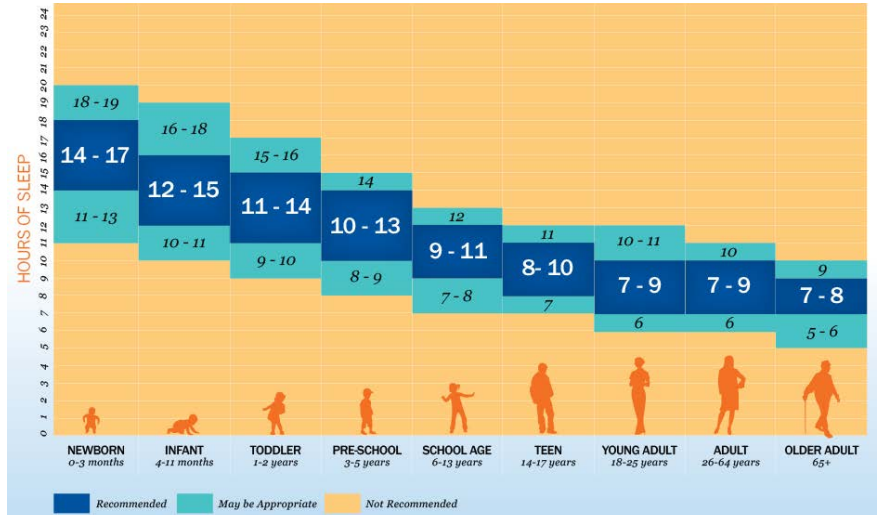
How Much Do We Need?

- Get as much sleep as is required to wake feeling fully rested.
- Most people report 7-9hrs.
- Large individual variability in sleep need.



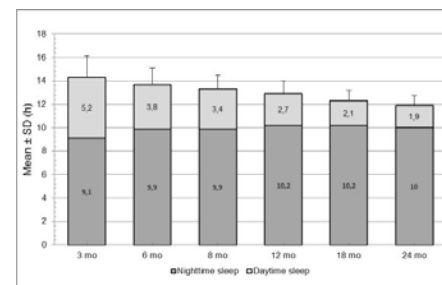
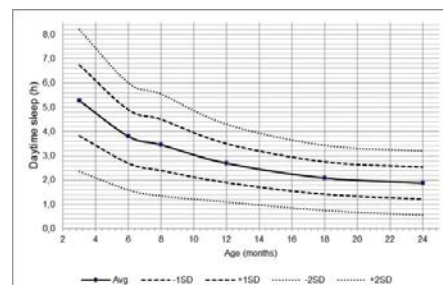
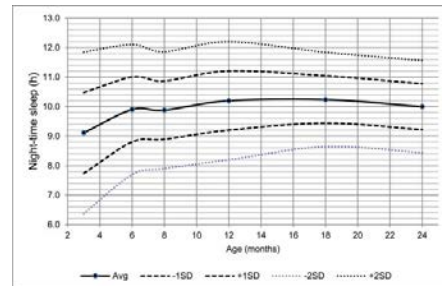
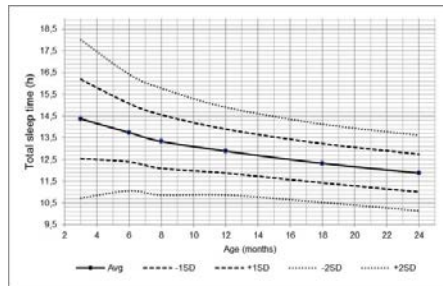
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Recommended sleep duration



www.sleepfoundation.org

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Paavonen, E. J., et al. (2020). Normal sleep development in infants: findings from two large birth cohorts. *Sleep Medicine*

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Other sleep variables

	3 m	6 m	8 m	12 m	18 m	24 m
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Sleep onset latency (min)	38 (34)	25 (20)	22 (16)	22 (20)	20 (14)	25 (20)
Number of night wakings	2.2 (1.3)	2.4 (1.8)	2.4 (1.8)	1.8 (1.5)	1.1 (1.1)	0.9 (0.9)
Bedtime hh:mm	21:46 (1:13)	20:54 (1:00)	20:53 (0:56)	20:39 (0:50)	20:41 (0:43)	20:54 (0:41)

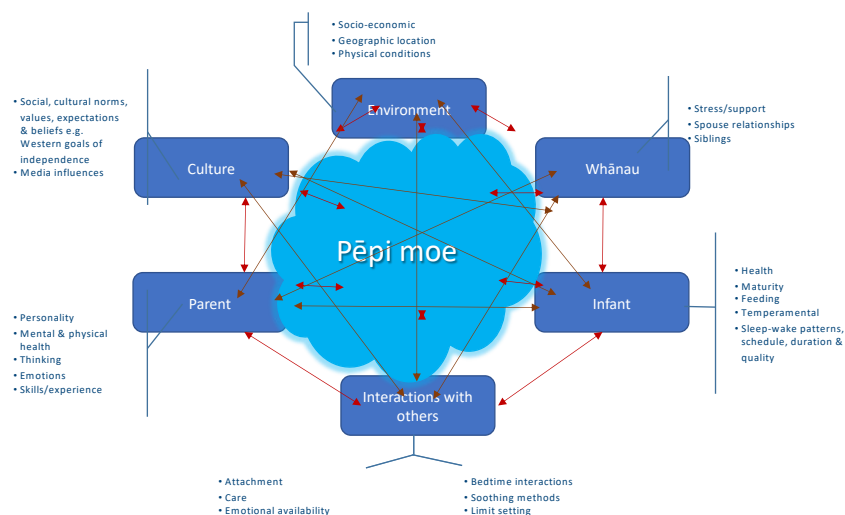
SOL ranges = vast: 3m 0-420mins, less across time
 Night wakings vast: 3m 0-15, 0-20 at 8m, 0-6 by 24m
 Same vast variability in time awake at night and bedtimes



Paavonen, E. J., et al. (2020). Normal sleep development in infants: findings from two large birth cohorts. *Sleep Medicine*

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Every baby is different – context matters



Sadeh & Anders, 1993; Sadeh, Tikotzky & Scher, 2010, Sweeney 2013

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Feeding & Sleeping

- Newborn sleep patterns are closely bound to feeding
- Focusing on getting relaxed feeding established is worth the time and patience
- Breast/chest feeding and formula feeding
- Caution in implementing sleep 'programmes' – individual babies need to be 'settling-ready'



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Day-night entrainment



- Exposure to daylight (>1000 lux)
- Changes/kick time by window
- Social interaction (play & learning)
- Rich sensory experience



- Night-time rituals / routines
- Low interaction – still warm and attuned
- Dim lighting
- Curtains
- Feeding/changing organised and low key



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Developing rhythm

- Become aware of own rhythms and routines, and those in the home
- Observe baby for existing and emerging rhythms
- Work towards synchronising and building on these rhythms
- “Watch baby – not the clock”
- Shape – not ‘should’



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Wake time

- Varies from baby to baby
- Varies from sleep to sleep
- Varies from day to day
- Lengthens with age
- Newborns (approx 0-4 weeks) – about 1 – 1 ½ hours before becoming TIRED
- Look for cues of engagement / disengagement
- Sleep not guaranteed



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Supporting sleep in parents (esp primary parent)

- Prioritise sleep opportunity (sleep is an involuntary experience)
- Aim to protect at least one nighttime sleep “block” if possible (4 hours)
- Watch out for “revenge bedtime procrastination”
- Can support be offered around night sleep? – a late carer, an early carer, during the night
- Prenatal education - good evidence
- Planning / worry time
- Support physiology – RU-SATED, movement, unwind time, nourishment, light exposure



- **Sleep is an involuntary behaviour – at all ages and stages**

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Ngā mihi nui



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www.tendpsychology.com

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