The Science of Sleepy Teenagers

by Russell Foster, April 27, 2013

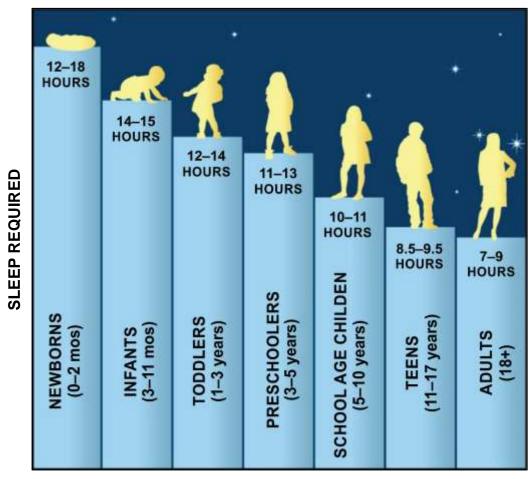
School schedules make them grouchy, impulsive and humourless

- "Making teens start school in the morning is 'cruel', brain doctor claims". So declared a British newspaper headline in 2007 after a talk I gave at an academic conference. One disbelieving reader responded: "This man sounds brain-dead."
- 2 Six years on, there is growing acceptance that the structure of the academic day needs to take account of adolescent sleep patterns. A successful model to adopt a later start time is the UCL Academy in London; others are considering following suit.
- So, what are the facts about teenage slumber, and how should society adjust to these needs?
- The biology of human sleep timing, like that of other mammals, changes as we age. This has been shown in many studies. As puberty begins, bedtimes and waking times get later. This trend continues until 19,5 years in women and 21 in men. Then it reverses. At 55 we wake at about the time we woke before puberty. On average this is two hours earlier than adolescents. This means that for a teenager, a 7 a.m. alarm call is the equivalent of a 5 a.m. start for people in their 50s.
- 5 Precisely why this is so, is unclear, but the shifts correlate with hormonal changes at puberty and the decline in those hormones as we age.
- However, biology is only part of the problem. Additional factors include a more relaxed attitude to bedtimes by parents, a general disregard for the importance of sleep, and access to TVs, DVDs, PCs, gaming devices, cell phones and so on, all of which promote alertness and eat into time available for sleep.
- 7 The amount of sleep teenagers get varies between countries, geographic region, and social class, but all studies show they are going to bed later and not getting as much sleep as they need because of early school starts.
- Mary Carskadon at Brown University, who is a pioneer in the area of adolescent sleep, has shown that teenagers need about nine hours a night to maintain full alertness and academic performance. My own recent observations are that many are only getting just five hours on a school night. Unsurprisingly, teachers reported students dozing in class.
- Evidence that sleep is important is overwhelming. Research has demonstrated its critical role in memory consolidation and our ability to generate innovative solutions to complex problems. Sleep disruption increases the level of the stress hormone cortisol. Impulsive behaviour, lack of empathy, sense of humour, and mood are similarly affected. All in all, a tired adolescent is a grumpy, moody, insensitive, and stressed one.

- Adolescents are increasingly using stimulants to compensate for sleep loss and caffeinated and/or sugary drinks are the usual choice. The half-life of caffeine is five to nine hours. So, a caffeinated drink late in the day delays sleep at night. Tiredness also increases the likelihood of taking up smoking.
- A later start of the school day by itself is not enough. Society in general, and teenagers in particular, must start to take sleep seriously.
- If you are dependant upon an alarm clock or parent to get you out of bed; if you take a long time to wake up; if you feel sleepy and irritable during the day; if your behavior is overly impulsive, it means you are probably not getting enough sleep. Take control.
- 13 It is my strongly held view, based upon the evidence, that the efforts of dedicated teachers and the money spent on school facilities will have a greater impact, and education will be more rewarding when, collectively, teenagers, parents, teachers, and school governors start to take sleep seriously. In the universal language of school reports: We must do better.

[This adapted article originally appeared in *New Scientist*. https://slate.com/technology/2014/04/teenage-sleep-patterns-why-school-should-start-later.html

TEXT 2



AGE GROUP

[Adapted from: https://assets.sutori.com/user-uploads/image/43259344-ad7b-41f7-9014-f7f782ea1383/6bde5edb6839144d17e12d02ca7159d8.jpeg]

Sleep Tips for Teenagers Here's how to make sure your teen is getting enough sleep to stay healthy and do well at school.



[Source: https://pictogram-illustration.com/material/135-poster-free.jpg]

If possible, don't have a mobile, tablet, TV or computer in the bedroom at night, as the light from the screen interferes with sleep. Having screens in the bedroom also means your teen is more likely to stay up late interacting with friends on social media.

It's official: regular exercise helps you sleep more soundly, as well as improving your general health. Teenagers should be aiming for at least 60 minutes' exercise every day, including aerobic activities such as fast walking and running.

Suggest that your teenager drinks less caffeine – found in drinks such as cola, tea and coffee – particularly in the 4 hours before bed. Too much caffeine can stop them falling asleep and reduce the amount of deep sleep they have.

Encourage your teenager to get into a regular bedtime routine. Doing the same things in the same order an hour or so before bed can help them drift off to sleep.

Ensure your teenager has a comfortable sleeping environment – ideally a room that is dark, cool, quiet and comfortable.

Talk to your teenager about anything they're worried about. This will help them to put their problems into perspective and sleep better. This should mean they're less likely to lie awake worrying during the night.

Encourage your teen to not sleep in for hours at weekends. Late nights and long lie-ins can disrupt your body clock and leave you with weekend "jet lag" on Monday morning.

[Article adapted from: https://www.nhs.uk/live-well/sleep-and-tiredness/sleep-tips-for-teenagers/]

Futility by Wilfred Owen

- 1 Move him into the sun—
- 2 Gently its touch awoke him once,
- 3 At home, whispering of fields half-sown.
- 4 Always it woke him, even in France,
- 5 Until this morning and this snow.
- 6 If anything might rouse him now
- 7 The kind old sun will know.
- 8 Think how it wakes the seeds—
- 9 Woke once the clays of a cold star.
- 10 Are limbs, so dear-achieved, are sides
- 11 Full-nerved, still warm, too hard to stir?
- 12 Was it for this the clay grew tall?
- 13 —O what made fatuous sunbeams toil
- 14 To break earth's sleep at all?

[Taken from Worldscapes A collection of verses by Malan, p. 104]

TEXT 5

Lament for a dead cow by Francis Carey Slater (Chant by Xhosa family on the death of Wetu, their only cow)

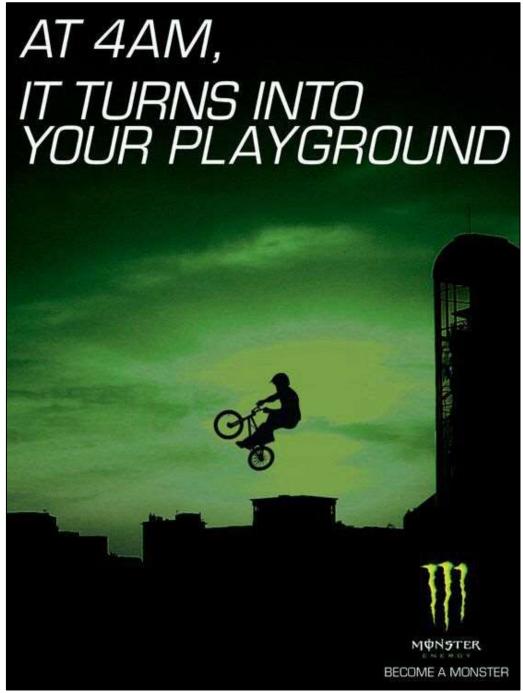
- 1 Siyalila, siyalila, inkomo yetu ifile!
- 2 Beautiful was Wetu as a blue shadow
- 3 That nests on the grey rocks
- 4 About a sunbaked hilltop:
- 5 Her coat was black and shiny
- 6 Like an Isipingo-berry;
- 7 Her horns were as sharp as the horns of the new moon
- 8 That tosses aloft the evening star;
- 9 Her round eyes were as clear and soft
- 10 As a mountain pool,
- 11 Where shadows dive from the high rocks.
- 12 No more will Wetu banish teasing flies
- 13 With her whistling tail;
- 14 No more will she face yapping curs
- 15 With lowered horns and bewildered eyes;
- 16 No more will her slow shadow
- 17 Comfort the sunburnt veld, and her sweet lowing
- 18 Delight the hills in the evening.
- 19 The fountain that filled our calabashes
- 20 Has been drained by a thirsty sun;
- 21 The black cloud that brought us white rain
- 22 Has vanished the sky is empty;
- 23 Our kraal is desolate:
- 24 Our calabashes are dry:
- 25 And we weep.

[Taken from Worldscapes A collection of verses by Malan, p. 72]

TEXT 6: Unseen Poem

Have You Earned Your Tomorrow By Edgar Guest 1 Is anybody happier because you passed his way? 2 Does anyone remember that you spoke to him today? 3 This day is almost over, and its toiling time is through; 4 Is there anyone to utter now a kindly word of you? 5 Did you give a cheerful greeting to the friend who came along? Or a churlish sort of "Howdy" and then vanish in the throng? 6 7 Were you selfish pure and simple as you rushed along the way, 8 Or is someone mighty grateful for a deed you did today? 9 Can you say tonight, in parting with the day that's slipping fast, 10 That you helped a single brother of the many that you passed? Is a single heart rejoicing over what you did or said; 11 12 Does a man whose hopes were fading now with courage look ahead? 13 Did you waste the day, or lose it, was it well or sorely spent? 14 Did you leave a trail of kindness or a scar of discontent? 15 As you close your eyes in slumber do you think that God would say, You have earned one more tomorrow by the work you did today? 16

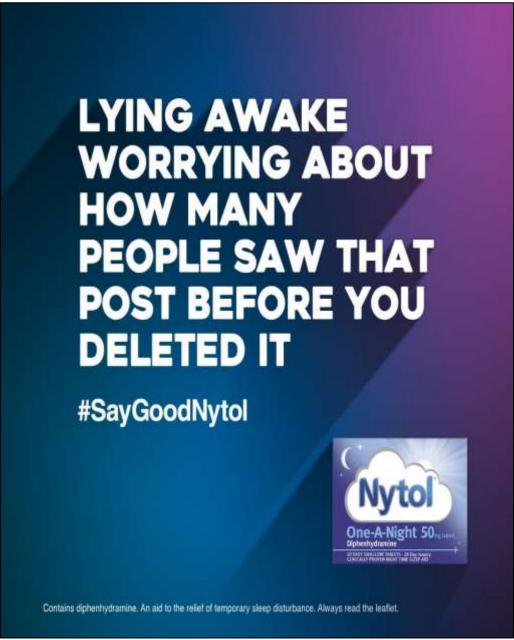
[Source: https://www.familyfriendpoems.com/poem/have-you-earned-your-tomorrow-by-edgar-albert-guest]



[https://i.pinimg.com/originals/85/de/50/85de50848c1292d931149826cd63e8a9.jpg]

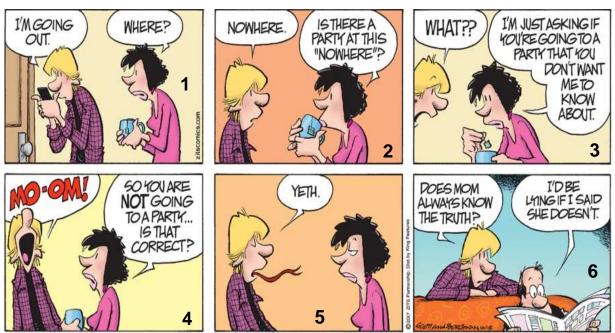
Text: Become a Monster





[https://d1sdeqoxcfgxl0.cloudfront.net/images/original/3c23d3b6281f318645f13 ab56ea84008763d8246bd01ab1dd994d94b.jpg>]

Text: Contains diphenhydramine. An aid to the relief of temporary sleep disturbance. Always read the leaflet.



[<http://safr.kingfeatures.com/idn/cnfeed/zone/js/content.php?file=aHR0cDovL3NhZnlua2luZ2ZIYXR1 cmVzLmNvbS9aaXRzLzlwMTcvMTAvWml0c19udGluMjAxNzEwMTVfOTAwLmdpZg→]

TEXT 10

I spent some time this week talking (7.1) renowned sleep expert Dr Richard Shane, who is a psychotherapist and has been working with sleep issues for decades. He has developed a simple way to help identify easy tips to "lean into sleep" once your head hits the pillow; and a great system for insomniacs to learn how to get to sleep (7.2 reliable) without medications. (7.3 Turns out, he also has a great sense of humor.)

Here is his favourite joke about insomnia:

In the middle of the night, George was pacing back and forth in his room, unable to sleep. This woke his wife, who asked him why he couldn't sleep. He replied, "You know that thousand dollars I borrowed from Bob next door? Well **(7.4 it's)** due tomorrow, and I don't have it, and I'm anxious and can't sleep."

His wife said, "Honey, I have the solution." She opened up the window and yelled to the house next door. "Bob, wake up!" (7.5 A light went on in the house next door) and Bob stuck his head out of his window. (7.6 She continued, "You know that thousand dollars my husband owes you? Well, he doesn't have it!") Then she closed her window and turned to her husband. "There, now let him pace the floor and you go to sleep".

As many of us know, laughter is the best medicine in (7.7 live/life). When we can laugh at (7.8 self), it helps us to lighten up. Science has proven that laughter helps to heal us when we are sick. However, no studies have yet been conducted as to the potential benefits of comedy to help improve sleep. Here's a challenge: for the next seven days, before going to bed at night, put on a show that really makes you laugh, or read a funny book instead of watching the horrors on CNN, or some really bad reality show.