

Lesson Ten

Text

Getting Enough Sleep ? Dream On

I once had a patient who was so sleep-deprived that she loaded her dirty dishes into the clothes dryer instead of the dishwasher. She turned on the machine , smashing china and glasses.

Another patient went to great lengths to obtain a 50-yard-line ticket to a crucial San Francisco 49ers play-off game , but was so sleepy that he dozed off in his seat in the first quarter and stayed asleep until the game was over.

On an everyday level , sleepy people make math errors , break things and become cross with their families , friends and co-workers. Less commonly , they make mistakes with tragic consequences. It is hard to prove how many fatal car accidents are caused by the driver's falling asleep , but my conviction is that the number is high. Laboratory experiments have confirmed that the sleep-deprived mind is prone to " microsleeps " — lapses of consciousness so brief that the subject may not even be aware of them.

In one experiment in our laboratory at Stanford University , a volunteer who had only been allowed four hours' sleep the night before had his eyelids taped open (uncomfortable , but it doesn't hurt). He was asked to press a button every time an irregular strobe light flashed. For a few minutes he tapped the switch after each flash , on

average every six seconds. Then a bright flash surged into his pupils — but he did nothing.

“ Why didn’t you press the switch just now ?” we asked.

“ Because there was no flash ,” the young man replied.

The machines we used to monitor brain activity showed that at the very moment the light had flashed , the young man had unwittingly fallen asleep , with his eyes wide open , for two seconds. If he had been behind the wheel of a car , those two seconds could have meant disaster.

Societal pressures to work more and at odd hours have reduced our sleep time over the past century by about 20 percent. Add to the mix our own era’s drive to have and do it all — work , family , sports , hobbies — and there is very little time left for rest. I consider sleep deprivation a national emergency.

Sleep Debt and the Mortgaged Mind

Generally , adults need to sleep one hour for every two hours awake , which means that most need about eight hours of sleep a night. Of course , some people need more and some less. Children and teenagers need an average of about ten hours.

The brain keeps an exact accounting of how much sleep it is allowed. My colleagues and I coined the term *sleep debt* because accumulated lost sleep is like a monetary debt : it must be paid back. If you get an hour less than a full night’s sleep , you carry an hour of sleep debt into the next day — and your tendency to fall asleep during the daytime becomes stronger.

During a five-day workweek , if you got six hours of sleep each night instead of the eight you needed , you would build up a sleep debt of ten hours (five days times two hours). Because sleep debt accumu-

lates in additive fashion , by day five your brain would tend toward sleep as strongly as if you'd stayed up all night. From this perspective , sleeping until noon on Saturday is not enough to pay back the ten lost hours as well as meet your nightly requirement of eight ; you would have to sleep until 5 p. m. to balance the sleep ledger.

But for most people it is difficult to sleep that long because of the alerting mechanism of our biological clock.

Wide Awake but Not Rested

An amazingly precise biological clock within us regulates sleeping and waking , and also synchronizes a vast array of biochemical events in our bodies. It is a timepiece of such astonishing precision that people often wake up a few minutes before their alarm clocks go off.

Most people have two peak times of alertness daily , at about 9 a. m. and 9 p. m. Alertness wanes to its lowest point at around 3 p. m. ; after that it begins to build again. This explains why people who have worked hard all day will often start to feel more alert at the same time every evening despite a large accumulation of sleep debt during the day. I believe this “ clock-dependent alerting ” can often deceive people into thinking they are sufficiently meeting their sleep needs.

Some years ago I had the chance to observe a striking example of clock-dependent alerting in action. It was during a visit with my daughter , Cathy , who was then a college student. At first , she was almost alarmingly apathetic and seemed to be totally uninterested in my visit. I suggested we take a walk. It was about four o'clock on a sunny late-spring afternoon. In the course of perhaps 20 to 30 minutes , Cathy changed into a talkative , informative , smiling , even vivacious person.

The explanation for this marvelous transformation : clock-depend-

ent alerting. Even a typically heavily sleep-deprived college student like Cathy will have a late afternoon/evening period of mental arousal. In her case it was able to abolish her fatigue. Nevertheless , my daughter was still carrying around a heavy load of sleep debt.

Sleep and Well-Being

People sometimes ask me if the exact accounting of sleep debt could mean that they are still deprived from those all-nighters years earlier in college. We don't know what happens to sleep debt in the long term , because research has only been able to measure two-week-long periods. You may have paid off those sleep-deprived stretches when you got sick shortly afterward and slept 18 hours at a stretch. Or the brain may lose track of sleep debt accumulated months or years earlier.

Or , accumulated sleep debt may do long-term damage to your health. In 1959 the American Cancer Society started a massive study , surveying over one million Americans about their exercise , nutrition , smoking , sleep and other habits. After tracking the group for six years , researchers found that short sleep time had a high correlation with mortality : if people had originally reported sleeping less than seven hours a night , they were far more likely to be dead within six years than those who slept an average of seven hours per night.

After years of further research , the original results still stand : although sleep needs vary , people who sleep about eight hours , on average , tend to live longer.

Another interesting finding from this survey was the fact that adults who said they slept ten hours or more per night also tended to have shorter lives. We speculate that these self-described long sleepers are more prone to die because they have undiagnosed sleep disor-

ders , like sleep apnea , in which breathing stops for more than ten seconds , possibly hundreds of times a night. This causes sleep to be disrupted repeatedly by short , unremembered awakenings that may create life-threatening health problems.

Other , more immediate effects of sleep deprivation on health and well-being have been documented by research. Studies have shown that cognitive skills and physical performance are impaired by sleep debt , but mood is affected even more. People who get less than a full night's sleep are prone to feel less happy , more stressed , more physically frail and more mentally and physically exhausted as a result. Lowering sleep debt can make us feel better , happier , more vigorous and vital.

Toward a Sleep-Smart Lifestyle

We are generally very bad judges of our sleepiness. In 1988 my friend and colleague Tom Roth and his team at the Henry Ford Hospital's Sleep Disorders Center and research lab in Detroit studied a group of people who specially claimed that day-time sleepiness — a sure symptom of sleep debt — was not a problem. He first sent them to bed for eight hours — a good night's sleep , most people would agree. Upon awakening , the subjects said they felt fine.

Yet when their daytime alertness was tested later on , more than 80 percent were not optimally alert. Of those , about 25 percent who said they felt fine were actually so in need of sleep that they posed a danger to themselves or others. Only about two in ten were optimally alert.

You can't work off a large sleep debt by getting a good night's sleep. You have to make up as much sleep as possible and avoid amassing another large sleep debt by adopting a sleep-smart lifestyle.

Here's how :

First , establish your average personal sleep requirement in each 24-hour period to maintain a consistent level of alertness. Start with the number of hours of sleep you think you require — eight for most people. Make a point of getting that amount of sleep for several nights and pay close attention to how you feel during the day , especially during lulls on the job , after lunch or while driving.

If you are getting drowsier on successive days , then you are getting less than your daily requirement and should add 15 to 30 minutes to your sleep time. If drowsiness continues , you can increase sleep time even more , but if you are feeling sleepy only around bedtime , you are probably close to your optimal sleep time.

Bear in mind that you'll have to take your biological clock into account. If , like me , you are a “ lark ,” or morning person , your strongest period of clock-dependent alerting occurs at this time. I always deal with a need for extra sleep by going to bed early rather than trying to sleep late. An “ owl ,” or night person , however , might not be able to fall asleep early , and would be better off making up sleep debt by rising as late as possible.

Finally , if you think you have a sleep disorder , do not hesitate to seek professional help. You can find a list of specialists on the Internet. I recommend SleepNet ([www. sleepnet. com](http://www.sleepnet.com)) and the American Sleep Disorders Association ([www. asda. org](http://www.asda.org)). The National Sleep Foundation site ([www. sleepfoundation. org](http://www.sleepfoundation.org)) also contains useful information on helping you to knit up “ the ravell'd sleeve of care ,” as Shakespeare once aptly described a good night's sleep.

Vocabulary

lapse /læps/ *n.* (由健忘、疏忽引起的)一些轻微的差错

surge /sɜ:dʒ/ *v.* (波浪)汹涌;澎湃;波动;起伏

unwittingly /ʌn'witiŋli/ *adv.* 不知道地;没觉察到地

mortgage /'mɔ:ɡɪdʒ/ *v.* 抵押

accumulate /ə'kju:mjuleɪt/ *v.* 积累;积聚;堆积

monetary /'mʌnɪtəri/ *adj.* 钱的;货币的

additive /'ædɪtɪv/ *adj.* 添加的;附加的

ledger /'ledʒə/ *n.* 分类账

synchronize /'sɪŋkrənaɪz/ *v.* (使)同时发生;同步;使在时间上一致

array /ə'reɪ/ *n.* 大量;一批;一系列

timepiece /'taɪmpɪ:s/ *n.* 钟表;時計

wane /weɪn/ *n.* 在逐渐减少;在逐渐变弱;在逐渐衰落中

apathetic /ə'pəθetɪk/ *adj.* 冷淡的;漠不关心的

vivacious /vɪ'veɪfəs/ *adj.* 活泼的;快活的;生气勃勃的

marvelous /'mɑ:vələs/ *adj.* 很好的;极好的

nutrition /nju:'trɪʃn/ *n.* 营养物;食物

lull /lʌl/ *n.* 间歇;稍停;稍止

drowsy /'draʊzi/ *adj.* 半睡的;欲睡的

successive /sək'sesɪv/ *adj.* 断续的;连续的

lark /lɑ:k/ *n.* 小鸣禽(尤指)云雀,百灵鸟

Notes on the Text

1. work... off... (通过工作或活动)除去;摆脱
2. instead of... 代替;而不是
3. play-off game 延长赛;季后赛
4. doze off 打瞌睡;打盹儿
5. become cross with... 与...生气;对...生气
6. be prone to... 易...的;有...倾向

7. be aware of... 知道的, 明白的, 觉察的, 意识到的
8. strobe light 频闪灯光, 急速闪动的灯光
9. pay... back 归还, 偿还
10. biological clock 生物钟
11. pay sth. off 还清
12. at a stretch 连续不断地, 不停地
13. sleep apnea 睡眠中呼吸暂停
14. Detroit 底特律
15. Shakespeare 莎士比亚

Work on the Text

I True or false ?

1. On an everyday level , sleepy people make mistakes with tragic consequences.
2. The volunteer in the experiment at Stanford University didn't press the button in the last two seconds because he was too sleepy.
3. Everyone must sleep eight hours at night.
4. Generally , if you sleep six hours in the evening , you carry two hours of sleep debt into the next day.
5. From Monday to Friday , if you sleep at 12 o'clock at night and get up at 6 the next day , you can make up for the sleep debt by sleeping to the noon on Saturday.
6. Most people cannot sleep the whole day because of the nerve system in their brains.
7. According to the text , a man in his peak time of alertness will be positive.
8. That people have peak time and lowest point of alertness in a day

is called “ clock-dependent alerting ”.

9. According to the text , everyone has clock-dependent alerting , no matter whether he is sleep-deprived or not.
10. Sleep debt cannot heavily damage people’s health.
11. Adults who sleep ten hours or more at night tend to have shorter lives because they sleep too much.
12. Sleep debt affects people’s physical performance more than affecting their mood.
13. Many people are unconscious of their sleep debt.
14. If you have a good night’s sleep , you can make up for your sleep debt.
15. If you have a sleep problem , you can seek professional help from the Internet.

II Fill in the blanks with the words or expressions given below. Change the form where necessary.

suggest	pressure	consequence	account
crucial	accumulate	instead	unwittingly
conviction	amaze	tragic	tendency
prone	abolish	confirm	sufficient
aware	impair	conscious	fatigue

1. Her investment had disastrous _____ : She lost everything she owned.
2. Whom would you _____ for the job ?
3. Let’s play cards _____ of watching television.
4. Getting this contract is _____ to the future of our company.
5. The effect of the pollution on the beaches is absolutely _____.
6. Do you always act in accordance with your _____ ?
7. The announcement _____ my suspicions.

8. He is _____ to lose his temper when people disagree with him.
9. The blow caused him to lose _____.
10. I don't think you're _____ of how much this means to me.
11. If I offended you , it was _____.
12. Your blood _____ is too high.
13. Keep an _____ of your daily activities.
14. By investing wisely she _____ a fortune.
15. Prices continue to show an upward _____.
16. The little girl is _____ clever.
17. Is £ 10 _____ for your expenses ?
18. Should the death penalty be _____ ?
19. We were all suffering from _____ at the end of our journey.
20. Loud noise can _____ your hearing.

III Translate the following into English :

1. 我希望明天前把大部分紧急信件写好。
2. 他总是上课打盹。
3. 他经常在海边一连坐上几个小时。
4. 没有人愿意给一个动辄就发火的上司干活。
5. 我真不明白他干嘛对我发起火来。
6. 文学有普遍性 ,但有界限 ;也有些相对的传世之作随读者的社会体验而发生变化。
7. 孩子们不应吃含有添加剂的食品。
8. 我为那次失礼行为颇感尴尬 ,好在别人并不介意。
9. 他的侮辱 ,尽管不是出于故意 ,却使她很痛苦。
10. 她在两个星期内接连接受了三次腹部手术。

Additional Exercises

I Vocabulary and Structure

1. I shall have a companion in the house after all these _____ years.
A. single B. sole C. alone D. lonely
2. The newest satellites can _____ a thousand telephone conversations and a colour TV program at the same time.
A. carry B. extend C. bring D. take
3. I can _____ some noise while I'm studying , but I can't stand loud noises.
A. come up with B. catch up with
C. put up with D. keep up with
4. When the whole area was _____ by the flood , the government sent food there by helicopter.
A. cut away B. cut down
C. cut up D. cut off
5. The man to whom we handed the forms pointed out that they had not been _____ filled in.
A. consequently B. regularly
C. comprehensively D. properly
6. The eastern part of Australia is _____ in climate to the Western part.
A. productive B. superior
C. prosperous D. splendid
7. He was wet to the skin ;his whole body was _____ and trem-

bling.

- A. stiff B. straight C. steady D. hard

8. It seems very difficult _____.

- A. to stop the child to cry
B. restraining the child to cry
C. to keep the child from crying
D. holding the child's crying

9. I think your sister is old enough to _____ to spend all her money on cosmetics.

- A. know best than B. know other than
C. know better than D. know more than

10. _____ the opportunity he might well have become an outstanding cartoonist.

- A. Giving B. Give C. Given D. Gives

11. The senior librarian at the circulation desk promised to get the book for me _____ she could remember who last borrowed it.

- A. ever since B. must as
C. even though D. if only

12. He spoke confidently , _____ impressed me most.

- A. so that B. that C. it D. which

13. There are several characteristics of the book _____ special attention.

- A. worthy B. worthy of C. worth of D. worthless

14. Our teacher recommends that we _____ as attentive as possible when we visit the museum.

- A. are B. shall be C. were D. be

15. The dying soldier had the message _____ straight to the commander.

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29. Scientific discoveries and inventions do not always influence the language _____ their importance.

- A. in the name of B. in proportion to
C. on top of D. with regard to

30. There are several means _____ latitude and longitude.

- A. can determine B. by that to determine
C. to determine D. we use them to determine

II Cloze

More and more students want to study in “ hot ” majors. 1 a result , many students want to 2 their interests and study in these 3 such as foreign languages , international business and law , etc.

Fewer and fewer students choose scientific majors , 4 maths , physics and biology , and art majors , 5 history , Chinese and philosophy.

6 students can study in these “ hot ” majors , because the number of these “ hot ” majors 7 limited.

If one 8 interest in his work or study , 9 can he do well ? I 10 this from one of my classmates. He is 11 the countryside. His parents are farmers. Though he 12 biology , he chose “ international business ”. He 13 to live a life which is different 14 of his parents.

In the end , he found he 15 in doing business. He found all the subjects to be 16 .

17 this wouldn't have happened if he had chosen his major according to his own interests.

Choosing a major in university 18 decide one's whole life. Majors 19 are not “ hot ” today may become the “ hot ” major of

tomorrow.

Choosing your major according to your own 20 is the best way to succeed.

- | | | | |
|-----------------------|-----------------------|----------------------|--------------|
| 1. A. Being | B. For | C. Having | D. As |
| 2. A. give up | B. appear | C. give | D. master |
| 3. A. place | B. room | C. areas | D. space |
| 4. A. for example | | B. much as | |
| | C. and so on | D. as a result | |
| 5. A. even | B. like | C. just | D. or |
| 6. A. Only a few | | B. Quite a few | |
| | C. Perhaps | D. Many | |
| 7. A. is | B. are | C. would be | D. have been |
| 8. A. had no | B. had | C. has no | D. has |
| 9. A. why | B. and what | C. how | D. and how |
| 10. A. suggested | | B. guessed | |
| | C. searched | D. learned | |
| 11. A. out of | B. off | C. in | D. from |
| 12. A. studied | | B. likes | |
| | C. learns | D. succeeds to study | |
| 13. A. wants | | B. doesn't want | |
| | C. enjoys | D. doesn't like | |
| 14. A. from which | | B. from that | |
| | C. for which | D. for that | |
| 15. A. was interested | | B. was clever | |
| | C. was not interested | D. was not clever | |
| 16. A. lovely | B. rare | C. obvious | D. tiresome |
| 17. A. So | B. Then | C. Just then | D. Maybe |
| 18. A. can | | B. does not | |