Illustration: Sarene Chan

DREAM SLEEP FIRES SUCCESS

A good night's rest should be part of your routine if you want to benefit from all the hard work of your studies, writes **Shirley Lau**

It's late at night, dark outside and you're tired. You should be fast asleep, hugging your teddy bear under the covers. But you are still wide awake! You just can't sleep.

We all need sleep, which takes up one third of our lifetime; it helps our bodies and minds feel rejuvenated and ready for the following day.

"In general an adult needs eight hours of sleep," says Dr Esther Lau Yuet-ying, who teaches psychology at the University of Hong Kong. "But teenagers need a bit more – about eight-and-a-half to nine-and-a-half hours."

Lau says good sleep helps our body to "synchronise" itself, including releasing hormones that control our growth, appetite and alertness. Our brain controls the body's natural daily rhythms, which govern our sleeping and waking, and things like body temperature, blood pressure, and our immune system.

Yet if our slumber is interrupted, or too short, our body will not have time to complete all the work it does as we sleep, such as repairing aching muscles and consolidating memory.

Lau, whose research includes sleep and its many disorders, says poor sleep can lead to us being depressed, bad tempered and lethargic. It can make us struggle to get out of bed, focus on classes and sports activities – even interact with friends – revision and homework.

A survey showed 58.4pc of students felt they did not have enough sleep

CHINESE UNIVERSITY'S SLEEP PROGRAMME

Yet after a stressful day, even though we will feel tired, we may still have trouble sleeping again.

There are many different sleeping disorders, including insomnia – affecting people of all ages – which causes problems of falling and staying asleep. It can be caused by depression, stress, or changes to sleep patterns, and can badly affect schoolwork and exam performance.

Chinese University's psychiatry, paediatrics, and medicine and therapeutics departments launched a six-month Healthy Sleep, Healthy School Life education and intervention programme, ending last May. A survey of students showed 58.4 per cent of participants believed they had insufficient sleep. They said sleep education at school would improve their sleeping habits and mental and behavioural capabilities.

SOUTH CHINA MORNING POST

Understanding what helps us to fall asleep can help improve, not only the quantity of sleep, but also – just as importantly – the quality, says Lau, who has carried out research into the relationship between sleep and young people's academic performance and memory.

A typical night's sleep follows a recurring pattern of rapid-eye movement (REM) and non-rapid-eye movement (NREM).

During NREM, first we fall into a light sleep, then a second stage where we start to sleep, before a third period of deep, restorative sleep. This is when muscles relax, breathing slows, tissue growth and repair occurs, energy is restored, and our hormones are released.

Normally about 20 per cent of our sleep takes place during REM. This period is when our eyes flicker, our brain becomes active and we have dreams. REM usually first occurs 90 minutes after we fall asleep, when our muscles are really relaxed; it provides energy to the brain and helps our performance the next day.

Lau says there are two driving forces that play a vital role in helping us fall asleep. "First, there is the homeostatic drive – a drive to sleep determined by how long we have been staying awake.

"When you haven't slept for a long time, you will have accumulated enough homeostatic drive to make you want to sleep."

Yet our behaviour can impact on this urge to sleep, she says. "Suppose you've been going to bed and getting up at regular hours every day over the week. Then, at the weekend, you stay up late and get up later than usual. This is when you break the pattern of your homeostatic drive.

"The next night, you can't go to bed early: you have not accumulated enough homeostatic drive to make yourself sleepy. In a way, you've created man-made jet-lag for yourself; it turns into a vicious cycle."

In Hong Kong's 24-hour city, when we stay up late, we must force ourselves to get up the next morning at the usual time, Lau says. This is really key to accumulating enough homeostatic drive to make us feel sleepy the next night, so we get our sleep-wake rhythm back on track.

Dr Esther Lau has studied sleep and its many disorders. Photo: SCMP Pictures

Lack of sleep will cause harm to your academic performance

DR ESTHER LAU, LECTURER

"What's most important is not what time we go to bed, but the time we get up: that determines how sleepy we are the next night."

The second physiological force managing our sleep-and-wake cycles is known as the circadian rhythm. It follows a roughly 24-hour timetable and tells our body when to sleep.

This body clock oscillates during the day and suggests two periods when we find it easiest to fall asleep.

"At about 2pm to 3pm, we tend to have the post-lunch dip, when we feel lethargic and want to take a nap," Lau says. "Then at 3am, our physical strength reaches a low, which is why students who revise overnight for exams find this the most difficult hour to stay awake."

Environmental cues, including sunlight, play a vital role in shaping our circadian rhythms. Normally they are in sync with our daily cycle of daylight and darkness, which is why long flights leave us jet-lagged.

Going outside in bright sunshine after a flight can "fool" our body and help change our circadian rhythm. But so can using electronic gadgets right before bedtime, Lau says.

"Many people spend a long time reading the news, or messaging on mobile phones in bed. It's not good, not only because of the time-consuming activity itself, but also because light emitted from the devices stimulates our brain artificially; our brain is fooled into thinking it is still daytime. So our circadian rhythms are disrupted."

Lau says it is better to read a real book using a moderate light. "There's a difference between a book reflecting a light source and a phone directly emitting light."

One of Lau's studies on the sleeping habits of 930 Hong Kong and Macau university students found those with a higher quality of sleep, and longer period of sleep, did better in tests. They also had better moods and levels of physical and psychological well-being.

In another study, two groups of Hong Kong secondary students had to memorise set information. One group was able to take a nap, while the other had a relaxing break awake. The group allowed to take a nap was able to recall more information.

"Teenagers may think they're young enough to cope with a few hours of sleep and can rely on coffee," Lau says. "But a lack of sleep just translates into sleepiness, which will cause a deterioration in academic performance. When we sleep, our brain gets to process what we've learned and form memories."

Good restorative sleep is continuous and uninterrupted and of adequate length, and should leave you feeling rested and alert all day long, she says. "Obviously if you feel restful after waking up, then you have quality sleep. And how long does it take to fall asleep? Anything more than 30 minutes is no good.

"Another thing to ask is whether there are a lot of times when you keep waking up, and also whether you have difficulty falling asleep again. A positive answer to both of these is a sign of bad sleep."

Research studies show breathing problems, caused by being overweight and smoking, can affect your sleep. Improved health and fitness will help with your sleeping.

Lau has a few simple tips to help you get a good night's sleep.

- "Most importantly, maintain a regular sleep schedule."
- "Exercise for 30 minutes every day, or three times a week; no later than early evening, is helpful."
- "Avoid coffee, Chinese tea and other caffeine drinks within six hours of going to sleep."
- "Stay away from using electronic gadgets just before bedtime, which is especially fitting for the younger generation."