
Diabetes – The Importance of Sleep

Contents

- The impact of sleep on health
- Benefits of improving the quality of sleep
- Catching up on sleep
- Napping – to nap or not to nap
- Restless leg syndrome



Introduction

We've all seen the adverts on TV – a couple of young, attractive (but not too attractive), thirty-somethings wake happily in a room lit with golden sunlight. They skip into the kitchen to enjoy a healthy, high-fibre breakfast, then go jogging before heading off to work, safe in the knowledge that life could not get much better. The reason for this? The super-doooper mattress with its myriad of somnia-inducing layers they are trying out for 100 nights.

I'm not sure about you but that's not me and no mattress, however super dooper, is going to change that. On a more serious note though, the quality of sleep we get can have a direct impact on our health. Similarly, there are some things we can do to improve our sleep quality without having to move houses to ensure that we wake bathed in golden light (no matter how much of a feng shui advocate you are).

The impact of sleep on health

Most of us have the odd restless night and although it may leave us feeling tired and irritable the next day, it does not have the negative impact that long-term disturbed or poor quality sleep has on our health. The majority of us need between 7 and 9 hours sleep per night and getting more or less than these amounts can be the cause of a range of health problems. Some of these are more serious than others but there are things we can do to mitigate these problems and improve our "sleep health". Such problems can include:

Sleep apnoea

Sleep apnoea, a sleep disorder, is common among people with Type 2 diabetes. According to the American Academy of Sleep Medicine, 7 in 10 people with Type 2 diabetes also have obstructive sleep apnoea. When you're overweight and have excess fat in your neck, it can cause sleep apnoea, a condition in which breathing starts and stops while you're asleep. This abnormal breathing during sleep affects the body's oxygen supply and leads to lower-quality sleep.

Symptoms of sleep apnoea include:

- loud snoring,
- excessive sleepiness during the day,
- irritability,
- morning headaches.

If you or your partner suspects you have sleep apnoea, ask your doctor about a sleep test. If left untreated it also increases the chances of cardiovascular disease, stroke, diabetic macular oedema, poor wound healing, depression and even early death.

Heart disease and Type 2 diabetes

Long-standing sleep deprivation seems to be associated with increased heart rate, an increase in blood pressure and higher levels of certain chemicals linked with inflammation, which may put extra strain on your heart. Over time, poor sleep can also lead to unhealthy habits that can hurt your heart, including higher stress levels, less motivation to be physically active and unhealthy food choices.

Obesity

Obesity is another condition related to sleep deprivation. The relationship between sleep deprivation is 2-way, sleep deprivation increases the likelihood of obesity and vice versa. Indeed, many of the health conditions associated with sleep deprivation are linked.

If you're overweight, work with your doctor to set goals for weight loss and management. Losing 10 percent of your body weight can lead to better blood sugar control, and decrease the risk of depression and sleep apnoea.

Stress, anxiety and depression

Increased sleep deprivation increases the likelihood of a person experiencing one or more of these conditions, whether it be through the reduced inability to cope with the day-to-day management of diabetes or some other aspect of a person's life.

Benefits of improving the quality of sleep

There are many different ways of dealing with sleep deprivation and reaping the benefits of doing so. The effectiveness and benefits of each can depend on the causes of the sleep deprivation. Here are a few:

- **Sleep apnoea can be treated with breathing devices**, such as a positive airway pressure (PAP) machine, and lifestyle changes, including losing weight. Treating sleep apnoea reduces the chances of cardiovascular disease, stroke, diabetic macular oedema, poor wound healing, depression and even early death.
- **Prioritise blood sugar management.** When your blood sugar is too high or too low, it can wake you up at night. Managing your blood sugar effectively may help improve your nightly rest. It has been recommended that focusing on lower glycaemic foods can avoid these fluctuations.
- **Sleep boosts immunity.** If you seem to catch every cold and flu that's going around, your bedtime could be to blame. Prolonged lack of sleep can disrupt your immune system, so you're less able to fend off bugs.
- **Sleep can slim you.** Sleeping less may mean you put on weight! Studies have shown that people who sleep less than 7 hours a day tend to gain more weight and have a higher risk of becoming obese than those who get 7 hours of slumber. This is because sleep-deprived people have reduced levels of leptin (the chemical that makes you feel full) and increased levels of ghrelin (the hunger-stimulating hormone).
- **Sleep boosts mental wellbeing.** Chronic sleep debt may lead to long-term mood disorders like depression and anxiety. Research has shown that people with mood disorders tend to sleep less than six hours a night.
- **Sleep increases sex drive.** Men and women who don't get enough quality sleep have lower libidos and less of an interest in sex, research suggests. Men who suffer from sleep apnoea also tend to have lower testosterone levels, which can lower libido.
- **Sleep wards off heart disease.** Sleep can help to prevent heart disease that is caused by unhealthy habits that can hurt your heart, including higher stress levels, less motivation to be physically active, and unhealthy food choices.

- **Keep a regular bedtime.** Some of the tips for quality sleep with Type 2 diabetes are the same as those for the general population. Having a regular routine for the time you go to bed and the time you wake up, on both weekdays and weekends, helps your body's internal clock (circadian rhythm) work best.
- **Turn off electronic devices.** Exposure to bright light, even from a smartphone, not only disrupts sleep but can also alter your metabolism and mess with your weight. Studies have shown that blue light from a phone, TV or computer results in an increased resistance to insulin and increases the risk of weight gain or obesity. Try turning off the light at least half an hour before bed, keep the bedroom dark and you should sleep better.
- **Don't drink alcohol before bed.** Alcohol affects blood sugar levels. Alcohol impairs the release of glucose into the bloodstream and it takes about two hours for your body to completely metabolise any alcohol you've consumed and can disturb sleep. It may also prevent you from having to get up to go to the bathroom in the night.
- **Exercise during the day.** You will sleep better at night if you get in some physical activity during the day, with as little as 10 minutes of aerobic exercise showing benefits. This is because exercise increases your internal body temperature and then, later in the day, when it drops back down to normal, it triggers a feeling of drowsiness and helps you drift off to sleep. Plus, regular exercise can improve mood, which helps to lower stress and leads to better sleep.
- **Sleep increases fertility.** Difficulty conceiving a baby has been claimed as one of the effects of sleep deprivation, in both men and women. Apparently, regular sleep disruptions can cause trouble conceiving by reducing the secretion of reproductive hormones.
- **Learn to de-stress.** Everyone deals with some stress, but people with Type 2 diabetes are often under even more pressure due to managing a chronic condition on top of everyday stresses. When that stress becomes too much, it can affect your sleep. Stress causes the body's nervous system to go into fight or flight mode as a response to a stressful or dangerous situation. With chronic stress, this aggravation to the nervous system doesn't go away and the increased adrenaline and cortisol produced can lead to tossing and turning, as well as a feeling of restlessness. Research has shown that

mindfulness techniques, such as deep breathing, visualisation, and meditation can encourage better sleep. You could try reading or taking a warm bath.

- **Avoid caffeinated beverages at night.** Black tea, coffee, caffeinated fizzy drinks and even chocolate can interfere with your ability to fall asleep. For a better night's sleep, limit the amount of caffeine you consume throughout the day with a goal of eliminating it several hours before bed.
- **Limit or avoid daytime napping.** Naps can do wonders to help you get through the day. But if that 20-minute catnap is interfering with nighttime sleep, you might want to give it up for a while.

If adopting these lifestyle changes doesn't improve your sleep, it's important to talk to your doctor. Conditions that affect sleep can be serious and may lead to long-term health issues over time. Your doctor can assess whether you may have a more significant sleep issue, such as diabetic neuropathy or sleep apnoea, and recommend further tests or treatment.

Catching up on sleep

If you don't get enough sleep, there's only one way to compensate – getting more sleep. However, there are ways and means of doing this. It won't happen with a single early night. If you've had months of restricted sleep, you'll have built up a significant sleep debt, so expect recovery to take several weeks.

- Starting on a weekend, try to add on an extra hour or two of sleep a night. The way to do this is to go to bed when you're tired, and allow your body to wake you in the morning (no alarm clocks allowed!).
- Expect to sleep for upwards of 10 hours a night at first. After a while, the amount of time you sleep will gradually decrease to a normal level.
- Don't rely on caffeine or energy drinks as a short-term pick-me-up. They may boost your energy and concentration temporarily, but can disrupt your sleep patterns even further in the long term.

Napping - to nap or not to nap

Most adults need at least seven to nine hours of sleep a night. Many people don't allow themselves adequate time for sleep but if you have Type 2 diabetes, it's critical that you do so, just as you do other activities. Expert opinion is that we should, never think sleep isn't as important as watching TV or talking on the phone. Another thing to keep in mind is that it's important not to overdo it with naps. Naps should be kept relatively short, around 20 minutes, and limited to the early afternoon. Napping any later is likely to throw off your ability to get to sleep at night.

Napping in the day may have mixed health benefits in people with Type 2 diabetes, researchers have said.

A complex relationship exists between sleep and diabetes, so Japanese researchers investigated how midday naps were associated with night-time sleep duration and blood sugar control.

The findings may suggest that people with Type 2 diabetes who slept for short periods of time at night benefitted from napping in the day. Midday naps appeared to compensate for lost sleep at night, and reversed associated negative health effects, such as poorer blood sugar control.

Those who slept for six hours or more were also found to have better sugar control, compared with those who got less than five hours' sleep at night. However, those who slept for long periods at night and also slept in the day were shown to also have poor blood sugar control.

Overall, the data collected, suggested that poor sleep patterns were linked to poor blood sugar control in people with Type 2 diabetes.

The researchers concluded: "Midday naps may be harmful to many health status parameters in long night-time sleepers, but in short night-time sleepers, midday naps may have protective effects in specific circumstances."

The choice is yours but don't go trotting off to get your super-duper mattress just yet!

Restless leg Syndrome

What is Restless Leg Syndrome?

Restless Leg Syndrome (RLS) is a common neurological disorder that can affect any one at any time of life. It is also called Willis-Ekbom Disease. Symptoms usually occur around middle age, affecting around 5% of the population but this rises to around 10% by the age of 60. Women tend to develop the condition twice as frequently as men. Because it can significantly disturb sleep, it is also classified as a sleep disorder.

Symptoms, Types & Causes of RLS

The symptoms of RLS are characterised by unpleasant, uncomfortable feelings in the legs which causes the person to wish to move the legs to minimise the sensation. Such sensations may include a burning feeling or an experience as though insects were crawling on or in the legs. Others describe it as a feeling of “an itch you can’t scratch” or like there’s fizzy water inside the legs.

People with RLS can experience varying degrees of pain. The condition can cause considerable discomfort during waking hours, particularly when the sufferer is in a relaxed state but can be made worse if in a confined space such as in a cinema seat, a car or on an airplane. However, RLS is usually most acutely experienced in the evening or at night when people are trying to sleep. As they relax, the symptoms appear and the person has no choice but to get out of bed to stretch - this can happen many times in one night, only offering some brief respite, as symptoms tend to return quickly.

RLS can lead to long sleepless nights and daytime fatigue and invariably impacts on the quality of life of the sufferer, including their employment, and those close to them.

Some people have the symptoms of restless legs syndrome occasionally, while others have them every day. The symptoms can vary from mild to severe. In severe cases, restless legs syndrome can be very distressing and disrupt a person’s daily activities. For this reason, RLS can be referred to as a spectrum disorder.

There are two recognised types of RLS:

1. Primary RLS.

This is also known as idiopathic restless legs syndrome, and it can run in families. Some neurologists believe the symptoms of RLS may have something to do with how the body handles a chemical called dopamine. Dopamine is involved in controlling muscle movement and may be responsible for the involuntary leg movements associated with restless legs syndrome. Others believe it to be related to poor circulation.

2. Secondary RLS.

This often has a sudden onset and is usually associated with another medical condition (eg iron deficiency, diabetes, nerve problems or kidney failure) or the use of certain drugs. Some medications, such as the antihistamines and allergy remedies, make the symptoms worse for some people (so while Benadryl tends to make most people sleepy, for example, it may actually intensify the symptoms in a person with RLS, making it harder for them to sleep.)

Causes of RLS

In the majority of cases, there's no obvious cause of restless legs syndrome but there are some factors that you and/or your doctor should look into. These could be:

- Daily habits, such as caffeine or alcohol consumption.
- Pre-existing health conditions such as anaemia, Parkinson's disease or diabetic retinopathy.
- Prescribed medication can trigger or worsen RLS.

Make sure your doctor knows about all the drugs you're taking, both prescription and over the counter, as well as your health history. Talk to your doctor about whether they could be making your RLS worse,

RLS and diabetes

RLS is far more common in people with Type 2 diabetes than the general population, where uncontrolled high blood sugars in people with diabetes can cause nerve damage, and may lead to diabetic peripheral neuropathy. Damage to the nerves of the feet and lower leg from peripheral neuropathy is a contributor to restless leg syndrome.

Previous studies have shown that restless leg syndrome is common in people with Type 2 diabetes, who can also suffer poor quality sleep believed to be associated with impaired glucose metabolism.

Treatment of RLS

RLS is often unrecognised or misdiagnosed but there is a growing awareness of the condition amongst medical practitioners. In many people, the condition is not diagnosed until 10-20 years after symptoms begin. However, once correctly diagnosed, RLS can often be treated successfully.

Your first step in addressing RLS should be to figure out if something is causing it. While RLS can be related to things that are largely out of your control, such as genetics or pregnancy, other possible factors can be addressed.

Treatments for RLS can roughly be divided into two groups:

Pharmacological interventions

- Medication is a key treatment for moderate to severe RLS. Dopaminergic drugs are typically the first medications prescribed. They're effective in relieving RLS symptoms, but they can cause side effects and other problems.
- Supplementation with iron or vitamins D, C, or E can help certain people with RLS. Your doctor can tell you if trying supplements would be a good idea for you.

Several classifications of drugs have been found to help with RLS. These include:

- Dopaminergic drugs including pramipexole, ropinirole, rotigotine,
- Gabapentin is an antiseizure medication. It's not entirely understood how gabapentin works to relieve RLS symptoms, but studies show it to be effective.
- Benzodiazepines are drugs used to treat anxiety and sleep problems. Clonazepam and other types of these drugs are often prescribed for people with RLS in combination with other drugs. While these drugs may not relieve RLS symptoms themselves, their benefit of improved sleep can be very helpful for people with RLS.
- Opioids are typically used to treat pain. In some cases, usually when other medications aren't helpful or cause augmentation, opioids can

be used carefully in low doses to help treat RLS. As with all opioids, use of these drugs should be carefully overseen by a doctor, due to their risk of misuse and dependence.

Note: for people with certain circulatory issues, surgery could be the most effective treatment for their RLS. However, more research is needed on this surgery as a treatment for RLS.

Non-pharmacological interventions and lifestyle changes

Mild cases of restless legs syndrome that are not linked to an underlying health condition may not require any treatment, other than making a few lifestyle changes. These include the following.

- Adopting good sleep habits (for example, following a regular bedtime ritual, sleeping regular hours, and avoiding alcohol and caffeine late at night).
- Quitting smoking if you smoke.
- Exercising regularly during the daytime. Given its benefits for reducing RLS symptoms and improving sleep, regular exercise is a good habit to develop for people with RLS.
- Trying yoga and stretching. Although it's not clear why, yoga and other stretching exercises could help relieve RLS symptoms.
- Massaging your leg muscles could help ease your RLS symptoms. This could be because of production of dopamine it stimulates or the aid it gives to relaxation. Whatever the reason, leg massage is an easy and relaxing treatment that could help ease your RLS symptoms.
- A foot wrap has been shown to help relieve RLS symptoms. Called restiffic, the foot wrap puts pressure on certain points on the bottom of your foot. The pressure sends messages to your brain, which responds by telling the muscles affected by RLS to relax. This helps relieve your RLS symptoms.
- Pneumatic compression. If you've ever stayed overnight in hospital, you may have had pneumatic compression. This treatment uses a "sleeve" that goes over your leg and inflates and deflates, gently squeezing and releasing your limb and is typically used to improve circulation and prevent blood clots. It has also been shown to relieve RLS symptoms. However, research is conflicted.
- Hot and cold treatments. Some people's RLS symptoms are

aggravated by cold, while others have problems with heat. This could explain the benefits of these hot or cold treatments. However, people with diabetes and loss of sensation need to be particularly careful when trying these treatments.

- TENS machines. With transcutaneous electrical nerve stimulation (TENS), a device sends small electrical currents to parts of your body to help relieve pain. There's not a lot of research on the use of TENS to treat RLS, but it could work.
- Acupuncture. Acupuncture can be helpful in the treatment of many health conditions, and RLS might be one of them. However, more research is needed to confirm acupuncture as a reliable treatment for RLS.

Useful Information

NHS websites – few people have heard of them

According to a report for NHS Connecting for Health, few people in the UK have heard of the NHS's major public health websites. Here they are:

NHS Choices www.nhs.uk is a useful site with masses of information ranging from health topics to details about your hospitals and how they have been assessed.

Easyhealth www.easyhealth.org.uk is a website which provides health information that is easy to understand for people with learning disabilities.

People with learning disabilities can develop Type 1 diabetes and as there is a higher prevalence of obesity, undiagnosed Type 2 diabetes is common. There are various levels of learning disability and missed diagnosis of diabetes is not unusual, for a variety of reasons – staff assuming that the symptoms of diabetes are due to the learning disability or due to the person's own understanding of the symptoms and the inability to communicate these. Once diagnosed, it is not appropriate for people with learning disabilities to be given standard leaflets in a written format, they are not of much use if you can't read. Easyhealth has a wide range of leaflets with words and pictures to help and also to help health professionals who are supporting people with learning disabilities.

Note: there is a legal requirement to make 'reasonable adjustments' to services for people with learning disabilities in primary and secondary care. Offering standard care is not enough – it is a question of doing things differently to suit needs which involves flexibility. NHS Trusts can be prosecuted for not complying with this requirement.

NICE Guidelines related to diabetes:

Type 1 Diabetes

<https://www.nice.org.uk/guidance/ng17>

<https://www.nice.org.uk/guidance/ng18>

<https://www.nice.org.uk/guidance/ng19>

Type 2 Diabetes

<https://www.nice.org.uk/guidance/ng28>

Type 2 Diabetes – newer agents

<https://www.nice.org.uk/guidance/ng28>

Type 2 Diabetes – Foot care

<https://www.nice.org.uk/guidance/ng19>

Diabetic food problems – care in hospital

<https://www.nice.org.uk/guidance/ng19>

Diabetes (type 1 & 2) – Long acting insulin analogues

<https://www.nice.org.uk/guidance/ng17>

Neuropathic pain

<https://www.nice.org.uk/guidance/CG968>

Diabetes (type 1 & 2) – inhaled insulin

<https://www.nice.org.uk/guidance/ng17>

If you do not have internet access, you can request a copy of the NICE guidelines:

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