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WAYS TO SLEEP YOURSELF FASTER

The physical adaptations stimulated by hard training simply won't happen unless you're getting enough sleep. Doubting his own shut-eye quotient, *Jim Cotton* goes in search of the formula for better-quality kip

Illustrations: Jason Hardy



You know the feeling: it's 11am and already you feel ready for bed. You look in the mirror and the bags under your eyes are so bad you barely recognise yourself. "You look rough, mate, you need to get some rest," a workmate chirpily quips. Yeah, you know, but it's easier said than done.

For those of us balancing work, family and training, sleep gets brutally demoted down the list of priorities. Now that we can train virtually on Alpe d'Huez at 11pm in our garage, or send emails to our boss in a bleary-eyed torpor at 5am, quality sleep is under greater threat than ever before. What you might not realise is just how much this lack of sleep is hurting your recovery and performance.

Besides dreaming about getting that coveted 'just one more' bike, what is actually happening to us when we sleep? There are distinct phases of sleep, each one stimulating different forms of recovery and regeneration. These typically fall into a specific order, repeating through a number of cycles. A typical cycle begins with light sleep: this is the phase that makes up 50-60 per cent of your sleeping hours. During light sleep, your memory consolidates new information, and you mentally refresh. Despite the term 'light', this phase of sleep is not poor sleep; the mental regeneration it promotes is crucial for restoring daily alertness and focus.

Deep sleep typically follows light sleep in a sleep cycle, and this is the stage that most powerfully boosts your recovery

“Deep sleep is the stage that’s truly vital for athletic recovery”

after a hard ride kick in. The key element of deep sleep for athletic recovery and performance is the production of human growth hormone (HGH), a potent compound that stimulates cellular growth and muscular repair, and maintains your immune system. Physiological recovery is all about

repairing and rebuilding the damage that you inflicted on your body when you hammered it sprinting for the town sign on your club run or nailing that set of intervals. Human growth hormone is a

natural recovery tonic par excellence.

Nick Littlehales, a sports sleep coach who has worked with Team Sky and British Cycling, states:

“The deeper sleep stages are very important to physical repair, development and rejuvenation... consistent levels of poor sleep quality, and not being able to achieve the deeper sleep phases consistently will reduce alertness, reaction times, stamina, and bodily repair.”

During REM (rapid eye movement) sleep, which tends to happen later in the night, you dream most, your eyes flicker, and your brain is relatively active as you imagine wearing the yellow jersey or owning that new 3T bike.

Sleep for success

What actually happens if you're not getting enough sleep? One night of tossing and turning won't be too detrimental to your riding. While concentration and alertness is affected by one night of particularly poor sleep, endurance and power is preserved. However, the reduction of mental focus can have a big impact on the grit and fortitude needed to hang on in your local road race, compete in a Gran Fondo or last the course of your club's chaingang.

It's when we have several consecutive nights of poor sleep that things become more serious, particularly if you're training hard and in need of recovery. Among a host of other ill-effects such as compromised immunity, potential weight gain, irritability and cognitive decline, daily performance may begin to be affected. The double-whammy of impaired glucose metabolism and HGH production — both associated with periods of poor sleep — results in feeling sluggish and weak on the bike.

It comes as little surprise, then, that sleep is a big deal in the pro peloton. Rod Ellingworth, Team Sky's performance manager, told me: "At Team Sky, we don't have sleep targets for the riders, but we do try to maximise riders' sleep; the more they can sleep, the better."

Such is the importance of sleep that professional teams monitor their riders' shut-eye to assess their recovery levels. Team Sky assesses riders' sleep quality on a daily basis, noting their sleeping hours and times of wakefulness, as Ellingworth explains:

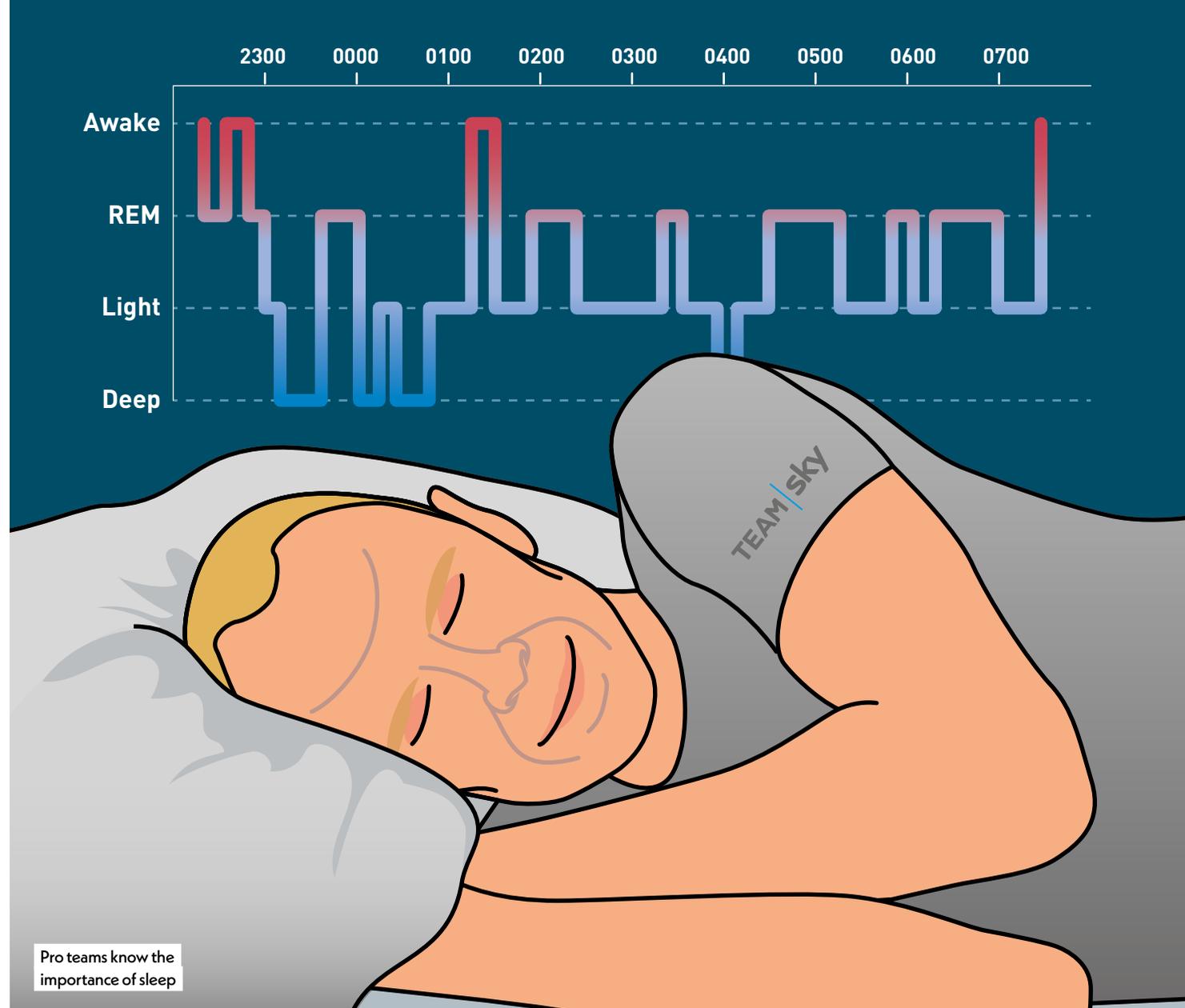
“Riders' recovery is everything. If a rider has a very bad sleep when they're in the middle of a training phase, we would potentially change their training for the day. You have to weigh up the workload they're taking on versus the amount of sleep they've had.”

So how can we improve sleep and reap marginal gains from the comfort of our own mattress? Here are seven proven ways to get the most from sleep to ensure the biggest possible gains, both for your cycling fitness and your general health.

directly linked with either a decline in performance or at least a lack of fire and motivation to train.

In response, on days when both my mind and my gadgets told me that I was far from properly rested, I started trying to squeeze in a cheeky 30-minute early afternoon kip. Whether I achieved sleep or not mattered less than simply ensuring some time for my body and brain to relax. And indeed, I returned to my day feeling invigorated in the mind, more alert, and with better focus.

Occasionally, after a very poor sleep or a particularly tough ride, I treated myself to 90 minutes of midday rest — usually at the weekend, allowing me the flexibility to bank some midday sleep. The sense of physical rejuvenation resulting from the short spell of deep sleep that this downtime allowed was noticeable, and I definitely felt less fatigued the next day, as well as more willing and capable of taking on another hard workout. Furthermore, my sleep trackers indicated that nocturnal sleep that night actually improved in quality with a daytime nap — possibly because I felt less pressure to achieve a solid eight or nine hours of sleep in the night.



Pro teams know the importance of sleep

CW TRIES IT...

‘Tracking and napping worked for me’

I'd long suspected that sub-par sleep was having an adverse impact on my cycling performance and recovery, writes Jim Cotton. Invariably I'd wake up reflecting on a night during which it seemed I'd been awake longer than I'd been asleep. And more often than not, this seemed to tie in with a reluctance to get on the bike, and heavy legs when I summoned the motivation to train. I decided the time had come to get nerdy, and started trialling a few tracking apps and gadgets (see page 47) to measure the duration and quality of my sleep.

A few weeks of tracking my sleep revealed that the issue was not only my lack of hours asleep but more specifically the lack of deep sleep I was accumulating each night. With deep sleep being the part of sleep in which human growth hormone is secreted and physiological repair occurs, it was a shortfall I was keen to address — especially when I began to identify correlations between sleep quality and the ride data and training notes I kept within TrainingPeaks. A few nights of poor sleep and some half-hearted training sessions in the following days hinted that the lack of decent sleep



TAKE A NAP

“Human beings have not evolved to sleep in long blocks only at night,” says Littlehales. It's more natural, in the evolutionary sense, to sleep in several shorter time periods. In the early afternoon after lunch, and after your evening meal, body temperature drops slightly and melatonin, the sleep-inducing hormone, is produced, making us receptive to the possibility of a restorative nap.

The most effective and rejuvenating naps are either 90 minutes — the length of the body's natural sleep cycle — or 30 minutes, one portion of a cycle. A 30-minute nap is a great refresher but it's the 90-minute nap with its deep sleep that offers all the associated restorative effects. A daytime nap is not only refreshing but also has recovery benefits more powerful than any protein shake, massage, or foam roller session.

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SLEEP-TRACK WITH AN APP

Using an app (see box) can be a great way to improve your sleep. Just as having a power meter or heart rate monitor won't improve your fitness unless you apply the data properly, a sleep-tracker won't turn you into Sleeping Beauty unless you wisely apply the information produced.

Having information about how long and effectively you sleep can help you to understand how your daily habits and activities affect your sleep. For example, an app may reveal that you're spending a huge amount of time in bed lying awake, which you could address by altering your bedtime or cutting down on caffeine and alcohol. Similarly, you may see trends in your sleep data, such as consistently insufficient sleep at weekends owing to that pesky early morning club run or social engagements — you can then look to improve by altering your routines.

3

DEVELOP PRE-BED RITUALS

There are several easy things that you can do to improve the duration and quality of your sleep, gaining you some free and



easy wats in the process. Have a routine: just like that pre-ride ritual of polishing your glasses, checking your tyres, and tightening your shoes, you should establish a routine to perform before you hit the sack. It needn't be complicated, but having a series of relaxing actions you always perform before bed will signal to your mind that it's time for sleep. Relaxing music, a bit of yoga, or taking a warm bath are great examples.

Similarly, you should aim to get into and out of bed at a similar time every day. Having a bedtime and wake-up time helps to establish your body's circadian rhythms, leading your system to expect sleep at a certain time every day.

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DITCH THE SCREENS

Although we know you're always keen to check out the latest articles on cyclingweekly.com, using a laptop, tablet or mobile before bed is not conducive to a good sleep. The blue light from their screens disrupts your body's melatonin secretion and may delay the onset of sleep and render you restless in the night.

“Blue light disrupts your body's melatonin secretion”

As such, try to avoid your devices for at least an hour before bed to let that melatonin work its magic and prepare you for sleep. Instead, try reading a book (or CW's print edition!). Reading reduces stress, tires your eyes, and can become a key part of your pre-sleep routine.

so shut out natural light with a blackout blind, heavy curtains, or an eye mask.

Bedroom temperature is also important. Having a room cooler than our own core temperature — an environment of around 16-18°C — encourages the body into a sleep state, so be sure to cool or warm your room as appropriate.

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BUILD A SLEEP SANCTUARY

Keep your bedroom for sleep and other, ahem, 'nocturnal' activities only. Working or doing life admin on your bed will alter your brain's perception of what the room is for, and may prevent you from relaxing. Absolute darkness is a must,

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MAKE SOME SPACE

Littlehales advises that, to sleep well, an adult needs at least the space of a standard-size single bed. Humans evolved to sleep in plenty of space, that is, in large open environments. So if you share a bed, you need the equivalent of

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BANISH THE BOOZE

Although a glass of red helps to initially bring on deep sleep, alcohol severely disrupts your sleep cycles. Numerous chemical processes occur in the body as your system processes what is essentially a toxin. The main impact on your sleep architecture is a decrease in REM sleep, and a disrupted night, which will leave you feeling drowsy and bleary-eyed the next morning.

If you are going to have a drink, do so in moderation, and make your last one at least two hours before bed. This will allow the body time to metabolise the alcohol and minimise its impact on sleep.

THE BEST TECH FOR TRACKING YOUR SLEEP

There's a plethora of apps and tech available to track your sleep, ranging from free smartphone downloads to gadgets as pricy as your bike computer. CW tested the following three:

Sleep Cycle iPhone app



Your movements vary distinctively in each sleep cycle. For example, during REM sleep, we are motionless, whereas we experience different degrees of activity during light and deep sleep. The Sleep Cycle app uses sound tracking to track this night-time fidgeting, and produces a graph indicating your sleep phases for the night and your approximate sleep hours. Very impressive for a budget option.

Cost: A free download, with the inevitable paid premium membership option of \$29.99 per year.

www.sleepcycle.com

Fitbit Ionic



This smartwatch-cum-activity monitor offers a host of features, including heart rate and step monitoring, smartphone integration, and sleep tracking. Your heart rate and the pattern of the beats varies with each sleep state, and the Ionic uses this information, along with its motion-sensing features, to identify your sleep states and record the time spent in each sleep stage, and your total hours of sleep.

Cost: At £280, it's pricy, but this gadget offers a huge amount of functionality beyond just monitoring sleep.

www.fitbit.com/shop/ionic

Whoop Band



A highly sophisticated tracker that monitors sleep, heart rate, 'strain' (cardiovascular exertion) and heart-rate variability. It's able to suggest when you're fresh and ready to train or when you're poorly rested and need some sofa time. The sleep tracking is based on heart rate and motion sensors, like the Fitbit, but also uses ambient skin temperature, something that fluctuates between sleep states.

Cost: Available in the USA only (for \$180 plus membership) but launching in the UK soon. An extremely impressive gadget.

www.whoop.com