



Importance of aerobic exercise, posture and work ergonomics

Presented by Leah Hearle
Tuesday, 8th October 2014

Health



State of complete physical,
mental and social well-being
and not merely the absence
of disease and infirmity.

World Health Organisation

Sedentary behaviours (from the Latin sedere, “to sit”) include sitting during commuting, in the workplace and the domestic environment, and during leisure time.



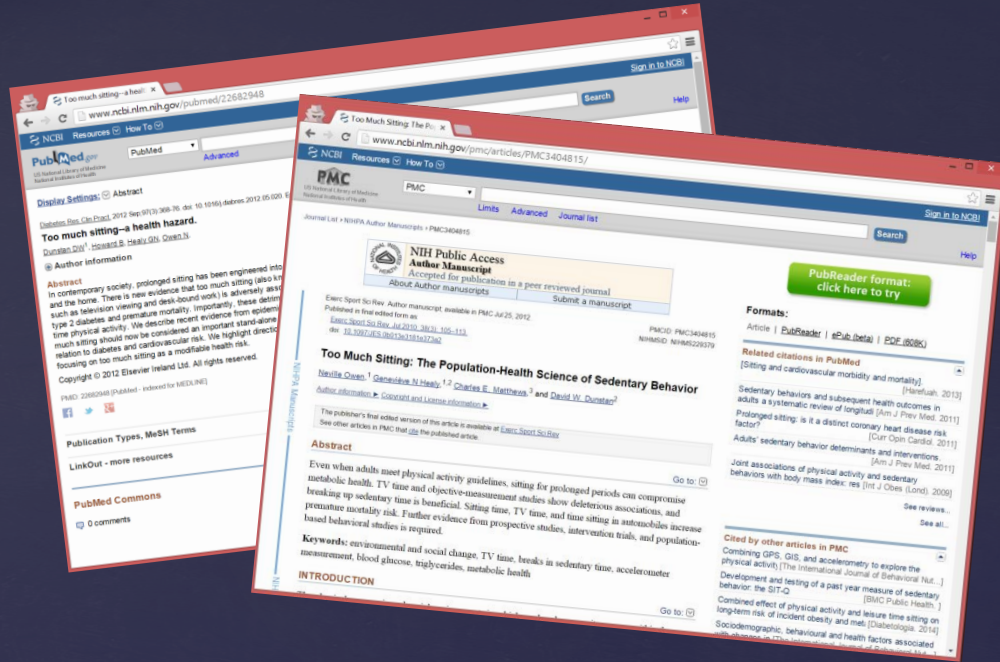
Energy expenditure

- ⌘ Sitting: 1.0 - 1.5 METs
- ⌘ Standing: 2.9 METs
- ⌘ Moderate-to-vigorous physical activity - cycling, swimming, walking: 3 - 8 METs

We spend more than half of our waking hours involved in sedentary behaviour

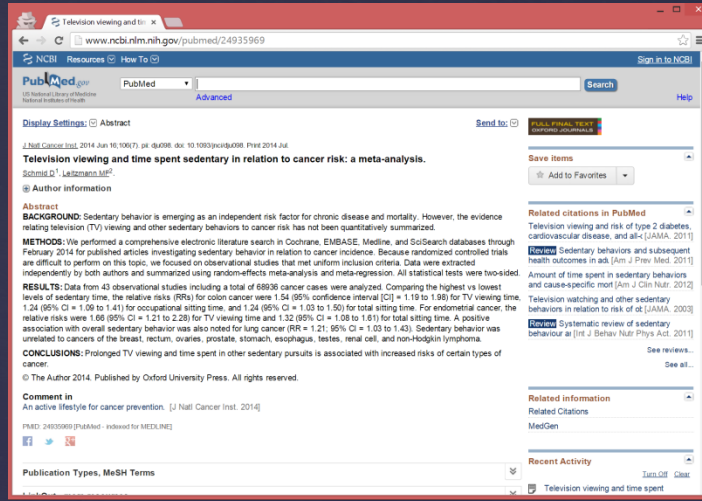


The literature



Even when adults meet physical activity guidelines, sitting for prolonged periods can compromise metabolic health. TV time and objective-measurement studies show deleterious associations, and breaking up sedentary time is beneficial. Sitting time, TV time, and time sitting in automobiles increase premature mortality risk.

Research: Sitting too much



Prolonged TV viewing and time spent in other sedentary pursuits is associated with increased risks of certain types of cancer.



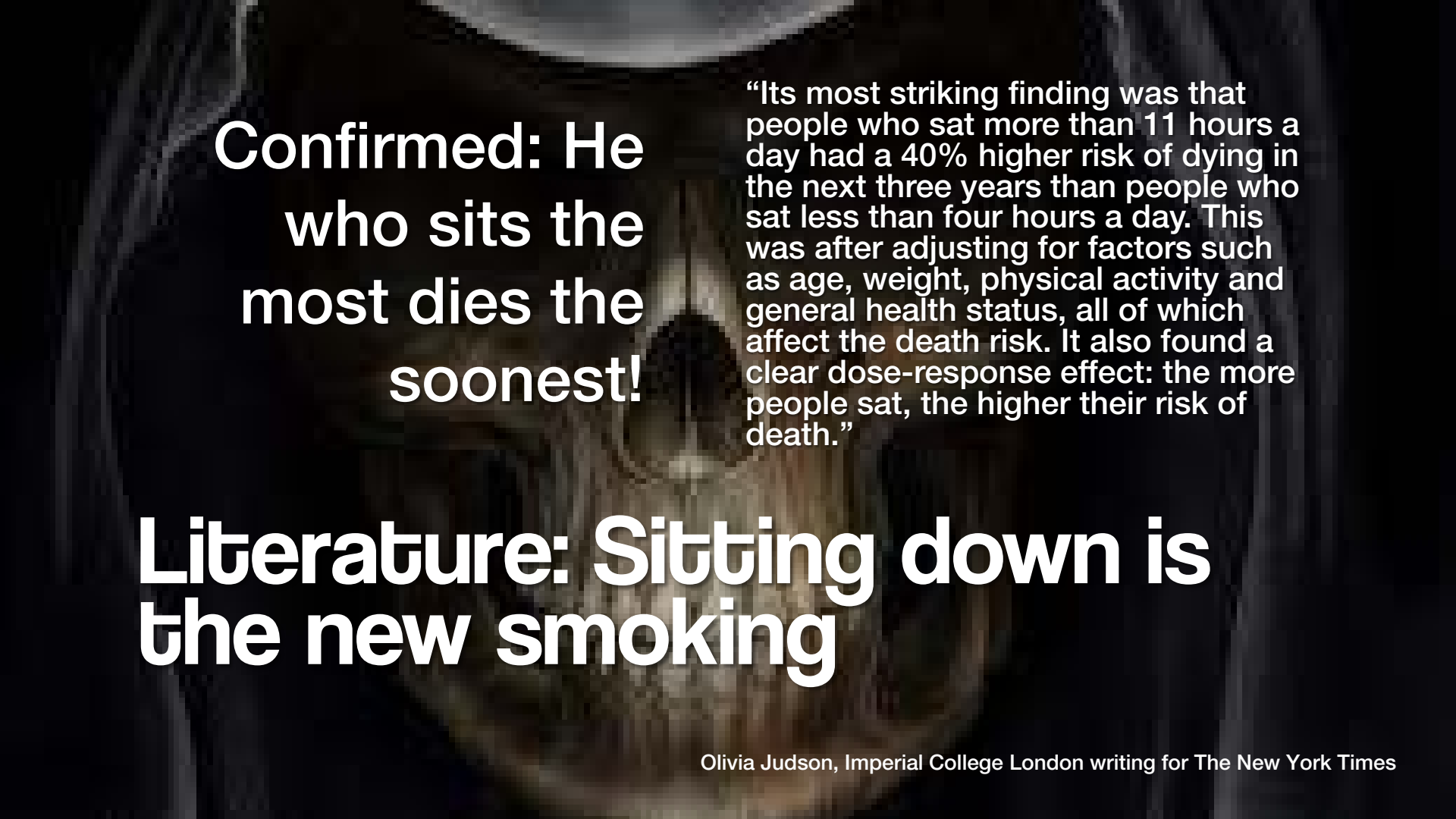
Research: TV viewing risks



{ “It doesn’t matter if you go running every morning, or you’re a regular at the gym. If you spend most of the rest of the day sitting, in your car, your office chair, on your sofa at home, you are putting yourself at increased risk of obesity, diabetes, heart disease, a variety of cancers and an early death.”

Literature: The chair is your enemy

Olivia Judson at ICL for The New York Times. Photo: Canepari, left; Chris Machian

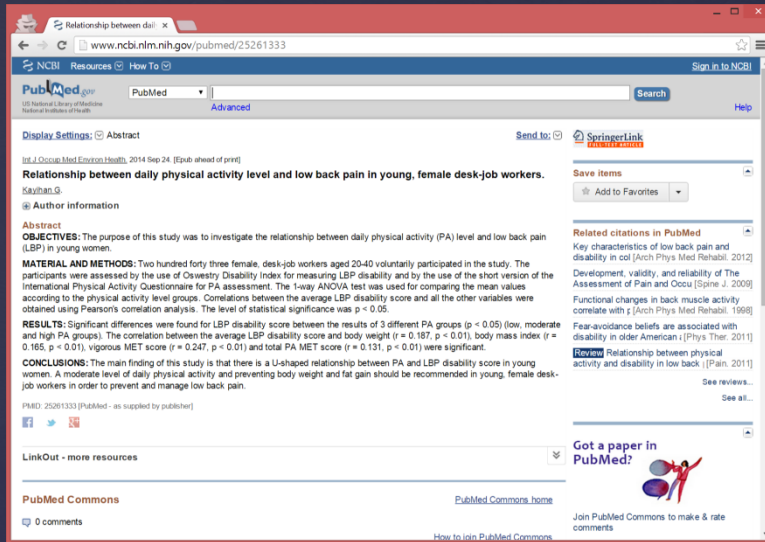


**Confirmed: He
who sits the
most dies the
soonest!**

“Its most striking finding was that people who sat more than 11 hours a day had a 40% higher risk of dying in the next three years than people who sat less than four hours a day. This was after adjusting for factors such as age, weight, physical activity and general health status, all of which affect the death risk. It also found a clear dose-response effect: the more people sat, the higher their risk of death.”

**Literature: Sitting down is
the new smoking**

Olivia Judson, Imperial College London writing for The New York Times



A moderate level of daily physical activity and preventing body weight and fat gain should be recommended in young, female desk-job workers in order to prevent and manage low back pain.

Research: lower back pain

REVIEW

Health benefits of physical activity: the evidence

Darren E.R. Warburton, Crystal Whitney Nicol, Shannon S.D. Bredin

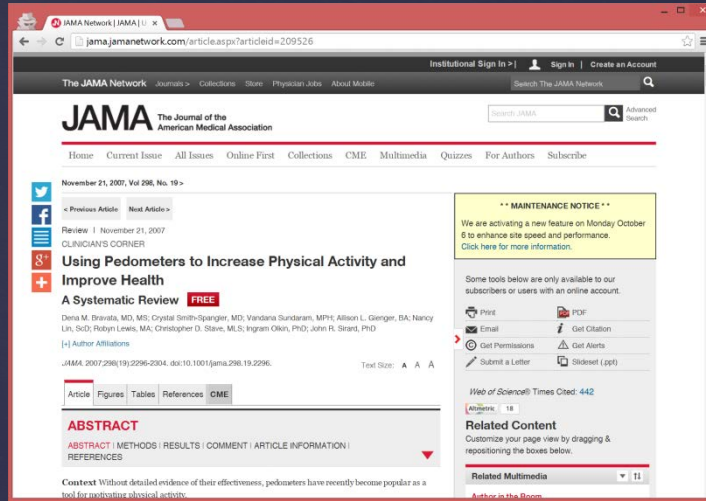
We confirm that there is irrefutable evidence of the effectiveness of regular physical activity in the primary and secondary prevention of several chronic diseases (cardiovascular disease, diabetes, cancer, hypertension, obesity, depression and osteoporosis) and premature death

Literature: effectiveness

“Primary Recommendation: To promote and maintain health moderate-intensity aerobic (endurance) physical activity for a minimum of 30 min on five days each week or vigorous-intensity aerobic physical activity for a minimum of 20 min on three days each week”



Literature: Primary recommendation



Increased physical activity is associated with improvements in numerous health conditions, including coronary artery disease, hypertension, stroke, insulin sensitivity, osteoporosis, and depression.

Research: Using pedometers



Revisiting “How Many Steps Are Enough?”

CATRINE TUDOR-LOCKE¹, YOSHIRO HATANO³, ROBERT P. PANGRAZI², and MINSOO KANG⁴

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5,000 → 10,000 steps!

Literature: How many steps are enough?



While this study found an association between aerobic exercise and mood, quality of life and risk of an earlier death.

...aerobic exercise was associated with a reduced risk of depression and an increased health-related quality of life for dialysis patients with heart failure.

Literature: Quality of life

1. Stand More – Every 30 minutes get up and walk around. Also take phone calls standing up, and do stand up meetings.

2. Change Your Commute – Try parking a little bit further, or getting off the bus or tube one stop earlier, just something to at least get you moving more.

3. Walk And Talk – Walking meetings are a cool way to conduct your meetings.

4. Optimize TV Time – Try doing star jumps or some stretches during ad breaks.

5. Eat Better – Eating healthy is important, since you're doing so much damage to your body by sitting, the least you could do is try and feed your body good food.

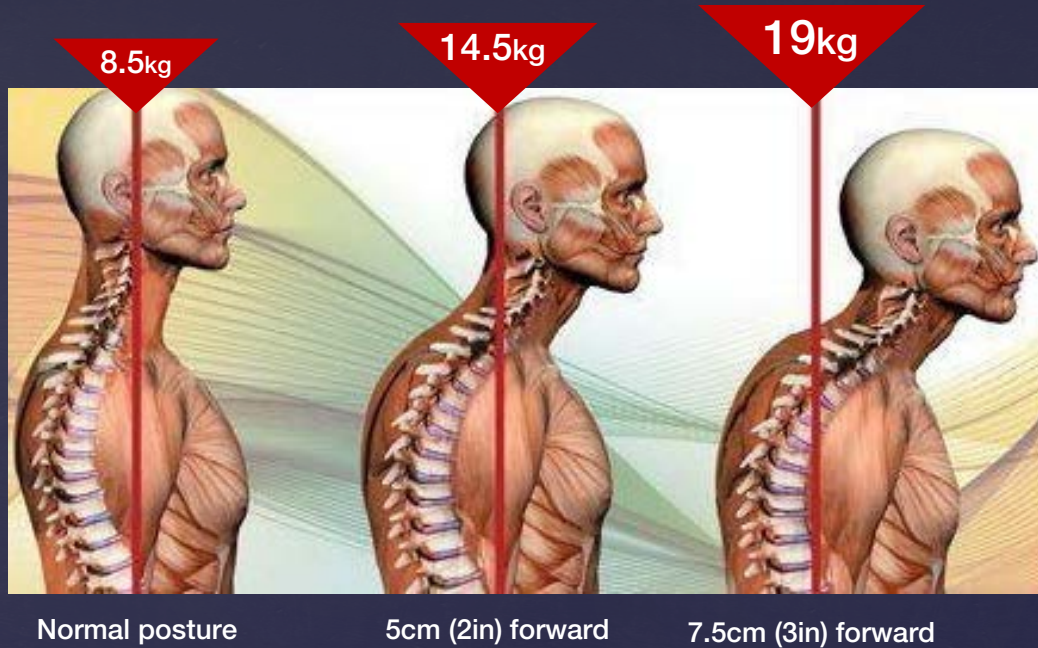
6. Use Tools – Invest in a Fitbit or Jawbone Up, and monitor how you move, and make sure to optimize.

What can I do about it?



Exercises and posture awareness.

A pain in the neck?



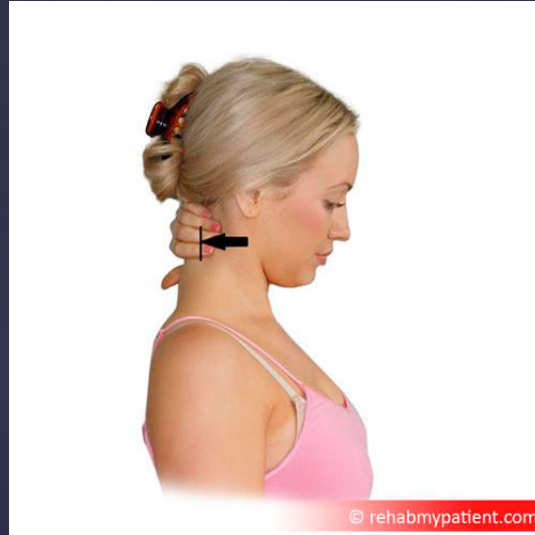
{ For every 2cm of forward head posture, it can increase the weight of the head on the spine by an additional 3.5kg.

How heavy is your head?



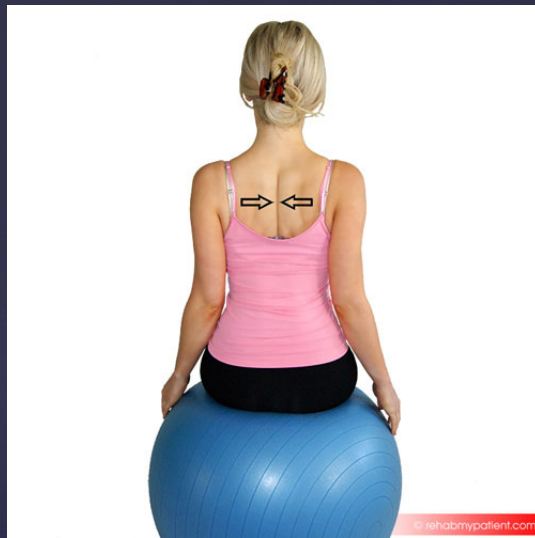
{ Bend your neck forwards, and then side-bend your neck by taking your left ear towards your left shoulder. Hold on to a chair to make the stretch stronger. This will allow you to feel a stretch at the back and side of your neck. You can make the stretch stronger by assisting with your hand.

Levator scapulae stretch



{ Placing both hands behind your head, attempt to pull your head backwards while tucking your chin in slightly, but resist this movement with your hands. Keep your head still. You will feel a gentle contraction of the muscles at the back of the neck.

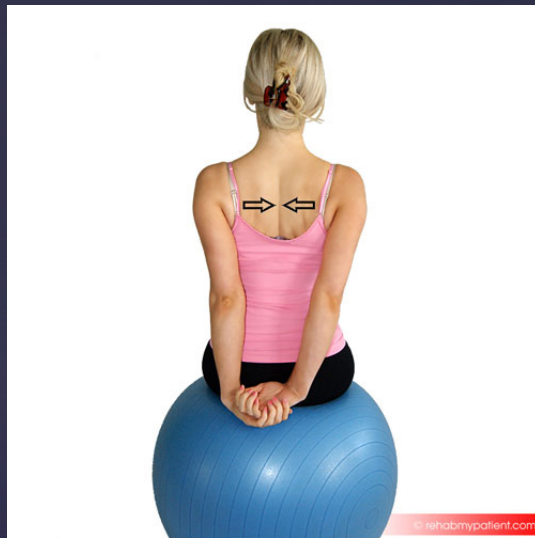
Isometric neck retraction



{ Standing/sitting, with good posture, pull your arms backwards while squeezing your shoulder blades together. You will feel a muscular contraction around and between your shoulder blades.

Standing/sitting retraction

Part 1



{ Standing/sitting, with good posture, pull your arms backwards while squeezing your shoulder blades together, and joining your hands. You will feel a muscular contraction around and between your shoulder blades.

Standing/sitting retraction

Part 2



Sit down with good posture, tuck your chin down slightly, and hold your fingers under your skull. Try to elongate your neck and pull your skull upwards with your fingers. You should feel a gentle stretch at the top of your neck under your fingers. Stop immediately if you get any dizziness. Hold the stretch, and relax.

Sub-occipital stretch



{

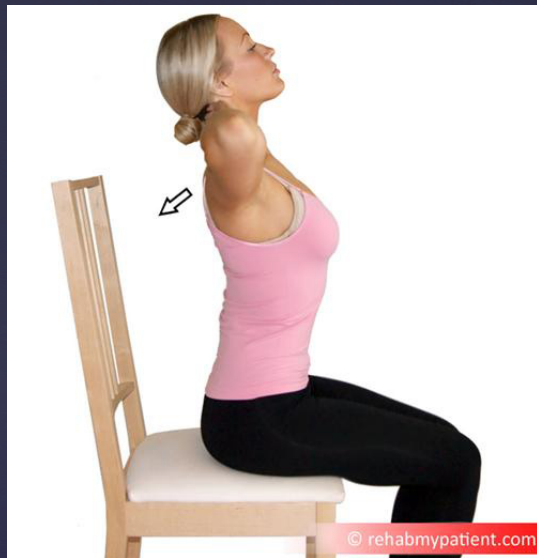
Bend your neck to the side by taking your left ear towards your left shoulder. Now tuck your chin towards your chest. Hold the stretch, and relax. You can use your hand to gently assist. This will allow you to feel a stretch at the back and side of your neck.

Neck flexion with side flexion



Sit on the edge of a chair, and open your legs and allow them to relax outwards. Keep your body and spine tall, lift the crown of your head towards the ceiling, and arch your lower back slightly. Turn your arms outwards so your palms are facing forwards, and draw your shoulder blades down and towards the midline. Make a gentle double chin with your head at the same time. Breathe deeply throughout. You will feel a stretch across your chest and front, as well as muscles working in your back, all helping to improve your posture.

Bruegger's Posture sitting



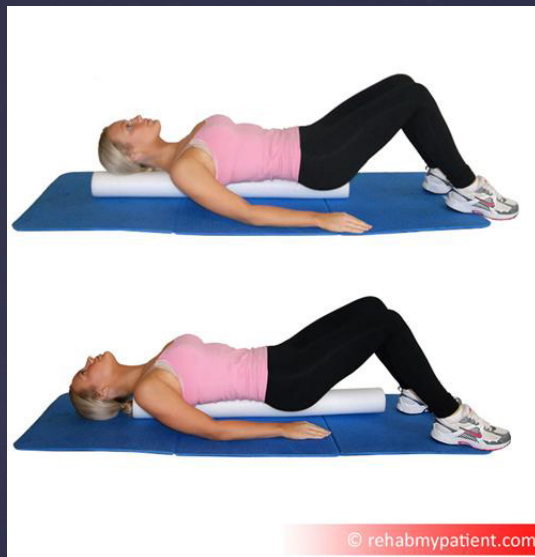
{ Support your neck by placing your hands interlocked behind your neck. Rounds you lower back slightly, to focus the movement to the upper back, and slowly bend backwards.

Sitting extension



Sitting upright on a Swiss ball, support your neck by placing your hands interlocked behind your neck. Rounds you lower back slightly, to focus the movement to the upper back, and slowly bend backwards.

Swiss ball sitting extension



Place a foam roller vertically under your spine and lie flat on your back with your knees bent. To make the exercise harder, you can drop your neck to the floor, or straighten your legs. You can also lay your arms out to the side. Start with a 10cm (4in) diameter roller and progress to a 15cm (6in) roller. This exercise can help improve mobility to the spine and improve posture.

Foam roller thoracic

Extension vertical



Place a foam roller under your spine and lie flat on your back with your knees bent. You can place the roller anywhere along the upper back, but one of the best places is right underneath the shoulder blades. Slowly roll your spine over the foam roller, and you will feel it pushing up into your back. Start with a 10cm (4in) diameter roller and progress to a 15cm (6in) roller. This exercise can help improve mobility to the spine and improve posture.

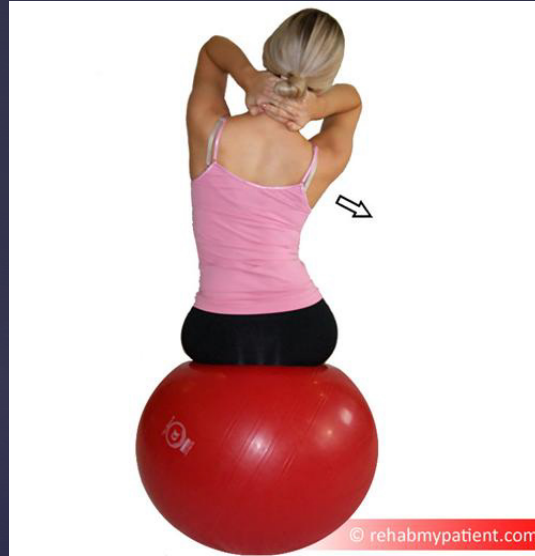
Foam roller thoracic

Extension horizontal



{ Support your neck by placing your hands interlocked behind your neck, and slowly bend backwards and to the side. Repeat to each side. This exercise will help mobility in the spinal joints.

Sitting extension with side flexion



Sitting on a ball with your hands interlocked behind your neck, or across your shoulders, and slowly bend to the side. Repeat to each side. This exercise will help stretch your spine.

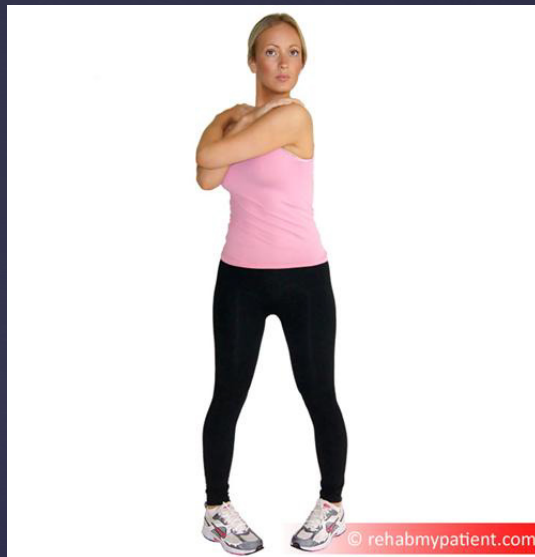
Swiss ball side flexion



{

Sit upright on a Swiss ball, with your feet flat on the floor. Cross your arms over your shoulders. Twist to one side keeping your head and hips still. Repeat to the opposite side. This exercise is a mobility exercise for the spine.

Swiss ball sitting rotation



{

Stand with your feet shoulder width apart and your feet turned inwards. Cross your arms over your shoulders. Twist your spine to one side as far as comfortable. Keep your spine upright. Repeat to the opposite side. This exercise is a mobility exercise for the spine.

Standing rotation hips locked

Your 24/7 energy PLAN



Exhausted? Burnt out? Tetchy? Here's how to beat the tiredness trap and feel *this* perky, all day. By **Kate Faithfull-Williams** ▶

You row with your boyfriend about nothing, are enraged by unexpected items in the bagging area and want to cry when your boss asks the tiniest thing... we all know how hard it is to function when we're tired. In fact, a new study from the New Economics Foundation think tank reveals that one in two people in the UK say that, more often than not, they don't feel fresh and rested when they wake up.

In other words, we have a problem – although sleep troubles brew in the bedroom, the real nightmare is in the day, when fatigue makes everything feel ten times harder. "It impacts everything from your sense of humour to your career, weight and relationships," explains Dr Nerina Ramlakhan, author of *Tired But Wired*. "Sleep is only one way of recovering energy. You need to look after yourself emotionally, mentally and nutritionally."

So, if you're tired of feeling tired, read on for GLAMOUR's scientifically proven guide to boosting your energy by day – and sleeping well at night.

YOUR ENERGY MENU



7.30AM WATER, WATER

Even mild dehydration makes you feel sleepy and unable to focus, says a study in the *Journal Of Nutrition*. "Water makes you more alert, helps digestion and speeds up your metabolism," says dietitian Helen Bond. Gulp a big glass first thing, and keep sipping all morning: your pee should be pale by lunchtime.



1PM POWER LUNCH

Carbs get a bad press, but ditching them can make you forgetful and tired. Unlike the sugary, refined kind, complex carbs such as sweet potato, wholegrain rice and quinoa give your brain the glucose it needs, without the spinnies and tanking low. Try a big sweet potato salad with feta and colourful vegetables.



10PM SIP A CUP OF CHAMOMILE BEFORE BED

A study in the *Journal Biological & Pharmaceutical Bulletin* concludes that chamomile tea significantly decreases the time it takes you to fall asleep.



8AM BREAKFAST

"Breakfast is vital for sleep," says Dr Ramlakhan. "You have a metabolic window in the first hours of the day to show your body there's a good supply of food, so it can relax and sleep when it needs to." Poached eggs on wholegrain toast give a good balance of protein, fat and complex carbs to fuel your day.



3PM CHOC O'CLOCK

Chocolate is a good source of caffeine, but there's more. Flavonoids found in chocolate boost your mood and your brain power, say neuroscientists in a *Journal Of Psychopharmacology* study. Cheap chocolate won't cut it: you need a dark bar with 70% cocoa to reap the rewards.



10.30AM COFFEE BREAK

You need a caffeine hit most when natural energy levels dip – and mid-morning is the best time, say researchers from the Uniformed Services University of the Health Sciences in Maryland, US. It's when the level of alertness hormone cortisol drops from its early-morning high.



7.30PM DINNER

"Lethargy could be a sign you're low in iron, the mineral used to make red blood cells, which help store and carry energising oxygen in your blood," says Bond. The best iron-boosting meal? Steak and broccoli. Red meat is one of the best sources; broccoli is rich in vitamin C, which helps your body absorb iron.

Five things to say **No!** to this week

1

THE COLLEAGUE WHO DUMPS HER WORKLOAD ON YOUR DESK.

2

A DATE WITH THE NICE BUT SPARK-FREE GUY YOU MET ON MATCH.COM.

3

THAT SO-SO PARTY, IF YOU'VE BEEN OUT THREE NIGHTS THIS WEEK.

4

DINNER WITH THE FRIEND WHO'S FLAKED OUT ON YOU COUNTLESS TIMES.

5

SIBLINGS WHO THINK YOU'LL SHOP FOR MUM'S BIRTHDAY GIFT AGAIN ▶

Why you need to get moving

Exercise is the single known thing you can do to boost energy during the day and improve the quality of your sleep at night.

START WITH STAR JUMPS

"Heart-pumping cardio is the best way to rev up in the morning as it increases blood flow and sends oxygen to all your muscles," says osteopath Leah Hearle. No time for a full workout? She prescribes star jumps.

KNOW YOUR BBC
Slumping over your keyboard all day fatigues muscles fast. "Remember BBC: Butt to Back of Chair," advises Hearle. "Use the back as a support and tuck your feet under your desk. You should be able to type without moving your elbows away from your body."

LUNCHTIME IS GYM TIME

Research from Stockholm University shows that exercise increases productivity so much, it makes up for the time spent out of the office. The Swedish scientists say the best time to go is midday.

GOODBYE, CHAIR

"Get up as much as you can to sidestep tiredness," says Hearle. Suggest "walking meetings" for one-on-ones with colleagues, where you get outside and let ideas flow as you move. They might laugh now, but this time next week they'll be begging you to walk 'n' talk.

Th

QUIT COMPETITIVE FATIGUE

OK, you're tired playing 'I'm a Shattered' with colleague destructive. doesn't score sympathy, it drains your energy. arguments will drain your energy. precious comms if you're already says Dr Ramlakhan

at your desk

FORGIVE YOURSELF

Losing your temper when you're tired and stressed is normal, so apologise, then don't berate yourself further," says Shafran. "Guilt drains your emotional energy."

AND... BREATHE

"Take a minute to do deep diaphragmatic breaths—the extra oxygen is calming and energising," adds Shafran. "Inhale slowly through your nose, breathing into your lower belly. Hold for two seconds, then exhale slowly through the mouth; wait a few seconds, repeat." ►

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Digital traps to dodge

EMAILS BEFORE BED

There's a clear link between the ubiquitousness of smartphones and the rise in sleep problems, says the National Sleep Foundation. Reading emails late at night makes you worry about everything you need to do tomorrow.

BLUE LIGHT IN YOUR BEDROOM

Electronic devices emit a short-wavelength light that interferes with production of sleep hormone melatonin, says the European Sleep Research Society. Switch off your mobile, tablet and TV and you'll switch off too.

SLEEP APPS

"To sleep, you need to stop measuring and let go," says Dr Ramlakhan. "Trackers make sleep a high-pressure event. It's normal to wake in the night, but if you then look at data, your brain switches on and takes longer to get back to deep sleep."

INSOMNIA SOS

It's time to take the pressure off

SAY THANK YOU

"The number one thing I've found helps insomniacs is doing a simple gratitude exercise," says Dr Ramlakhan, who has a sleep clinic at the Capio Nightingale Hospital, London. "When you get into bed, think of five good things that happened today. Perhaps you got a seat on a busy train, received a sweet text from a friend or did work you're proud of. Listing reasons to be thankful drops your stress levels almost immediately."

GOOD REST TOPS POOR SLEEP

"The more you pressure yourself to sleep, the less likely you are to

actually fall asleep," says

Dr Ramlakhan. "So tell yourself it doesn't matter if you don't sleep tonight, I'll just use the time to rest." You'll be surprised how quickly you get to sleep when you take the pressure off."

BOYCOTT THE BEDROOM

Still tossing and turning? A new study from Harvard Medical School shows that getting up and pottering in another room for 20 min will speed your return to slumber. When you get into bed, you're relaxed and less afraid of sleepless

MAKE THIS YOUR NIGHTTIME ROUTINE

The evening is your buffer-zone at the end of a busy day. Here's how to make your downtime count...

WEAR A ONESIE

Lying on the sofa recharges your batteries way more effectively when you're warm and cosy, according to research from the Psychiatric Hospital of the University of Basel in Switzerland.

LAUGH

Researchers at Indiana State University School of Nursing found that laughing can boost energy. Need inspiration? Watch *Inside Amy Schumer* (Comedy Central), because we too have wondered if guys are only interested in us for our perms.

BATHE IN SLEEPY SALTS

70% of us are deficient in magnesium, which relaxes muscles and encourages deep sleep. You can absorb it through the skin, so try two cups of Epsom Salts (£1.49 boots.com) in your bath.

LIGHT A CANDLE

In dim light, the pineal gland in your brain secretes melatonin, which tells your body that it's time

SLEEP ON YOUR BACK

"It makes it easy for your head, neck and spine to maintain a neutral position, which means more restorative oxygen flow to your brain," says Hearle. @

Joshiah Mizukami - Need s... X

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**Josiah Mizukami**

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