- Curiosities and wonders

SCIENCE

MEDICAL FACT OR FICTION?

Surprising statistics and common misconceptions about the human body

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DID YOU KNOW? Blood makes up around seven to eight per cent of your total body weight

WAKING A SLEEPWALKER IS BAD FOR THEIR HEALTH

MYTH While the act of sleepwalking isn't bad for your health, it can lead to some hazardous situations. Somnambulism is the name for walking or performing activities during sleep. It typically occurs during the non-rapid eye movement stage of sleep. Several factors can lead to walking while sleeping, including alcohol use, stress and even brain injury. However, there is a genetic explanation for sleepwalking. Studies have shown that children with one or both sleepwalking parents are 40 to 60 per cent more likely to sleepwalk themselves. As for the consequences of waking a sleepwalker, there is no evidence that it will necessarily hurt or harm them, but will likely cause disorientation and confusion.



Sleepwalking can start at any age, but is most common in children

LYING ON YOUR BACK MAKES YOU SNORE MORE

FACT The thunderous roar of a snorer can be made worse when they sleep on their back. Known as the supine position, lying this way might feel comfortable, but switching to a lateral position, or lying on your side, can reduce the volume of your snores. Snoring is caused by airflow being restricted through the body's airways during sleep. When you lie on your back, gravity pulls tissues that surround your airways downwards, narrowing them. As air passes through the nasal passage, it causes tissue to vibrate with every breath and can create a snoring sound. When you sleep on your side this tissue doesn't move downwards, opening up the airways and reducing the volume of snoring.



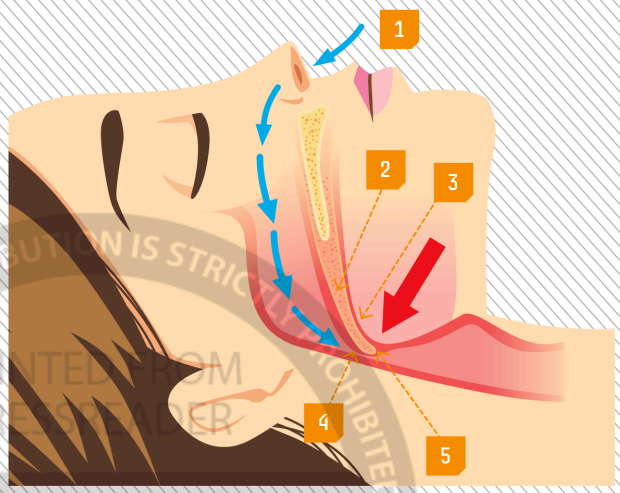
The record for the loudest snore is 111.6 decibels, equivalent to the sound of a jet flying over your house

SNORING SCIENCE

What causes this roaring sound while we sleep?

1 BLOCKING AIRFLOW
When the various soft tissues in the mouth fall back towards the throat, it narrows the airways, causing them to vibrate and produce sound while breathing.

2 SOFT PALATE
A fleshy section found at the back of the roof of the mouth that is made up of muscle fibres and connective tissue.



3 TONGUE
This muscular organ extends into the floor of the mouth from the flap of tissue at the back of the throat, called the epiglottis.

4 UVULA
A soft teardrop-shaped flap of tissue that hangs down at the back of the mouth.

5 TONSILS
Two round, fleshy lymph nodes at the back of the throat.

THE FIVE-SECOND RULE

MYTH It doesn't matter if it's five or 500 seconds – harmful bacteria can contaminate food within milliseconds of making contact with it. This fictitious time allowance is thought to date back to 13th-century Mongolia. When food fell from the table at elaborate banquets thrown by Mongol ruler Genghis Khan, it would remain there until the ruler decreed otherwise, and this sentiment carried on throughout history. Over the years, many different studies have concluded that bacteria transfers to dropped food well before the five-second timer is up. Scientists have discovered that *Escherichia coli* can transfer onto cookies and gummy bears from a tiled surface in less than five seconds and *Klebsiella aerogenes* can cross-contaminate from many different surfaces, such as carpet, wood and steel, in less than a second.



Dry foods gather less bacteria than foods with a wet surface, such as an apple slice

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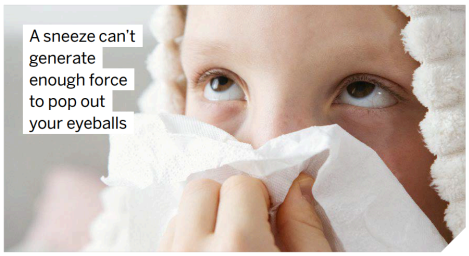
ROSEMARY CAN HELP WITH HAIR REGROWTH



Through a process called steam distillation, essential oils can be extracted from rosemary

FACT Oil from this common kitchen herb contains substances that can help promote new hair growth. The rosemary plant contains several compounds that mimic the abilities of minoxidil, a common hair-growth medication. Rosemary oil and minoxidil both increase blood flow within tiny vessels on the scalp, known as microcapillary perfusion. This increase in blood supply promotes hair follicle function and therefore new growth. Rosemary oil is also thought to have anti-inflammatory properties that can reduce scalp irritation and flaking to support hair growth. However, it's important to note that using rosemary extract can also cause skin irritation and even damage the skin, so consult a medical professional before use.

YOU CAN'T SNEEZE WITH YOUR EYES OPEN



A sneeze can't generate enough force to pop out your eyeballs

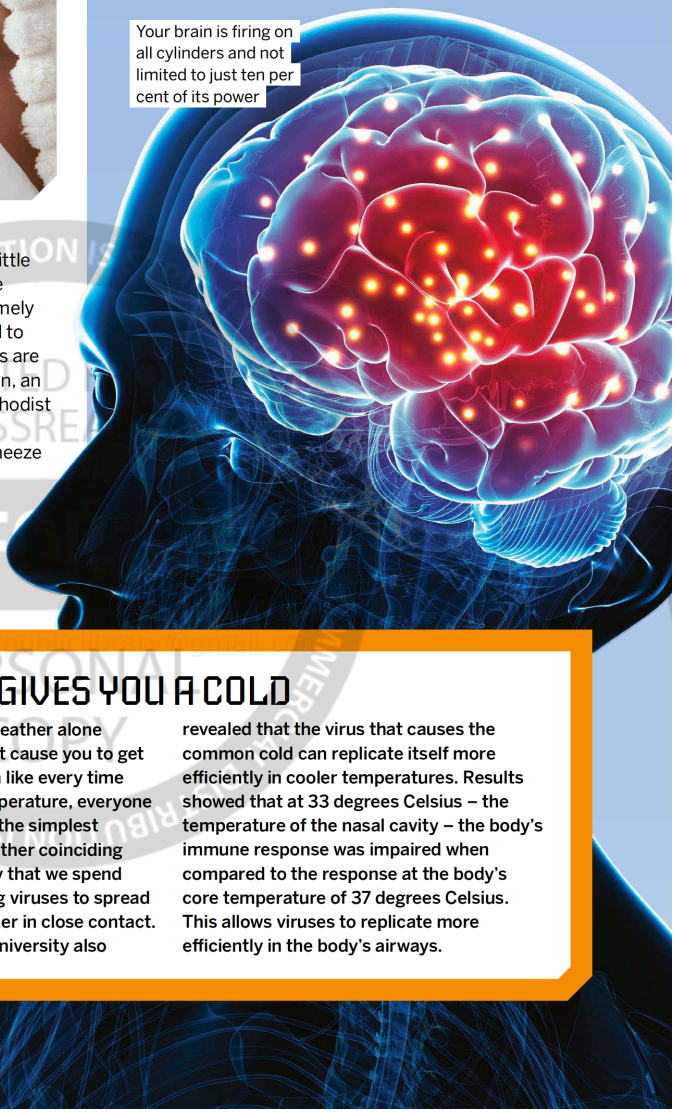
MYTH This playground rumour has struck fear into the hearts of many who believed that sneezing with their eyes open would cause them to pop straight out of their head. But fear not – it's perfectly possible to sneeze wide-eyed without losing your eyeballs. The reason people typically sneeze with their eyes closed is to prevent any of the particles of debris the sneeze is seeking to evict from entering the eyes. While there have been some claims of people dislocating their eyeballs from the pressure of a sneezing fit, there is little evidence to support this. "Pressure released from a sneeze is extremely unlikely to cause an eyeball to pop out, even if your eyes are open," says David Huston, an allergist at Houston Methodist Hospital. The vascular pressure created by a sneeze is strong enough to potentially rupture capillaries in the eyeball, but not to detach the muscles holding the eyeball in its socket.

Did you know?

A sneeze can travel at 100 miles per hour

YOU ONLY USE TEN PER CENT OF YOUR BRAIN

MYTH This common misconception dates back to the early 1900s, when the philosopher and founder of American psychology William James suggested that we only use a small portion of our potential. In a 1907 paper titled *The Energies of Men*, James wrote: "We are making use of only a small part of our possible mental and physical resources." It's believed this is the genesis for the myth, perpetuated by Dale Carnegie's 1936 book *How to Win Friends and Influence People*, which had a foreword written by American writer Lowell Thomas, where he wrote that "professor William James of Harvard used to say that the average person develops only ten per cent of his latent mental ability". However, all scientific evidence shows that there isn't a percentage of the brain to unlock and that we use 100 per cent of the brain's ability.



Your brain is firing on all cylinders and not limited to just ten per cent of its power



Cold weather forces people into closer quarters, spreading bacteria and viruses

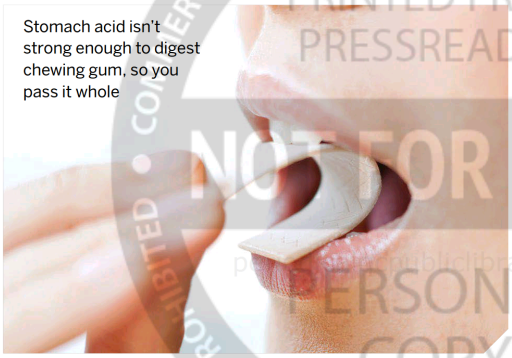
BEING COLD GIVES YOU A COLD

MYTH Cold weather alone doesn't cause you to get sick. So why does it seem like every time the weather drops in temperature, everyone suddenly gets ill? One of the simplest explanations for cold weather coinciding with getting sick is simply that we spend more time inside, allowing viruses to spread from one person to another in close contact. A 2015 study from Yale University also revealed that the virus that causes the common cold can replicate itself more efficiently in cooler temperatures. Results showed that at 33 degrees Celsius – the temperature of the nasal cavity – the body's immune response was impaired when compared to the response at the body's core temperature of 37 degrees Celsius. This allows viruses to replicate more efficiently in the body's airways.

DID YOU KNOW? On average, we shrink almost a centimetre per decade after turning 40

CHEWING GUM STAYS IN YOUR STOMACH FOR SEVEN YEARS

MYTH If you swallowed a piece of chewing gum today, would it take until 2031 for it to be fully digested? The simple answer is no. Chewing gum is made from different kinds of sweeteners and flavourings, and all include a gum base, which is typically a polymer called polyisobutylene. The robust and elastic gum base allows the chewer to continually masticate it without it breaking down. However, sometimes gum finds its way past the throat and travels through the gastrointestinal tract, taking between 24 and 48 hours to pass through. If enough gum is swallowed in a single sitting, it runs the risk of forming a blockage during its transit through the body, but a small amount of gum isn't sticking around in the body for long.



Stomach acid isn't strong enough to digest chewing gum, so you pass it whole

HAIR AND FINGERNAILS CONTINUE TO GROW AFTER DEATH

Did you know? More bacteria is transmitted by shaking hands than by kissing

MYTH This morbid rumour is thought to originate from the 1928 World War I novel *All Quiet on the Western Front*, which describes corkscrew nails and grass-like hair that continue to grow even after death. However, the appearance of fingernails and hair growing on the deceased is merely an optical illusion. Following death, the body becomes dehydrated and dries out. This causes the skin to retract. When the skin around the fingernails and scalp retracts, it can appear as though the hair and nails have continued to grow. For someone's nails to grow after death, they would need a supply of glucose, hormone regulation and cell regeneration, all of which stop after death.



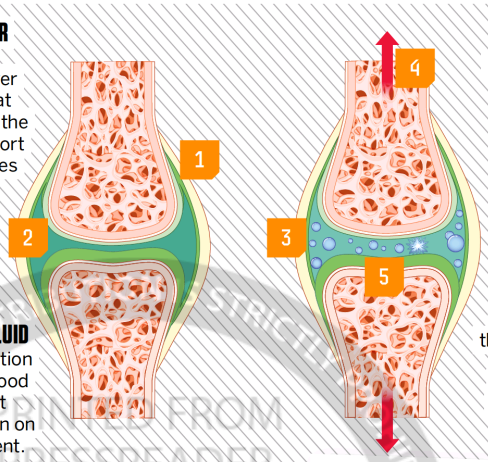
It's the shrinkage of skin that makes hair and nails look longer after death

KNUCKLE POPPING

How bubbles burst between your finger joints

1 ARTICULAR CAPSULE
A fibrous layer of tissue that encapsulates the joint for support and minimises friction.

2 SYNOVIAL FLUID
A viscous solution made from blood plasma that reduces friction on joint movement.



3 BUBBLES
Dissolved gases, such as nitrogen and oxygen, form tiny bubbles within the synovial fluid.

4 POP
Under the pressure of someone cracking their knuckles, the bubbles expand and collapse, causing them to pop in a process called cavitation.

5 GAS RELEASE
Cavitation causes the trapped gas to be released from the fluid, vibrating the joint and causing a cracking sound.



No link has been found between cracking your knuckles and developing arthritis

CRACKING KNUCKLES CAUSES ARTHRITIS

MYTH While cracking your knuckles might aggravate the people around you, it's not going to increase the likelihood of you developing arthritis. The sound of a 'crack' or 'pop' following a tug of your fingers is caused by air escaping the synovial fluid that lubricates the fingers' joints. Once the bubbles have popped, it takes a while for them to accumulate, hence why you can't crack your knuckles again straight away. However, it's long been misunderstood that cracking your knuckles can in some way lead to the development of arthritis. The myth's debunking comes from a letter written to the editor of the journal *Arthritis & Rheumatology* by Dr Donald Unger in 1998, who stated that after cracking his left hand twice a day for 50 years and leaving his right hand alone, there was no difference between the two and neither had developed arthritis. While arthritis might not be on the cards, continually cracking your knuckles isn't completely harmless and can lead to ligament injuries, or in extreme cases dislocation of the fingers.

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