- Stress management



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HEALTH

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SIMMER DOWN



MY JAW HURTS. BIG DEAL, RIGHT? Right…at least at first: It starts with a looming deadline or a tiff with my spouse, but tension leads to jaw clenching and then pain. Soon chewing hurts, so my blood sugar drops and my head starts to ache. I cancel plans to exercise or see a friend, and my mood goes south fast. A good night's sleep is impossible. I toss and turn and clench my jaw some more, then start it all again tomorrow.

Even the tiniest seed of stress can quickly snowball into debilitating symptoms. Not anxious or irritable or depressed (though it can do that too). I mean physically ill in the whole body—

Eight compelling reasons your body wants you to dial back the stress in your life

BY *Rosemary Counter*

from dead stem cells causing prematurely grey hairs down to reduced blood flow in your toes (seriously: "foot tingling" is common before and after a panic attack).

If you need a reason to take a breath, here are eight ways stress could be taking a toll on your body right now.

YOUR BRAIN: Firstly, let's define stress. "Stress is a state of worry caused by an external trigger," says Krystal Lewis, a Maryland-based clinical psychologist at the National Institute of Mental Health. It can be short-term and acute (like speeding out the door to get to work on time) or long-term and chronic (like a busy career).

"WHATEVER IS HAPPENING TO YOU EMOTIONALLY, THE GUT KNOWS IT AND FEELS IT."



Ideally, your stress is acute and you bounce back as soon as it stops. In reality, if you're like three-quarters of Americans who report that stress has negatively affected their lives, your stress is likely chronic.

Either way, your brain's amygdala jumps into high alert, causing the hypothalamus to release a chemical rush of cortisol, adrenaline and norepinephrine. Hundreds of thousands of years ago, that might have helped you outrun a sabre-toothed tiger. It's less helpful today, when you're having the same tiger-sized response to being late.

"Whatever it is, because you're in a situation you can't control or manage, your brain is releasing a flood of hormones to help you deal," says Lewis. These hormones can destroy neurons, particularly newly formed ones, leading to brain atrophy, shrinkage or damage to the prefrontal cortex—an area of the brain that's essential for cognitive function, focus and memory-making.

YOUR HEAD, JAW AND SHOULDERS: The first place you might actually *feel* stress settle in is what experts call the "tension triangle." "When you're stressed and your body is in active fight-or-flight mode, your muscles tense up to prepare to protect you," says Lewis.

Stay too long in that state—like holding yourself in a plank at the gym—and soon you'll feel muscle fatigue and strain. Unconscious clenching of the jaw can lead to or exacerbate teeth grinding, temporomandibular joint (or TMJ) disorder or an awful-sounding "globus sensation" that makes it difficult and uncomfortable to swallow.

And have you noticed an unfortunately timed Friday night headache after a hard week? That's because as your stress hormones from the week plummet, blood vessels dilate (a.k.a. "vasodilation," long associated with migraines) and you're now in headachetown.

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YOUR GUT: Stress feels "gut-wrenching" or "stomach-churning" because the brain and gut are so intrinsically linked that scientists have a name for it: the mind-gut connection. It refers to the millions of neurons trading messages along the vagus nerve (a thick cable running from brain to gut).

"Whatever is happening to you emotionally, the gut knows it and feels it," says Dr Emeran Mayer, a gastroenterologist and author of *The Mind-Gut Connection*. "The gut is the habitat of microbes, and anything that changes the habitat affects the microbes, which have to adapt." Throwing them out of balance can wreak havoc on things like your digestion and immunity.

In addition, stress can cause changes in secretions of fluid, the time it takes for food to move through you, and intestinal permeability, called leakiness, where potentially toxic molecules from undigested food seep through the intestinal lining into the body and bloodstream. The body reacts to the misplaced molecules as it does all foreign invaders, explains Dr Mayer, via low-grade immune system inflammation.

Meanwhile, stress increases acid production in, and slows the emptying of, the stomach, leading to acid reflux (heartburn) or irritable bowel syndrome (IBS). And any gastro pain you do have will actually hurt *more*: "When you're stressed, all your sensory nerves go up in sensitivity," says Dr Mayer.

YOUR HEART: When it comes to the heart, short-term stress hogs all the attention. The very romantic-sounding "broken heart sydrome" (a.k.a. stress cardiomyopathy) can happen when a person is under acute stress, be it emotional (as in grief or fear) or physical (such as a high fever or a seizure).

In some of these cases, a sudden release of hormones such as adrenaline may narrow the small arteries in the heart, decreasing blood flow to the organ temporarily. "You might have palpitations, hyperventilate or even faint if you're not getting enough oxygen," says Patrice Lindsay, a director at Canada's Heart and Stroke Foundation.

The effects of short-term stress are immediate and palpable, sure, but



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there's a reason that stealthier chronic stress is dubbed "the silent killer." "Stress wreaks all kinds of havoc on your heart," says Lindsay. Among them, increased heart rate, arrhythmias (irregular heartbeat) and excessive vasoconstriction—when blood vessels constrict, the opposite of vasodilation and the cause of those aforementioned tingly toes.

The largest effect, however, is this: Living in a stressed state all the time raises your blood pressure—the top risk factor for heart disease and stroke. One in four adults worldwide has hypertension, which stiffens and damages arteries, decreases blood and oxygen flow, and increases the risk of blood clots.

YOUR LUNGS: Cursed with seemingly endless colds every winter? A possible cause is unchecked stress levels sapping your body's resources. "Spiked cortisol dampens your immune system so it's less powerful in the fight against the bugs that cause cold and flu," says physiologist Laura Ginesi, fellow at the United Kingdom's International Stress Management Association.

Among many complex interactions between stress and the immune system is this double whammy: Stress reduces lymphocytes, your army of white blood cells often called "natural killers," forcing those you *do* have to work harder amidst any chronic inflammation that's already draining the immune system.

YOUR SKIN: If you've ever blushed with embarrassment or broken into a sweat during an exam, you know that the epidermis, your body's biggest organ, reacts to stress-induced cortisol almost instantly.

"Short-term stress, like feeling anxious before a presentation, can cause temporary problems like flushing, itching and sweating," says Dr Alia Ahmed,

"YOU CAN COUNTERACT ALL OF THIS WITH SIMPLE TRICKS TO LOWER YOUR STRESS."



a U.K.-based psychodermatologist who specializes in the interaction of mind and skin. Cortisol also drives sebum (oil) production, which is why you might break out the night before your wedding. All those will pass, thankfully, but not so the long-term effects.

"Stress drives inflammation, which is implicated in aggravating existing conditions like eczema, psoriasis and rosacea," says Dr Ahmed. Even people with crystal-clear complexions, however, can suffer from dry, scaly and itchy skin when they are stressed. As cortisol levels increase, collagen levels decrease, causing lines, wrinkles, pigmentation, signs of premature aging and dull skin.

Furthermore, stressed-out people

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sleep less, eat worse and are often dehydrated—all factors that take a toll on your skin.

YOUR REPRODUCTIVE SYSTEM: Ever charge through your front door after an awful day eager for romance? Probably literally never. "Imagine holding a fist all day, and then at 8 p.m., unclenching to grab a fork," says Dr Uchenna Ossai, an Austin, Texas-based physical therapist and sex educator. "Your hand won't feel good, and the same is true of your body."

Chronically high cortisol levels have demonstrable effects on sex hormones. For women, the hypothalamus, which normally tells the pituitary gland to produce menstruation-causing estrogen and progesterone, is instead too busy managing cortisol. This can cause irregular or missed periods, decreased ovulation and reduced fertility.

For men, chronically high stress levels inhibit testosterone production, which can cause lowered sperm count, erectile dysfunction and impotence.

YOUR MUSCLES AND JOINTS: Sore backs are common during stress, of course, but arms, legs, hands and feet may also feel the burden. How so, scientifically?

"Inflammation brings blood to the area to clear up any damage or debris," says Ginesi. When your brain senses pain, whether because you've sliced your thumb or keep clenching your jaw, it works to repair the damage. "Stress makes neutrophils—white blood cells that are part of the inflammatory response—more active in order to heal tissue." As with that bleeding thumb, this can trigger nerve impulses that may lead to physical discomfort. "Inflammation causes redness, soreness, swelling and pain," Ginesi says.

Chronic inflammation can feel like joint stiffness, tendonitis, or aches and pains. Left untreated, it can lead to irreversible scarring (fibrosis), DNA damage and, because it affects the way cells grow and divide, mutations that cause tumours or cancer.

That stress can kill is a terrifying thought, admittedly, unless you turn it upside down: "You can counteract all of this with some simple tricks to lower your experience of stress," says Ginesi.

For me, that's yoga classes, meditating for 10 minutes in the morning and a monthly massage. For you, it could be something even easier: Studies prove that just closing your eyes and breathing deeply can help reduce and regulate your cortisol level—wherever you are, right now and for free. R

Seize the Moment

Begin doing what you want to do now. We are not living in eternity. We have only this moment, sparkling like a star in our hand ... Let us use it before it is too late.

MARIE BEYNON RAY, AUTHOR

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