



FINDING BALANCE

Cortisol is a helpful hormone—until it goes haywire. Bringing it back to its natural rhythm might just be a magic bullet for your health.

BY MAGGIE PUNIEWSKA

IT'S KNOWN AS the stress hormone—because it rises when you're on edge and can cause harm if its levels creep off track—but cortisol isn't always a bad guy. It does so much more than trigger the fight-or-flight response, says Rocío Salas-Whalen, MD, an endocrinologist at New York Endocrinology and clinical instructor at NYU Langone Health. "Cortisol is responsible for carrying out many vital processes in the body every day. We wouldn't be alive without it."

The key to living *well* is keeping the hormone in check: "You want your cortisol to follow a certain pattern—it should be high in the morning and dip at night. And it's even helpful for cortisol to spike when you're under acute stress," says Dr. Salas-Whalen. "What you don't want is your cortisol to stay high for too long because that's when you start seeing health problems."

More Friend Than Foe

When you're in a good place physically and mentally, cortisol rises and falls in sync with your natural circadian rhythm: In the late-night hours, cortisol will sink to its lowest point (around the same time your melatonin level peaks)—and then ascend, cresting around 8 a.m. That escalation is part of the chemical shift that gets us going in the morning, says Elizabeth Bradley, MD, medical director of the Center for Functional Medicine at the Cleveland Clinic. "Cortisol stimulates the liver to convert fat into glucose, which gives you energy," she explains. (Check out the graph depicting cortisol's 24-hour cycle on page 40.)

Throughout the day, the hormone does several jobs. It helps regulate

blood pressure, assists in the formation of new memories, and plays a role in digestion, managing how your body uses protein, fat, and carbs extracted from the foods you eat. Cortisol is even involved in curbing inflammation, says Dr. Salas-Whalen: “It works with the immune system to prevent the release of inflammatory substances.”

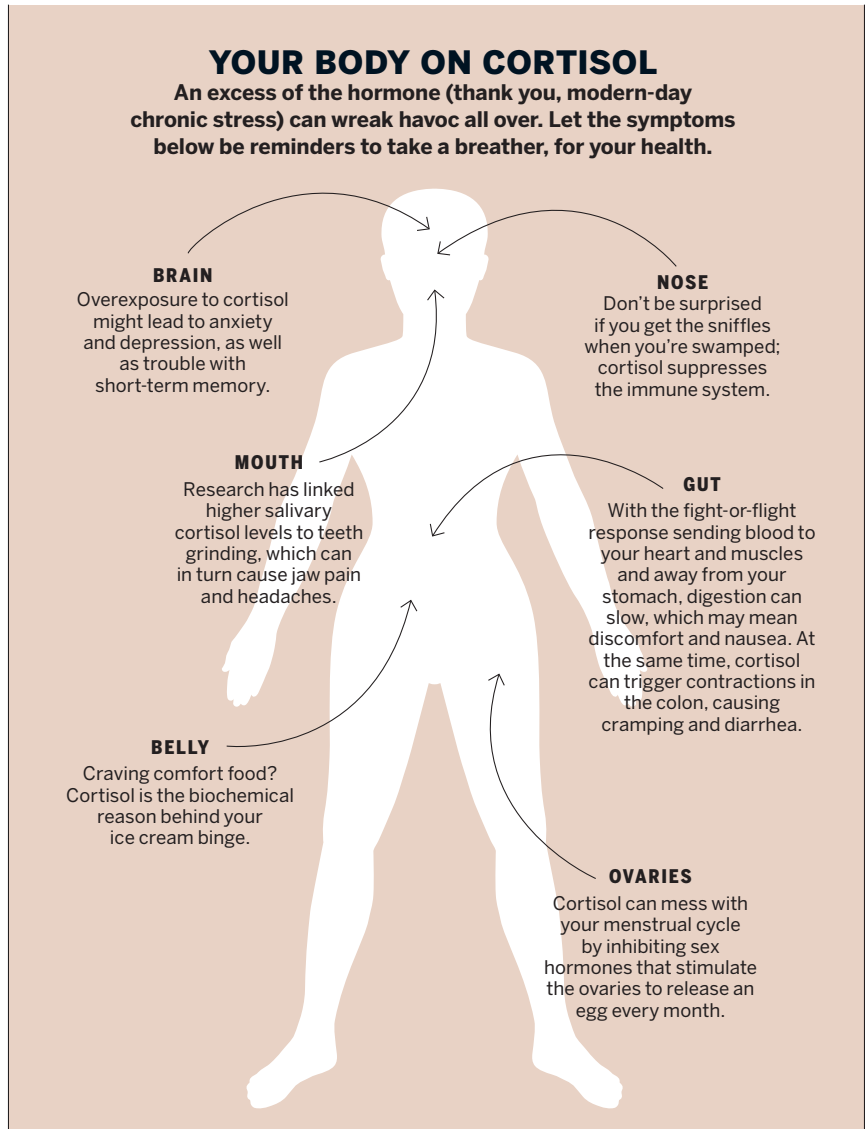
Your brain keeps tabs on how much of the hormone is circulating in your bloodstream at any given time. As your body’s need for cortisol fluctuates, your brain sends signals to your adrenal glands—the pair of little organs deep in your abdomen that manufacture the hormone—to either slow down production or speed it up.

The Stress Response

When your body perceives any sort of threat, the adrenals get cranking. They release both cortisol and adrenaline, which boost your heart rate and blood pressure, tense up your muscles, and sharpen your focus. All of that is meant to help you react to the situation at hand, either by “fighting” or “fleeing.” (You may have heard of or experienced a third reaction to stress known as “freezing.” Research suggests this type of self-paralysis is often accompanied by intense fear, such as during a traumatic event.) In most cases, stress triggers a burst of energy, courtesy of the famous “adrenaline rush,” followed by cortisol’s glucose-generating effects in the liver, says Salila Kurra, MD, codirector of the Columbia University Medical Center Adrenal Center in New York City. As she explains it, “If you see a bear, adrenaline rises so you can start running away, and cortisol rises so you can keep running away.”

While our physiological reaction to stress would have been very helpful in the age of saber-toothed tigers, today it is typically an overreaction to less lethal threats, like rush-hour traffic or the tyrannical co-op board president. But the rise in cortisol does help you to learn from nerve-racking ordeals, allowing you to handle them better in the future.

“We want cortisol to go up for a little bit during stress and then come down again because that helps encode bits of information in the



brain,” explains Rajita Sinha, PhD, professor and director of the Yale Interdisciplinary Stress Center in New Haven, Connecticut. “The idea is that the hormone helps us record and recall aspects of stressful events. That way you can adapt your reaction if you encounter the same situation again.” Imagine that you totally panic before winging a toast, for example, and then your speech goes beautifully. Cortisol is part of the brain’s arsenal that makes you remember the ensuing sense of relief so you don’t have to go through that kind of angst again. Of course, if you bomb the toast, cortisol will play a role in your memory of that experience, too, and hopefully you’ll at least jot down some notes before your next public-speaking endeavor.

When You're Off-Kilter

Once a threat has passed, cortisol should drop back to its normal level. “Our bodies are pretty resilient,” says Dr. Bradley. “They are designed to bounce back from stress.” But if you are constantly facing trouble—say, because you work in a toxic office environment, or you’re caring for a sick parent, or you’re just leading a high-octane life—your cortisol levels can remain elevated.

“You might almost wish there was something you could run away from,” says Dr. Sinha. (Escape the threat, and your body could return to homeostasis.) “But our problems don’t always have easy answers, and stress may stick around for a long time.”

When that happens, physical symptoms, such as digestive woes and

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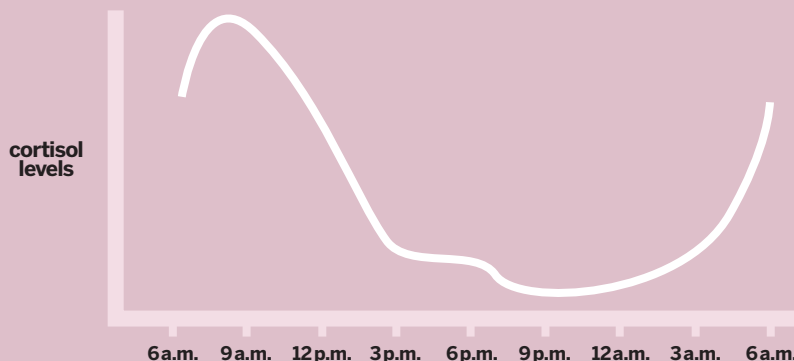
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The 24-Hour Cycle

Ideally, your cortisol level should climb and fall in a pattern that repeats daily—a cadence that helps you rest at night and rise and shine in the a.m.



irregular periods, can crop up. That's because the body is prioritizing its stress response, and anything that's nonessential to immediate survival goes on the back burner—sleep included. “When you're frazzled, your cortisol levels don't dip at nighttime like they're supposed to,” says Dr. Bradley. “You're essentially too energized to fall asleep.”

Excess cortisol can send inflammation into overdrive as well, as immune cells become desensitized to the hormone's effects. This is concerning because chronic inflammation has been linked to a whole host of diseases, including diabetes, Alzheimer's, and cancer.

Another unfortunate consequence of chronic stress: weight gain. It's a complicated link (involving metabolism rate, lack of exercise, and other factors), but cortisol is partly to blame because it stokes your appetite. “When cortisol is high, your insulin levels also spike, and that may be one reason why you crave sugary, fatty foods,” says Dr. Salas-Whelan.

Over time, stress could impact brain function, too. A study done at Harvard Medical School and published last year found that people with elevated cortisol performed worse on memory tests. They also had more damage in parts of the brain responsible for moving information around—and a smaller cerebellum, the area that manages thoughts, emotions, speech, and muscle functions.

The Case for Self-Care

Take steps to control your stress—and your cortisol levels. It's the little things you do every day that make a difference.

Allow yourself to prioritize replenishing activities like meditation and yoga, says Dr. Bradley. “Not only will they help you feel better in the moment but they'll also act like a protective shield against future stress.”

If you're feeling wound up, you might want to temporarily switch from high-intensity workouts to a gentler fitness routine like walking or swimming, Dr. Bradley adds. Exercise bumps up your cortisol, and although that's normal, it's not always calming if you're already stressed.

For quick relief, try getting a nature fix. Studies have found that spending as little as 20 minutes in the woods can lower cortisol. A walk in a park or even sitting in your backyard should do the trick.

And never underestimate the power of LOLZ. Rescue a bad day by switching on a comedy or calling your funniest friend. Laughter is thought to stop the release of cortisol and trigger stress-busting chemicals.

Finally, snack on sunflower seeds, bananas, or almonds, or have a bowl of oats for breakfast. These foods are rich in magnesium, a mineral that is depleted by stress but is essential for getting high-quality, restorative (cortisol-stabilizing) sleep. ✕