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What Is Cortisol Face, and How Can You Treat It?

Analysis by Dr. Joseph Mercola | October 24, 2024

STORY AT-A-GLANCE

- "Cortisol face" is trending on social media, but it oversimplifies the serious health risks associated with chronically elevated cortisol levels, including diabetes, high blood pressure and accelerated aging
- Cortisol's primary function is maintaining blood glucose levels. Prolonged elevation, whether from stress, excessive exercise or low-carb diets, negatively impacts overall health and longevity
- A study found women with acne had higher levels of cortisol and other hormones, highlighting the connection between stress, hormonal imbalances and skin health
- Moon face, a visible sign of cortisol excess, is linked to an increased risk of glucocorticoid-induced diabetes and high blood pressure. It often precedes or coincides with these conditions
- Increasing healthy carbohydrate intake helps lower cortisol levels. For those with compromised gut health, a gradual approach starting with dextrose may help restore gut and mitochondrial function. Progesterone also has anti-cortisol effects

You may have noticed the term "cortisol face" trending across social media platforms. Influencers claim facial puffiness and swelling are telltale signs of elevated cortisol levels, often starting their videos with catchy phrases like, "You're not ugly, you just have cortisol face."[1]

While this trend has brought attention to cortisol, it barely scratches the surface of the real health concerns associated with chronically high levels of this stress hormone. Maria Olenick, associate professor at Texas A&M University School of Nursing, cautions, "Although facial changes can occur with high cortisol, focusing solely on appearance trivializes the serious health risks associated with prolonged cortisol elevation."[2]

This trend serves as a starting point for raising awareness about the wide-ranging effects of stress on your body and the importance of maintaining balanced cortisol levels for overall health.

Understanding the 'Cortisol Face' Phenomenon

The concept of cortisol face isn't entirely baseless, but it's not as straightforward as social media makes it seem. Skin effects commonly associated with cortisol face on social media platforms include:

Facial puffiness — This is the most commonly mentioned symptom, with users describing a generally swollen or bloated appearance of their face.

Under-eye bags or swelling — Many claim that high cortisol leads to more prominent or puffy under-eye areas.

Facial rounding — Some users describe a rounder or "moon-like" face shape, which they attribute to cortisol-related fluid retention or fat redistribution.

Skin dullness — A lack of skin radiance or glow is often mentioned as part of the cortisol face appearance.

Increased acne or breakouts — Users sometimes associate stress-related skin issues with the concept of "cortisol face."

Accelerated aging signs — Some claim that high cortisol levels lead to more visible fine lines or wrinkles.

Redness or flushing — Increased facial redness is occasionally mentioned as a symptom.

Cortisol can indeed affect your appearance when levels are consistently high. However, it's just one piece of a complex puzzle.

Cortisol Is More Than a ‘Stress Hormone’

Cortisol, commonly known as the "stress hormone," plays a far more vital role in your body than its nickname suggests. Its primary function is to serve as a critical safeguard, preventing your blood glucose from dropping to dangerous levels. This protects you from the life-threatening risk of a hypoglycemic coma.[3]

Gaining a deeper understanding of cortisol's true purpose changed my approach to low-carb diets. While the hormone's mechanism is protective in the short term, persistent elevation of cortisol levels has adverse effects on your health. The name "cortisol" itself provides insight into its nature and origin.

As a glucocorticoid steroid hormone, it's linked to glucose metabolism and is produced in your adrenal cortex. When your blood sugar levels decline and your liver's glycogen reserves are exhausted, cortisol takes action. It initiates the breakdown of lean muscle, bone and even brain tissue into amino acids. Your liver then transforms these amino acids into glucose through a process called gluconeogenesis.

This is why prolonged adherence to a low-carb diet is not optimal for everyone. Although both low-carb eating and fasting are effective short-term strategies for individuals grappling with weight issues and metabolic inflexibility, it's essential to reintegrate carbohydrates once metabolic flexibility is reestablished. Failure to do so may result in diminished metabolic health and compromised mitochondrial function.

Acne: The Hormonal Culprits Behind Your Breakouts

Acne is one part of the cortisol face phenomenon backed by science. A study conducted at the Pomeranian Medical University in Szczecin, Poland, examined the hormonal profiles of young women with acne vulgaris, a common chronic inflammatory skin condition affecting about 9.4% of the world's population.[4]

The researchers found that women with acne had significantly higher levels of several hormones compared to those without acne, including testosterone, androstenedione and, notably, cortisol. This connection between cortisol and acne severity isn't just a coincidence. Your skin is a peripheral endocrine gland, capable of producing and responding to various hormones.

When you're stressed, your body releases more cortisol, which increases sebum production in your skin. This excess oil creates an ideal environment for acne-causing bacteria to thrive, leading to more frequent and severe breakouts.

The fact is, acne isn't just a superficial issue — it's deeply connected to your body's stress response system. Researchers observed that women with acne had higher levels of adrenocorticotropic hormone (ACTH) and cortisol compared to those without acne. This suggests that your body's stress response might be working overtime, even if you don't feel particularly stressed.

But it's not just cortisol at play. The study also found elevated levels of prolactin in women with acne. Prolactin is another hormone that increases during times of stress, and in high concentrations, it stimulates the production of androgens — hormones known to increase sebum production and contribute to acne.

These hormonal imbalances create a vicious cycle. Stress leads to increased cortisol and prolactin, which then contribute to acne. The appearance of acne causes more stress and self-consciousness, leading to even higher levels of stress hormones. Breaking this cycle isn't just about treating acne on the surface — it's about addressing the underlying hormonal imbalances and stress responses in your body.

Moon Face Is a Well-Known Side Effect of Cortisol Excess

While cortisol face has earned buzzword status, moon face is a term for a serious side effect of corticosteroid use that many people experience. A study conducted in Saudi Arabia revealed that moon face is one of the most recognizable corticosteroid side effects — and a telltale sign of elevated cortisol levels in your body.[5]

It's characterized by a rounded, puffy appearance of your face, often resembling a full moon. The study found that 61.1% of participants were aware of this side effect. If you're taking corticosteroids or know someone who is, it's crucial to be aware of this potential change in facial appearance. However, moon face is just the tip of the iceberg when it comes to the visible effects of elevated cortisol on your body.

For instance, 61.2% of participants also recognized truncal (central) obesity as a side effect. This means that in addition to facial changes, you might notice an increase in fat deposits around your midsection. The study also found that 54.4% of participants were aware that rounding of the upper back, often referred to as a "buffalo hump," is possible. This change in body shape is another visible sign of cortisol's impact on fat distribution.

Further, 55.2% of respondents knew that swelling in the lower legs is another side effect, which can further alter your body's appearance. The study also highlighted several additional skin-related side effects, including skin thinning, which affected 24.3% of users.[6] This thinning makes your skin more fragile and susceptible to damage.

Moreover, 17.3% of steroid users reported increased bruising, while 14.4% noticed slower wound healing. These effects are particularly concerning as they impact your skin's ability to protect you from external threats and recover from injuries.

The study also found that a significant number of participants were aware of the potential for loss of skin color (53.1%) and thinning or depression of their skin (55.6%) as side effects of topical corticosteroid use.

Moon Face Is Linked to Diabetes and High Blood Pressure

The visible changes that occur aren't just cosmetic concerns — they’re indicators of more serious underlying health issues related to cortisol excess. A study published in

the Journal of the Endocrine Society revealed that patients who developed moon-like facies (MLF), or moon face, were at increased risk of developing glucocorticoid-induced diabetes, high blood pressure and body image disturbances.[7]

Specifically, patients who developed MLF had a significantly higher incidence of glucocorticoid-induced diabetes (48% versus 9.1%) and high blood pressure (36.8% versus 7.7%) compared to those without MLF. Even more concerning, MLF an independent risk factor for developing glucocorticoid-induced diabetes, even after adjusting for other known risk factors like age and dosage.

MLF often preceded or occurred simultaneously with the onset of diabetes, suggesting it's an early indicator of metabolic problems. Patients with MLF also experienced significant body image disturbances, scoring lower on body image assessments compared to those without MLF. This psychological distress affects quality of life.

Moon face is also one of the hallmark signs of Cushing's syndrome, which occurs when your body is exposed to high levels of cortisol for a long period of time.

Chronically high cortisol levels also damage brain tissue, contributing to conditions like dementia and depression.[8] It may also accelerate aging[9] — a factor often overlooked in longevity research — because high cortisol impedes the building of healthy tissues, which is crucial for healthy aging. Furthermore, it stimulates the release of neurotransmitters that trigger food cravings,[10] leading to unhealthy eating habits.

This dual nature of cortisol — initially anti-inflammatory but proinflammatory when chronically elevated — underscores the importance of maintaining balanced levels. Whether triggered by chronic stress, **excessive endurance exercise**, a **prolonged low-carb diet** or even **salt restriction**, persistently high cortisol is not conducive to long-term health and longevity.

Increase Your Healthy Carb Intake to Lower Your Cortisol Level

In addition to stress management and adequate sleep, **consuming more carbs** is recommended for lowering cortisol. But it's important to be mindful of the type of carbs

you consume.

Steer clear of processed foods and snacks in your diet. These junk carbohydrates often contain ingredients like **linoleic acid** and high-fructose corn syrup (HFCS) that can wreak havoc on your gut microbiome and promote endotoxin production. This, in turn, significantly contributes to increased cortisol levels and inflammation in your body.

Beneficial bacteria in your gut are essential for digesting the healthy fibers found in nutritious carbohydrates like fruits, vegetables and grains. However, many people do not have a healthy concentration of beneficial gut bacteria. When this balance is disrupted, consuming these otherwise healthy foods makes you feel worse. This is because of an overgrowth of pathogenic bacteria that produce toxic endotoxins, which severely impair your mitochondrial function.

If you're finding it challenging to tolerate healthy carbohydrates, consider trying pure glucose, also known as dextrose, for a few weeks. This approach is particularly beneficial if your digestive system is severely compromised and you're struggling to consume any carbohydrates at all.

A high-dextrose diet gives your gut a chance to heal, conserving more cellular energy and gradually allowing you to reintroduce a wider variety of carbohydrates into your diet. This process helps restore your mitochondrial function over time.

For those with severely compromised gut health, start with dextrose water, sipping it slowly throughout the day. As your tolerance improves, progress to fruit juice with pulp or whole fruits. Eventually, as your gut health continues to improve, you'll be able to incorporate more fiber-rich fruits, vegetables and starches into your diet.

This helps prevent your body from producing excessive cortisol. Additionally, you might want to consider progesterone. Its natural anti-cortisol and anti-adrenaline properties make it a valuable ally in the fight against chronic stress.

How to Use Progesterone

Before you consider using progesterone, it is important to understand that it is not a magic bullet, and that you get the most benefit by implementing a Bioenergetic diet approach that allows you to effectively burn glucose as your primary fuel without backing up electrons in your mitochondria that reduces your energy production. My new book, “Your Guide to Cellular Health: Unlocking the Science of Longevity and Joy” comes out very soon and covers this process in great detail.

Once you have dialed in your diet, an effective strategy that can help counteract estrogen excess is to take transmucosal progesterone (i.e., applied to your gums, not oral or transdermal), which is a natural estrogen antagonist. Progesterone is one of only four hormones I believe many adults can benefit from. (The other three are thyroid hormone T3, DHEA and pregnenolone.)

I do not recommend transdermal progesterone, as your skin expresses high levels of 5-alpha reductase enzyme, which causes a significant portion of the progesterone you're taking to be irreversibly converted primarily into allopregnanolone and cannot be converted back into progesterone.

Ideal Way to Administer Progesterone

Please note that when progesterone is used transmucosally on your gums as I advise, the FDA believes that somehow converts it into a drug and prohibits any company from advising that on its label. This is why companies like Health Natura promotes their progesterone products as "topical."

However, please understand that it is perfectly legal for any physician to recommend an off-label indication for a drug to their patient. In this case, progesterone is a natural hormone and not a drug and is very safe even in high doses. This is unlike synthetic progesterone called progestins that are used by drug companies, but frequently, and incorrectly, referred.

Dr. Ray Peat has done the seminal work in progesterone and probably was the world's greatest expert on progesterone. He wrote his Ph.D. on estrogen in 1982 and spent most

of his professional career documenting the need to counteract the dangers of excess estrogen with low LA diets and transmucosal progesterone supplementation.

He determined that most solvents do not dissolve progesterone well and discovered that vitamin E is the best solvent to optimally provide progesterone in your tissue. Vitamin E also protects you against damage from LA. You just need to be very careful about which vitamin E you use as most supplemental vitamin E on the market is worse than worthless and will cause you harm not benefit.

It is imperative to avoid using any synthetic vitamin E (alpha tocopherol acetate — the acetate indicates that it's synthetic). Natural vitamin E will be labeled "d alpha tocopherol." This is the pure D isomer, which is what your body can use.

There are also other vitamin E isomers, and you want the complete spectrum of tocopherols and tocotrienols, specifically the beta, gamma, and delta types, in the effective D isomer. As an example of an ideal vitamin E, you can look at the label on our vitamin E in our store. You can use any brand that has a similar label.

You can purchase pharmaceutical grade bioidentical progesterone as Progesterone Powder, Bioidentical Micronized Powder, 10 grams for about $40 on many online stores like Amazon. That is nearly a year's supply, depending on the dose you choose.

However, you will need to purchase some small stainless steel measuring spoons as you will need a 1/64 tsp, which is 25 mg and a 1/32 tsp, which is 50 mg. A normal dose is typically 25-50 mg and is taken 30 minutes before bed, as it has an anti-cortisol function and will increase GABA levels for a good night's sleep.

Unfortunately, this vendor frequently runs out of product, and if that’s the case, then you can use **Simply Progesterone by Health Natura**. It’s premixed with vitamin E and MCT oil. Again, while Health Natura states that its product is for “topical use only,” I recommend applying it transmucosally, by rubbing it on your gums.

If you are a menstruating woman, you should take the progesterone during the luteal phase or the last half of your cycle, which can be determined by starting 10 days after

the first day of your period and stopping the progesterone when your period starts.

If you are a male or non-menstruating woman, you can take the progesterone every day for four to six months and then cycle off for one week. The best time of day to take progesterone is 30 minutes before bed as it has an anti-cortisol function and will increase GABA levels for a good night's sleep.

This is what I have been personally doing for over a year with very good results. I am a physician so do not have any problems doing this. If you aren't a physician, you should consult one before using this therapy, as transmucosal progesterone therapy requires a doctor's prescription.

Sources and References

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