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REPORT

Natural Methods to Suppress Destructive Cortisol

By Susan Goldschein

One way **stress** inflicts its deadly damage is by raising **cortisol** levels.¹

The result is *accelerated aging* that wreaks havoc throughout the body.

Increased cortisol levels not only age our internal organs, but make us appear **older** than our actual years.²

People with elevated levels of cortisol have higher **mortality** rates and face an increased risk for cardiovascular disease, diabetes, metabolic syndrome, and neurodegenerative disorders.³⁻⁶

Too often, physicians prescribe a range of addicting pharmaceuticals in an effort to reduce a patient's stress and anxiety. This provides a temporary fix, but tolerance to the drugs negates their effectiveness over time.

Fortunately, researchers have identified several natural compounds that have been shown in **humans** to produce a noticeable reduction in **cortisol** levels.

These natural compounds can help reduce the toxic response to stress and anxiety that underlies so many of today's chronic health problems.

Life-Threatening Dangers of High Cortisol



Cortisol is a **glucocorticoid** hormone that is essential for life.

However, in the presence of chronic stress, cortisol surges to unhealthy high levels, producing a major problem that threatens health and longevity.

Most disturbingly, recent studies have shown that chronically elevated cortisol levels are strongly associated with increased risks of dying. For example, one study showed that men with high **cortisol** levels were **63%**, and women **82%**, more likely to die than those with lower levels.⁷

The risks of dying specifically from cardiovascular disease are even more pronounced in those with high cortisol: one study found a **five-fold** increased risk of death, both among those with known cardiovascular disease and with people previously free of risk factors at baseline.³

High cortisol levels create havoc through the body's systems and are associated with a long list of age-accelerating diseases including obesity, hypertension, type II diabetes, and cardiovascular risk, as well as increased risk of infection, osteoporosis, depression, and even neurodegenerative diseases like Alzheimer's.^{2,3,7-12}

Another study found that higher cortisol levels are associated with higher **perceived age**, that is, age as assessed from a facial photograph. People with higher levels of cortisol look older because they are experiencing accelerated aging that is beginning to show up in their facial features.² Perceived age is well known to be associated with illness and the risk of death.²

There is even submicroscopic evidence that cortisol accelerates aging. Chronically high cortisol levels are associated with shortening of **telomeres**, the "fuse-like" stretches of DNA that cap the ends of our chromosomes.^{13,14} As telomeres shorten, the cells that bear them get closer and closer to the ends of their useful lives, eventually aging the tissues and organs in which they dwell.

Stress—emotional, psychological, physical, or biochemical—is detrimental in part because it raises levels of cortisol. Reducing stress is always a good idea, but much of the stress in our daily lives is unavoidable, and sometimes efforts to avoid it bring on more stress. That's why it is so important to reduce the cortisol elevations induced by stress, even when we cannot eliminate the stress itself.

And that is what has scientists so excited about natural compounds capable of lowering cortisol levels. Let's look at those now.

Benefits of Lowering Cortisol

- While stress is unavoidable, it is now possible to do something about the resulting dangerous elevations in circulating cortisol levels.
- Cortisol is a stress-response hormone that is beneficial over short periods, but chronic stress leads to chronically high cortisol levels, which are dangerous.
- High cortisol produces all of the manifestations of overmedication with steroids: central obesity, rising blood sugar, hypertension, and lipid disturbances, while also softening bones and promoting neurodegeneration.
- A lychee-green tea blend provides highly bioavailable polyphenols with potent cortisol-lowering properties, as shown in multiple human studies.
- Extracts from the bark of the Magnolia and Phellodendron trees have been shown in combination to lower cortisol and reduce manifestations of stress.
- These compounds, used in combination, offer safe, effective reductions in circulating cortisol levels, thereby helping to promote improved metabolic health and supporting healthy aging.



Lychee Polyphenols Lower Cortisol Levels

The **lychee fruit** has been grown in China since at least the 11th century.¹⁵ It is rich in **polyphenols** that promote a variety of biological activities, most notably the ability to fight oxidative stress, inflammation and lower **cortisol** levels.¹⁶

Most lychee polyphenol products available in stores contain *long-chain polyphenols* which are not easily *absorbed* in the intestinal tract.

Using a proprietary process, scientists are now able to reduce the polyphenol size through steps that include the addition of green tea catechins.¹⁷ This allows the new molecule to be stable and highly bioavailable. When researchers tested the bioavailability of the lychee-green tea blend in humans, they found that the polyphenol content in blood was **3 times higher** in comparison to ordinary lychee extract alone.¹⁸

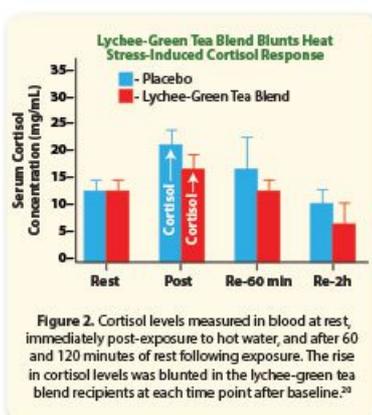
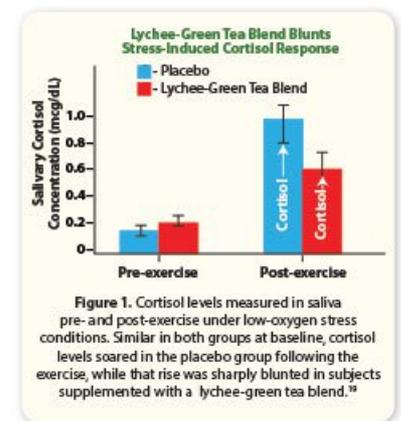
Human studies show that the **lychee-green tea** blend can reduce circulating cortisol levels, and can also oppose other physiological effects of stress.

In one study, scientists enrolled 19 sedentary, but otherwise healthy, male volunteers.¹⁶ Subjects were randomly assigned to receive either a placebo or **100 mg** of the new **lychee-green tea** blend in water each day for 4 weeks. Subjects underwent blood tests for cortisol, markers of inflammation, and other basic evaluations, before and after the supplementation period.

At the end of treatment, lychee-green tea blend recipients, but not placebo users, had significant decreases in **cortisol** level, as well as the inflammatory cytokines **IL-1beta** and **IL-6**.

Because it is known that exercise raises both cortisol and inflammatory factors, subjects were also tested after **exercise**. The rate of increase in these compounds was significantly reduced in lychee-green tea blend-supplemented subjects, demonstrating that the lychee-green tea blend can suppress stress-induced, as well as baseline, cortisol levels.

That finding was supported by another study in which ten healthy male students were supplemented with **100 mg** of the lychee-green tea blend, twice daily, for ten days prior to performing physical activity conducted under low oxygen conditions to bring out stress.¹⁹



While both groups had similar cortisol levels prior to supplementation, the placebo group's cortisol rose more after the stressful exercise, while the rise in the lychee and green tea blend-supplemented group was significantly less pronounced.

A third study demonstrated similar results using a different cortisol-raising stress: hot water. In this study, healthy young men received either a placebo or lychee-green tea blend, **100 mg**, half an hour before immersing their lower legs in hot water for half an hour.²⁰ Again, measurements of cortisol and inflammatory cytokines were made before and after the stress-inducer.

The lychee-green tea blend recipients, compared to placebo subjects, had significantly lower cortisol concentrations, as well as levels of IL-1beta and IL-6, when measured after the heat stress. These effects persisted for up to two hours after the heat stress had ended.

Supplemented men experienced a significantly lower rise in skin and core body

temperatures during the application of heat, indicating improved total body control over the stressful event.

These findings have been further borne out by subsequent studies showing that lychee-green tea blend supplementation prevents heat-induced body temperature elevations, beneficially reduces fluid losses from sweating under heat stress, and prevents stress-induced blunting of immune system responses.²⁹⁻³²

LIFE-SHORTENING IMPACT OF ELEVATED INTERLEUKIN-6

As we age, the age-related decline in immune function not only compromises our ability to fight **infections** and **malignancies** but increases the risk of death.

In youth we are primed with an abundance of **naïve T cells** ready to destroy bacteria, viruses, and cancers. Once this cell performs its job, it then becomes a **memory T cell** that responds only to the same bacteria, virus, etc. This shift in immune cell populations is characterized by the abundance of **memory T cells** that emit **pro-inflammatory** signals that wreak havoc in every organ system.²¹

One of the deadliest of these inflammatory “signals” is a cytokine called **interleukin-6 (IL-6)**.²²

A human study evaluated the impact of **lychee-green tea blend** on **cortisol** and inflammatory markers such as **IL-6**. At the end of the study, researchers found that supplemented individuals had significant reductions in **cortisol** and **IL-6** levels.¹⁶

Higher **IL-6** levels are associated with a **2-fold** increased risk of death.²³ Higher levels are also involved with several degenerative processes, including **frailty**, that so many elderly suffer.²⁴⁻²⁷ It is important to note that a well-known trait of healthy **centenarians** is that they have unusually low levels of **IL-6**.²⁸

Tree Bark Extracts Help Lower Cortisol

Extracts of *Magnolia officinalis* bark have been previously studied for their anti-anxiety effects, but without the troubling side effects characteristic of anti-anxiety medications.³³ An extract from the bark of the Asian tree *Phellodendron amurense*, has been tested in an animal model of stress, and demonstrated significant reductions in stress manifestations without sedation.³³

Human studies of the combination of extracts have demonstrated both their stress-relieving properties and their ability to mitigate stress-induced cortisol elevations. In one such study, researchers enrolled 56 moderately stressed but otherwise healthy men and women.³⁴ Subjects supplemented with **250 mg** of the mixed bark extracts twice daily, or received a placebo, for a 4-week period.

After the supplementation period, **cortisol** levels were **18%** lower in the supplemented group than in the placebo recipients. This reduction in cortisol levels was accompanied by improvements in mood and reductions in stress, depression, anger, and fatigue, all of which could be interpreted as related to the lower cortisol levels.

Two other studies have evaluated the combined bark extract supplement at a dose of **250 mg**, three times daily. In one, conducted in otherwise healthy overweight, premenopausal women, the supplement significantly decreased **anxiety** as measured by a variety of scales and scores.³³ In the other, the placebo group had significant weight gain over 6 weeks, which was prevented in the supplemented subjects.³⁵

In both studies, the supplemented subjects also had reductions in cortisol levels compared with placebo, but the differences did not reach statistical significance, probably because of the relatively small sample size of these studies.



DANGERS OF ELEVATED CORTISOL NOT NEW

The **August 1984** issue of this publication (called **Anti-Aging News**) featured an in-depth report about the age-accelerating effects of elevated **cortisol**.

The article offered little in the way of available approaches to suppress cortisol other than vitamin C, aspirin, and drugs not approved in the United States.

Move forward **33 years** and scientists have uncovered natural approaches to suppress excess blood **cortisol** levels.

This represents a significant advance in neutralizing a deadly factor involved in degenerative aging.

The front cover of the **1984** issue of **Anti-Aging News** describing dangers of **cortisol** appears after the scientific **references** to this article.

Summary



Everyday stress raises and keeps elevated levels of our stress-response hormone, **cortisol**.

Elevated cortisol brings with it components of the deadly metabolic syndrome, as well as additional threats such as immune suppression, osteoporosis, and neurodegeneration.

Now, it is possible to mitigate the impact of **cortisol**, even if we cannot eliminate the stress from our lives.

Lychee-green tea blend and bark extracts from *Magnolia* and *Phellodendron* trees have all been shown to lower cortisol levels in humans.

Lowering chronically-elevated cortisol levels can help mitigate this underlying cause of common disorders associated with aging.

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.

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