

# Slashes Cortisol Levels, Try This if You're Stressed

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✓ Fact Checked

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## STORY AT-A-GLANCE

- › Ashwagandha is a powerful adaptogenic herb, meaning it helps your body manage and adapt to stress by balancing your immune system, metabolism and hormonal systems
- › Withanolides – naturally occurring steroids – in ashwagandha suppress pathways responsible for several inflammation-based illnesses, including arthritis, asthma, hypertension, osteoporosis and cancer
- › Withanolides also have immunomodulating properties, while somniferin, an alkaloid in ashwagandha, promotes relaxation and sound sleep
- › Ashwagandha supports sexual and reproductive health in both men and women. In men, it helps boost testosterone levels, and has been shown to improve semen quality in infertile men
- › In women, ashwagandha's ability to rebalance hormones (including thyroid hormone, estrogen and progesterone) has been shown to improve polycystic ovary syndrome and relieve menopausal symptoms

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Known as a multipurpose herb and "rejuvenator" used in ancient Ayurvedic and Chinese medicine for thousands of years, ashwagandha<sup>1</sup> (*Withania somnifera*) is a plant native to India with a host of bioactive functions.

Ashwagandha is a member of the Solanaceae family along with eggplant and tomato. It bears light green flowers that evolve to bright red fruit and is able to survive extreme temperatures and widely varying altitudes.<sup>2</sup>

In Sanskrit, the word ashwagandha means "odor of a horse." The likeness refers not only to the odor of the plant's root but the essence of strength it's said to deliver. It's a powerful adaptogenic<sup>3</sup> herb, meaning it helps your body manage and adapt to stress<sup>4</sup> by balancing your immune system,<sup>5</sup> metabolism and hormonal systems.<sup>6</sup>

Ashwagandha also has natural pain reliever (analgesic) properties,<sup>7</sup> can help increase physical strength, and its rejuvenating effects can promote general health when used regularly. While some adaptogens are stimulants in disguise, this is not the case with ashwagandha. It can give your morning exercise routine a boost, and when taken prior to bed it can help you get a good night's sleep as well.

## **The Main Bioactive Components in Ashwagandha**

Flavonoids and other compounds are the active ingredients that give ashwagandha its many powerful properties. In one study,<sup>8</sup> bioactive withanolides – naturally occurring steroids – in ashwagandha were identified as agents that suppress pathways responsible for several inflammation-based illnesses, including arthritis, asthma, hypertension, osteoporosis<sup>9</sup> and cancer.

Withanolides in ashwagandha also have immunomodulating properties,<sup>10</sup> described as substances that can either stimulate or suppress your immune system to help fight infections, cancer and other diseases.

One of the alkaloids in ashwagandha, called somniferin, helps promote relaxation and sound sleep. In fact, the botanical name "somnifera" means the herb induces sleep. A study<sup>11</sup> at the University of Tsukuba in Japan also found it relieves related problems such as insomnia and restless leg syndrome.

## **Ashwagandha Eases Stress and Anxiety**

As an adaptogen, ashwagandha is frequently used to support healthy adrenal function, which can be adversely affected by persistent stress, be it physical or psychological. Research shows the root reduces cortisol levels, restores insulin sensitivity and helps to stabilize mood.<sup>12</sup>

In one placebo-controlled clinical trial,<sup>13</sup> volunteers with a history of chronic stress who took 300 milligrams (mg) of ashwagandha twice a day reported significant reductions in stress, and testing revealed their cortisol levels decreased by an average of nearly 28% after 60 days of supplementation.

In another study,<sup>14</sup> patients diagnosed with moderate to severe anxiety who were treated with ashwagandha reported "significantly decreased" symptoms compared to those undergoing more conventional interventions.

A third study<sup>15</sup> found "empirical evidence to support the traditional use of [ashwagandha] to aid in mental process engaging GABAergic signaling." According to the authors:

*"Our results provide evidence indicating that key constituents in [ashwagandha] may have an important role in the development of pharmacological treatments for neurological disorders associated with GABAergic signaling dysfunction such as general anxiety disorders, sleep disturbances, muscle spasms and seizures."*

## **Ashwagandha for Sexual Health and Fertility**

Ashwagandha also supports sexual and reproductive health in both men and women, and may be used as an aid to boost your libido. In men struggling with infertility, ashwagandha has been shown to balance their luteinizing hormone,<sup>16</sup> which controls reproductive organ function in both men and women. Ashwagandha can also help boost testosterone levels in men,<sup>17,18</sup> which can have a beneficial effect on libido and sexual performance.

In one placebo-controlled trial,<sup>19</sup> men between the ages of 18 and 50 were given either a placebo or 300 mg of ashwagandha root extract twice a day in addition to participating in a strength training program. After eight weeks, those taking ashwagandha had greater increases in testosterone, muscle size and strength, compared to those taking a placebo.

It's also been shown to improve the quality of semen in infertile men,<sup>20</sup> in part by inhibiting reactive oxygen species and improving essential metal concentrations, including zinc, iron and copper levels. Other research<sup>21</sup> suggests ashwagandha improves semen quality by regulating important reproductive hormones.

In otherwise healthy women, ashwagandha has been shown to improve arousal, lubrication, orgasm and overall sexual satisfaction.<sup>22</sup> In addition, ashwagandha's ability to rebalance hormones (including thyroid hormone, estrogen and progesterone) has been shown to improve polycystic ovary syndrome<sup>23</sup> and relieve symptoms associated with menopause.<sup>24</sup>

## The Many Health Benefits of Ashwagandha

In Ayurvedic medicine, ashwagandha is classified as "Rasayana," a type of essence that helps in the healing of the body and the lengthening of life,<sup>25</sup> and when you consider the many varied health benefits of this herb, it's easy to see how it might influence longevity.

Importantly, a number of studies have shown this exotic herb can treat several diseases and disorders better than medications – without all the side effects. For example, studies show ashwagandha has antitumor and blood production (hemopoietic) capabilities, and benefits the cardiopulmonary, endocrine and central nervous systems, all "with little or no associated toxicity."<sup>26</sup> Ashwagandha has also been shown to:<sup>27,28,29,30,31</sup>

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Support healthy levels of total lipids, cholesterol and triglycerides that are already in the normal range

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Enhance radiation therapy effects<sup>32</sup> by reducing tumor GSH levels.<sup>33</sup> It also reversed

paclitaxel-induced neutropenia (low neutrophil count, a type of white blood cell) in mice<sup>34</sup>

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Counteract osteoporosis<sup>35</sup> (reduced bone density)

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Protect your brain from oxidative stress,<sup>36</sup> and lower your risk of Alzheimer's<sup>37,38</sup>

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Stimulate proper thyroid function<sup>39</sup> and treat subclinical hypothyroid – In one double-blind, placebo-controlled study,<sup>40</sup> ashwagandha was pitted against some of the most popular drugs targeted for hypothyroid patients. The study involved 50 participants with elevated serum thyroid hormone (TSH), all between the ages of 18 and 50.

Divided into two groups, each was given either ashwagandha treatments or starch as a placebo for eight weeks. According to the researchers, ashwagandha effectively and significantly normalized serum thyroid stimulating hormone (TSH), T3 and T4 levels, compared to placebo, stating such treatment may be beneficial for hypothyroid patients.

As explained by Thyroid Advisor,<sup>41</sup> ashwagandha "directs THS hormone to travel to the pituitary. TSH triggers the thyroid gland to produce sufficient amounts of T4 and T3"

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Reduce blood pressure<sup>42</sup>

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Inhibit inflammation – In animal studies, ashwagandha was found to be more effective against inflammation than phenylbutazone<sup>43</sup> or hydrocortisone<sup>44</sup>

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Protect nerve function and oxidation<sup>45</sup>

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Provide natural pain relief<sup>46</sup>

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Combat insomnia and promote relaxation

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Nourish and protect your liver

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Increase red blood cell production

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Improve adrenal function<sup>47</sup>

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Lower irritability, edginess and anxiety

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Increase energy and endurance

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Promote healthy immune function

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Treatment aid for ADHD

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Improve incontinence

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Treatment aid for Type 2 diabetes

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Improve conjunctivitis

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Treatment aid for vitiligo

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Ease symptoms of Parkinson's disease

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Improve hyperglycemia

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Improve memory and cognitive function by slowing down the deterioration of brain cells, repairing brain cell damage and rebuilding neuronal networks and synapses

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Improve cardiovascular health – Ashwagandha helps maintain your heart health through its regulation of blood circulation. It helps prevent blood clots, and helps keep blood pressure levels within the normal range, which prevents the stress from burdening your heart<sup>48</sup>

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Maintain youthful appearance of skin – Ashwagandha increases your estrogen levels, which in turn triggers the production of collagen. This allows the skin to keep

its youthful appearance and helps in the production of natural oils. It also fights off free radicals that cause wrinkles, dark spots and blemishes<sup>49</sup>

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**Aid wound healing** – Ashwagandha root powder can be used topically as a poultice to help treat wounds. Mix the powder with water to make a smooth paste, and apply to the wound. It will help fight off bacteria, alleviate pain and speed up the healing process

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**Treat arthritis** – Ashwagandha has been noted in Ayurvedic manuscripts as well as modern medicine as being an effective remedy for both rheumatoid arthritis (Amavata) and osteoarthritis (Sandhi-gata Vata).<sup>50</sup>

According to one study,<sup>51</sup> "Patients of rheumatoid arthritis receiving Ashwagandha root powder showed excellent response. Their pain and swelling completely disappeared. A double-blind placebo controlled study, combining Ashwagandha, turmeric and zinc showed significant improvement in pain and inflammation"

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## **Possible Ashwagandha Side Effects and Contraindications**

While generally safe, well-tolerated and nontoxic, side effects can still occur. Memorial Sloan Kettering Cancer Center cites case reports showing side effects from ashwagandha may include:

- Nausea, headache, stomach irritation and loose stools
- Drowsiness
- Overactive thyroid
- Burning, itching and discoloration of skin/mucous membrane
- Irregular heartbeat, dizziness

Ashwagandha is also contraindicated<sup>52</sup> for, and should not be used by pregnant women, as it may induce abortion; breast-feeding women, as it may have an effect on your child;

and people taking sedatives, as ashwagandha may augment the sedative effects. While ashwagandha appears to be beneficial for thyroid problems, if you have a thyroid disorder, use caution and consult with your doctor, as you may need to tweak any medications you're taking for it.

## **Beware of Adulterated Ashwagandha Products**

Needless to say, making sure you're getting a high-quality product is of utmost importance. To ensure effectiveness, I recommend using 100% organic Ashwagandha root, free of fillers, additives and excipients. Unfortunately, adulterated ashwagandha products have been found on the market, so buyer beware.

A bulletin<sup>53</sup> by the Botanical Adulterants Prevention Program reveals many ashwagandha root powders and root extracts manufactured in India are being adulterated by adding leaves, stems and aerial parts of the plant, without declaring this on the label. In some tests, up to 80% of products were found to be adulterated in this manner.

This fraudulent addition on undeclared plant material is a cost-saving strategy that results in an inferior product with questionable efficacy. As noted in the bulletin, the price difference between roots and leaves is significant, with high-quality roots selling between \$2.46 and \$3.56 per metric ton, compared to just 34 to 82 cents per metric ton for dried leaves.

The bulletin also cites investigations showing there's a wide variety in concentration of withaferin A between products – in this particular case, products manufactured in India – with levels of this natural steroid ranging from 0.02 to 2.34 mg per gram of ashwagandha root, depending on the brand. The addition of other materials from the plant is suspected to be one of the reasons for this wide variance in quality.

The take-home message is, when buying ashwagandha, it's worth doing your homework to make sure you're getting a quality product.

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