

**ADAPTOGEN- THE LATEST HERBAL DIETARY SUPPLEMENT FOR LIFESTYLE  
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**ABSTRACT**

Ayurvedic treatment was very popular as the oldest healing system in the world. The success of using certain plants containing pharmacologically active compounds, in healing and good health and to resist stressful environments of modern life, a class of herbs known as “adaptogens” have come to be regarded as among the most highly celebrated of these plants. Though the word adaptogen is quite new, they have been used for centuries by several different cultures and traditions. Adaptogens can be offered as supplements as they work at the molecular level to stabilize hypothalamus, pituitary and adrenal glands (hypothalamic-pituitary-adrenal axis), which is human body’s stress response system. Adaptogenic herbs are strongly effectual plants, enabling the body to better deal with stress and harmonize the bodily humours. For this reason adaptogens are so profoundly relied upon in its use of herbal medicines. This herbal group of supplements act as challengers and mild stressors.

**KEYWORDS:** Adaptogen, Stress, Ayurvedic treatment, Herbs, Food.**INTRODUCTION**

According to WHO "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Since Vedic period Ayurvedic treatment was very much popular as the oldest healing system in the world. The success of using certain plants, which contain pharmacologically active compounds, in healing and for good health that give the ability to resist stressful environments of modern life, group of herbs known as “adaptogens” have come to be considered as among the most potent of these plants. In the present modern world of health and wellness, “adaptogens” are beginning to achieve quite a bit of attention. The term “adaptogen” is relatively new in the scenario of health and wellness. From web databases it was observed that researches are in focus on this field over last 10 years and it showed an increasing propensity from 1999 to 2018, which profiles that it is still a very advisable direction to look for. They are gaining popularity for their stress-reducing benefits. Adaptogens are a subset of herbal and plant ingredients that have been used in Ayurvedic and Chinese healing traditions and claimed to bring homeostasis and physiological stabilization to the body and can help to manage stress. Though the word adaptogen is quite new in conventional herbal remedies, they have been used for centuries by several different cultures and traditions. Adaptogenic herbs are now being available in the form of supplements and tonics and can be taken with coffee, hot chocolate, and juice. Though these herbs are very new in Western

countries, they have been around for hundreds of years in Eastern medicine. Research showed that adaptogens can combat fatigue, enhance mental performance, ease depression and anxiety, and help you thrive rather than just muddle through.<sup>[1]</sup> At the beginning adaptogens were defined as substances that enhance the “state of nonspecific resistance” in stress, a physiological condition that is linked with various disorders of the neuroendocrine-immune system. The idea of using herbal medicinal plants to increase physical strength and survival in harmful environment was developed during 1950–60, and a new concept of “adaptogens” was introduced. The term “adaptogen” was first coined by Dr. Nicolai V. Lazarev, a Soviet scientist, medical doctor, and pharmacologist, who was studying the body’s resistance to stress, in the 1940s.<sup>[2,3]</sup> At the end of the 1960s Brekhman and Dardimov proposed that adaptogens are innocuous agents that nonspecifically increase resistance against physically, chemically, biologically and psychologically noxious factors (“stressors”), normalizing effect independent of the nature of pathologic state.<sup>[4]</sup>

**ADAPTOGENS IN WESTERN MEDICAL WORLD**

Western medical research studies have been relatively ephemeral, compared to the thousands of years of scrupulous research that have been conducted and recorded by ancient medical practitioners. Naturopathic clinicians often criticize western researchers because they do not give credit to the thousands years old

Ayurvedic research, trials, and success predicated on the entirety of nature. With continuous research for few decades the concept of adaptogens has been continuously modified and perfected. The emergence of a global formalisation of traditional medicine notion via the World Health Organisation (WHO) highlights the importance of standardisation of traditional medicine concepts. In 1998, the American Food and Drug Administration (FDA)<sup>[5]</sup> defined an adaptogen as a new kind of metabolic regulator that has been proved to help in environmental adaptation and to prevent external harms. By recognizing the value of traditional ancient healing, modern allopathic doctors might be humbled to understand the limitations of their own methods and that particular aspects of the human body do not function in a vacuum. In 2007, Yance, an American naturopathic doctor, reported that adaptogens can improve our ability to recognize, respond, recover, and restore or regenerate.<sup>[6]</sup> According to him, adaptogens are of three categories - primary, secondary and adaptogen companions. Primary adaptogens are consistent with the traditional definition of adaptogens and satisfy specific adaptogenic criterias that has been confirmed after abundant scientific research, guarantee of general resistance and non-specific action in the human body, maintenance or restoration for homeostasis, and adverse- or toxic-effects after prolonged use.<sup>[6]</sup>

#### AYURVEDIC MEDICINE AND ITS HISTORY OF ADAPTOGENS

The term "Ayurveda" came from the Sanskrit words ayus, means "life," and veda, means "knowledge." Indian medicine recognizes various forms of traditional practice including Ayurveda, Unani, and Siddha. Ayurvedic medicine is an example of a disciplined system of traditional health care, both preventive and curative, that is widely practiced in parts of Asia. This branch of medicine has been originated in India perhaps as much as 3,000 years ago and has a long tradition behind it. Indian medicine identifies various forms of traditional practice like Ayurveda, Unani, and Siddha. Ayurveda is ascribed to Dhanvantari, the physician to the gods in Hindu mythology, who received it from Brahma. Its earliest concepts were set out in the portion of the Vedas known as the Atharvaveda.<sup>[7]</sup> Ancient Indian medicine analyzed the human body in terms of earth, water, fire, air, and ether as well as the three bodily humours - vata, which governs energy formation and conservation, pitta which is related to enzymes and neurological systems and kapha, which is related to water and electrolyte balance). Indian traditional methods of healing attained a clarity, depth of reasoning, and insightful philosophical basis that have characterized Ayurveda ever since. From the beginning of this natural and traditional therapies the texts of Ayurveda, specifically Charak Samhita and Sushrut Samhita was written.<sup>[8]</sup>

Because Ayurvedic healing is the oldest known of all medical sciences, it has been largely significant in the

cultivation of the world's other oldest healing traditions. Ayurveda was also found its way into Tibet and China, because of Buddhism, which was originated in India, contributing to the development of their traditional medical healing systems. Ayurveda also influenced both Islamic and early European medicine. In the view of Ayurvedic Medicine, adaptogenic herbs are strongly effectual plants, enabling the body to better deal with stress and harmonize the bodily humours. It's for this reason that adaptogens are so profoundly relied upon in its use of herbal medicines. According to the primary definition of adaptogens, these herbal substances must possess three specific criteria.<sup>[9, 10]</sup>

- i) They must be non-specific and must aid the human body in resisting a wide range of adverse conditions, such as physical, chemical or biological stress.
- ii) They must maintain homeostasis in humans by modulating physiological functions of body. They can compensate or combat physical disorders caused by different external stress.
- iii) They must be relatively non-toxic to human body.

#### WORKING MECHANISM OF ADAPTOGENS

Research around adaptogens and their potential uses has increased in recent years, but we know that adaptogens work by affecting the immune-neuro-endocrine system at the molecular level to stabilize hypothalamus, pituitary glands and adrenal glands, i.e. hypothalamic-pituitary-adrenal axis (HPA),<sup>[11, 12]</sup> which is human body's stress response system. Studies have demonstrated that adaptogens are potent substance to aid humans against fatigue, stress, and depression while increasing mental capacities and attention spans.<sup>[13, 14]</sup> Quite a few research revealed that adaptogens exhibit neuroprotective, anti-fatigue, antidepressive, anxiolytic, and CNS stimulating activity. A number of clinical trials demonstrate that adaptogens exert an anti-fatigue effect that increases mental work capacity against a background of stress and fatigue, particularly in tolerance to mental exhaustion and enhanced attention.<sup>[1, 15, 16, 17, 18]</sup>

Cortisol is often a catchphrase when it comes to stress. Cortisol, a steroid hormone, commonly known as the body's stress hormone. It is released from adrenal glands during stress, increasing heart rate, blood pressure, and glucose levels. The human body is frequently responding to various internal and external stressors and respond to the stressful stimuli depending on the degree of threat. As the body continues to recognize various stressor stimuli as a threat, the hypothalamus activates the HPA axis. Cortisol is released from the adrenal cortex and permits the body to remain active on high alert. While the hormone is important for "fight or flight moments," excessive high levels of cortisol for long time can lead to health issues like type 2 diabetes and Cushing's syndrome. Adaptogens have shown promise in normalizing stress hormones, such as cortisol.<sup>[1]</sup> The limitations regarding adaptogens are that researchers are still looking into

understanding how exactly these herbs play their role to stabilize stress.

### BENEFITS OF ADAPTOGENS IN DIET

Everyday human body are facing different kind of stress, which make them more and more fatigue and tired and in the upcoming years we believe that daily stress level will increase or at least remain similar like the past years. As the popularity and availability of adaptogens are growing and quite a few benefits are circulating to keep our health and wellness to fight will stress, adding adaptogens to our dietary regime will be beneficial and a good choice. The easiest way to start taking adaptogens is through supplements, which is available in many health food stores. Because research is in progress how much to take is still unclear. Therefore it's better to use these supplements in moderate levels at present. As supplements are not regulated by the Food and Drug Administration, it is always wise to consult with doctor before purchasing and using adaptogen or herbs as supplements to ensure there will be no interactions with current medications and/or conditions one may have. For pregnant and breastfeeding women and person those who have any health concerns it is better to consult with healthcare provider before starting to take those supplements in diet. Common adaptogens that are presently using as supplements are: Ashwagandha, Asian Ginseng, Rhodiola Rosea, Holy Basil, Schisandra, Medical Mushrooms (Reishi, Chaga, Lion's Mane and Cordyceps), Maca Root, Licorice Root.

### HOW TO INCORPORATE ADAPTOGENS INTO DIET?

There are many ways to consume adaptogenic products, including drinking adaptogen teas, adding adaptogenic mixtures to water, or using adaptogen powders in beverages, like smoothies or coffee. As cortisol level is highest in the morning and it drops throughout the day, it's better to add adaptogen with breakfast in the morning. As liquid extract are more pure than powder or any herbal supplements, adaptogens are also better to take in liquid form. The efficacy of all herbal medicine

depends on the individual's own healing system, noticing their body, and tuning into what works for them. The best way to add adaptogens in health and wellness routine for two to three weeks and to notice how they are working in the body over time.

### CONCLUSION

Health requires a comprehensive approach, so simply including adaptogens in diet or drinking adaptogens will have little impact on stress. It might be beneficial and give stronger results if it is taken in conjunction with other stress reducing practices. The adaptogens act as challengers and mild stressors. Adaptogens also have certain side effects, interactions, and contraindications similar to any drug or supplement, particularly if taken for too long or in too high of doses. As there are many different types of adaptogens, each with its own uses and health benefits, it require a proper study and research, especially regarding any current health conditions before selecting any adaptogen as dietary supplement. It is always recommended to consult doctor or healthcare provider before beginning a herbal regiment. Traditionally, different combinations of adaptogens are used for different illness; for example ashwagandha and ginseng are often used for stress, ginseng and rhodiola are often used to combat the fight or flight response. Reishi is often used for immune health.<sup>[1, 19]</sup> It is important to remember that adaptogen supplement is not an overnight fix. Research shows that adaptogens may not only help the body deal with stress more effectively, but they may also help to increase quality of life, improve longevity and protect neurological health.<sup>[1, 20]</sup> Hence, it may be recommended that adaptogens have prospective use in geriatric problems (age related disorders), such as neurodegenerative and cardiovascular diseases. Thus, elderly people may be able to sustain a healthy life, also can improve their quality of life and may increase longevity. However, further research may be needed to evaluate the efficacy of adaptogens as geriatrics and to explain the molecular mechanisms of action of these complex herbal extracts and their active phyto-components.

**Table 1: List of few common adaptogenic herbs.**

Few Common Adaptogenic Plant	Products	Potential benefit
American ginseng ( <i>Panax quinquefolius</i> )	Radices, Tincture	Boosts working memory, reaction time, calmness, and immune system
Ashwagandha ( <i>Withania somnifera</i> )	Roots, Liquid extract	Reduces stress and anxiety, anti-inflammatory, anti-invasive, pro-apoptotic, and anti-fibrotic
Rhodiola rosea ( <i>R. rosea</i> )	Radices and rhizomes, Liquid extract	Staves off physical and mental fatigue
Tulsi/Holy basil ( <i>Ocimum sanctum</i> )	Leaves, Stem, Flower, Roots,	Reduces physical and mental stress, stress-related anxiety, and depression
Turmeric ( <i>Curcuma longa</i> )	Rhizomes	Boosts brain function and reduces depression
Astragalus ( <i>Astragalus membranaceus</i> )	Root	Combats fatigue
Cordyceps ( <i>Cordyceps militaris</i> )	Tincture	Boosts stamina
Goji berry ( <i>Lycium barbarum</i> )	Whole fruit	Boosts energy, physical and mental performance, calmness, and sense of well-being, and can also improve sleep

Eluethero root ( <i>Eleutherococcus senticosus</i> )	Radices and rhizomes, Liquid extract	Improves focus and staves off mental fatigue
Jiaogulan ( <i>Gynostemma Pentaphyllum</i> )	Leaf, Liquid extract	Reduces stress and boosts endurance
Licorice root ( <i>Glycyrrhiza glabra</i> )	Root	Reduces stress
Schisandra berry/Magnolia berry ( <i>Schisandra chinensis</i> )	Dried berries	Boosts endurance, mental performance, and working capacity

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