



# amare IGNITE

■ FOR HIM

ALL-NATURAL SEXUAL WELLNESS  
& HORMONE BALANCE\*



## TECHNICAL DATA SHEET

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The all-natural sexual wellness supplement with clinically studied ingredients that maintains healthy sexual desire and supports healthy hormone balance.\*

## KEY INGREDIENTS

### “Performance Proprietary Blend”

**Beet Root Powder** – Beet Root is rich in phyto-nutrients and is one of the more popular botanicals in the market today. It is rich in nitrates that help to improve your mental and cognitive functions by expanding the blood vessels so that more blood can flow to your brain. Nitrates are a set of compounds that involve nitrogen and oxygen molecules that help produce nitric oxide in your body which in turn causes blood vessels to relax and dilate throughout the body, including sex organs. In fact, it's crucial to getting an erection and maintaining proper vaginal blood flow.

**RhodiLife®** – Rhodiola rosea, also called golden root, Arctic root, and rose root, grows in arctic and mountain regions throughout Europe, Asia, and America. Its use was first recorded by the Greeks and It has been used for centuries as a traditional medicine in Russia, Scandinavia, and other countries for the treatment of fatigue, depression, anemia, impotence, GI ailments, infections, and nervous system disorders, and to promote physical endurance, longevity, and work productivity.

A phytomedicinal overview of rhodiola research published in the American Botanical Council's Herbalgram suggests that the herb can be useful in the treatment of both erectile dysfunction and premature ejaculation. Rhodiola is classified as an adaptogen. It contains a range of antioxidant compounds, and its adaptogenic activities are attributed to its unique phenylpropanoids rosavin, rosarin, and rosidirin, and to phenylethanol derivatives p-tyrosyl and salidroside (also called rhodioloside), as well as to flavonoids, triterpenes, monoterpenes, and phenolic acids. Studies have demonstrated its ability to induce a general sense of well-being and reduce situational anxiety. It has demonstrated improvement in depressive syndromes, mental and physical fatigues secondary to medical conditions, sexual dysfunction, thyroid hypofunction, thymus gland functioning, adrenal functioning, and menopause-related conditions.

Its mechanism of action is partly attributed to the herb's ability to influence levels of monoamines, including serotonin, dopamine, and norepinephrine in the cerebral cortex, brainstem, and hypothalamus through inhibition of degradation enzymes and facilitation of neurotransmitter support in the brain. It also appears to prevent catecholamine release and camp elevation in the myocardium, to prevent

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depletion of adrenal catecholamines by acute stress, and to induce opioid peptide biosynthesis and activation of central and peripheral opioid receptors. <https://www.plthealth.com/product-catalog/rhodiolife-rhodiola-rosea-the-finger-print-matters>

### “Hormone Balance Proprietary Blend”

**Cordyceps Mushroom Extract Blend (Cordyceps militaris + Cordyceps sinensis)** – It’s a fungus that grows in Himalayas. It has extremely high concentrations of nutrients and specific bioactive components. According to Tibetan healers, cordyceps cures everything from headaches to infertility and erectile dysfunction. Known in the West as ‘Cordyceps sinensis’, its Tibetan name yartsa gunbu translates in English to “summer grass, winter worm” and has been used for thousands of years by Tibetans, Nepalese, Chinese and many other cultures as a potent natural aphrodisiac. Cordyceps offers a natural and powerful alternative to libido-enhancing pharmaceutical drugs, proven in many studies and used by various cultures worldwide to treat male impotence, improve erectile function, sperm production and stamina, and increase sexual desire in both men and women. Furthermore, Cordyceps, unlike various pharmaceutical alternatives, has no known side effects. There is strong scientific evidence that Cordyceps also has an ability to lower high blood pressure and widen blood vessels enhancing the nitric oxide release. <https://www.m2ingredients.com/our-mushrooms>

**AlivEL® (Tongkat Ali Root Extract)** – Eurycoma longifolia is a tall evergreen shrub-tree commonly found in Southeast Asia. It's a protected species with a history of use as an aphrodisiac. The root of Eurycoma longifolia contains several chemicals that have different effects in the body. Some of the chemicals seem to affect how the body produces the hormone testosterone and might increase testosterone levels in the body. Scientific studies on the erectogenic properties of this plant revealed that its root extracts appear to be able to increase penile erection in rats and humans, in which markedly higher scores in the International Index of Erectile Function (IIEF) have been obtained compared to placebo.

In a study, the root extracts of E. longifolia had the ability to cause direct relaxation of rat corpus cavernosum. Furthermore, the more purified form of the root extracts/DCM-I, was able to cause/ induce relaxation in corpora cavernosa by counteracting Ang II-induced contractions and enhancing BK-mediated relaxations. This mechanism could probably explain the physiological event necessary for penile erection to occur as previously reported. <http://source-1-global.com/products-offered/alivel-100/>

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## CLINICAL STUDIES

### A Review on Plants Used for Improvement of Sexual Performance and Virility

Nagendra Singh Chauhan, 1, 2, \*, Vikas Sharma, 1, V. K. Dixit, 1 and Mayank Thakur 1, 3, \*

#### Abstract

The use of plant or plant-based products to stimulate sexual desire and to enhance performance and enjoyment is almost as old as the human race itself. The present paper reviews the active, natural principles, and crude extracts of plants, which have been useful in sexual disorders, have potential for improving sexual behaviour and performance, and are helpful in spermatogenesis and reproduction. Review of refereed journals and scientific literature available in electronic databases and traditional literature available in India was extensively performed. The work reviews correlation of the evidence with traditional claims, elucidation, and evaluation of a plausible concept governing the usage of plants as aphrodisiac in total. Phytoconstituents with known structures have been classified in appropriate chemical groups and the active crude extracts have been tabulated. Data on their pharmacological activity, mechanism of action, and toxicity are reported. The present review provides an overview of the herbs and their active molecule with claims for improvement of sexual behaviour. A number of herbal drugs have been validated for their effect on sexual behavior and fertility and can therefore serve as basis for the identification of new chemical leads useful in sexual and erectile dysfunction.

### The Role of Nitric Oxide in Erectile Dysfunction: Implications for Medical Therapy

Arthur L. Burnett, MD 1

#### Abstract

Erectile dysfunction is a common, multifactorial disorder that is associated with aging and a range of organic and psychogenic conditions, including hypertension, hypercholesterolemia, diabetes mellitus, cardiovascular disease, and depression. Penile erection is a complex process involving psychogenic and hormonal input, and a neurovascular nonadrenergic, noncholinergic mechanism. Nitric oxide (NO) is believed to be the main vasoactive nonadrenergic, noncholinergic neurotransmitter and chemical mediator of penile erection. Released by nerve and endothelial cells in the corpora cavernosa of the penis, NO activates soluble guanylyl cyclase, which increases 3',5'-cyclic guanosine monophosphate (cGMP) levels. Acting as a second messenger molecule, cGMP regulates the activity of calcium channels as well as intracellular contractile proteins that affect the relaxation of corpus cavernosum smooth muscle. Impaired NO bioactivity is a major pathogenic mechanism of erectile dysfunction. Treatment of erectile dysfunction often requires combinations of psychogenic and medical therapies, many of which have been only moderately successful in the past. The advent of oral phosphodiesterase type 5 (PDE-5) inhibitors, however, has greatly enhanced erectile dysfunction treatment; patients have demonstrated

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high tolerability and success rates for improved erectile function. The efficacy of the PDE-5 inhibitors also serves to illustrate the importance of the NO-cGMP pathway in erectile function since these agents counteract the degradation of NO-generated cGMP. Because not all patients respond to PDE-5 inhibitors, additional therapies are being investigated, such as soluble guanylyl cyclase activators and NO donors, which act on NO-independent and NO-dependent pathways, respectively.

### **Beet Root Juice: An Ergogenic Aid for Exercise and the Aging Brain**

Meredith Petrie,<sup>1</sup> W. Jack Rejeski,<sup>2</sup> Swati Basu,<sup>3</sup> Paul J Laurienti,<sup>1</sup> Anthony P Marsh,<sup>2</sup> James L Norris,<sup>4</sup> Daniel B Kim-Shapiro,<sup>3</sup> and Jonathan H Burdette<sup>1</sup> corresponding author<sup>1</sup>

#### *Abstract*

Exercise has positive neuroplastic effects on the aging brain. It has also been shown that ingestion of beet root juice (BRJ) increases blood flow to the brain and enhances exercise performance. Here, we examined whether there are synergistic effects of BRJ and exercise on neuroplasticity in the aging brain.

#### *Methods*

Peak metabolic equivalent (MET) capacity and resting-state magnetic resonance imaging functional brain network organization are reported on 26 older (mean age = 65.4 years) participants randomly assigned to 6 weeks of exercise + BRJ or exercise + placebo.

#### *Results*

Somatomotor community structure consistency was significantly enhanced in the exercise + BRJ group following the intervention (MBRJ = -2.27, SE = 0.145, MPlacebo = -2.89, SE = 0.156,  $p = .007$ ). Differences in second-order connections between the somatomotor cortex and insular cortex were also significant; the exercise + BRJ group (M = 3.28, SE = 0.167) had a significantly lower number of connections than exercise + placebo (M = 3.91, SE = 0.18,  $p = .017$ ) following the intervention. Evaluation of peak MET capacity revealed a trend for the exercise + BRJ group to have higher MET capacity following the intervention.

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## Review of Naturopathy of Medical Mushroom, *Ophiocordyceps Sinensis*, in Sexual Dysfunction

Kanitta Jiraungkoorskul and Wannee Jiraungkoorskul

### Abstract

Sexual dysfunctions including desire, arousal, orgasm, and pain disorders are increasing worldwide due to etiological factors and aging. Several types of treatment are claimed in modern medicine, but they have serious side effects and higher costs. In fact, alternative approaches, such as the intake of plants, fungi, and insects, or their extracts, have also been practiced to enhance sexuality and ameliorate illness with notable successes. However, the scientific evidence related to the mechanisms and efficacy of these alternative medicines is both scarce and all too often unconvincing. *Ophiocordyceps sinensis* is an Ascomycetes fungus parasitic to Lepidoptera larvae, and has long been used as medicine to treat many illnesses and promote longevity in Chinese society. Previous investigations have shown that *O. sinensis* has many pharmacological activities. This review has focused on illustrating that *O. sinensis* can enhance libido and sexual performance, and can restore impaired reproductive functions, such as impotency or infertility, in both sexes.

## Pharmacological and therapeutic potential of Cordyceps with special reference to Cordycepin

Hardeep S. Tuli,<sup>1</sup> Sardul S. Sandhu,<sup>2</sup> and A. K. Sharma<sup>corresponding author</sup><sup>1</sup>

### Abstract

An entomopathogenic fungus, *Cordyceps* sp. has been known to have numerous pharmacological and therapeutic implications, especially, in terms of human health making it a suitable candidate for ethno-pharmacological use. Main constituent of the extract derived from this fungus comprises a novel bio-metabolite called as Cordycepin (3'deoxyadenosine) which has a very potent anti-cancer, anti-oxidant and anti-inflammatory activities. The current review discusses about the broad spectrum potential of Cordycepin including biological and pharmacological actions in immunological, hepatic, renal, cardiovascular systems as well as an anti-cancer agent. The article also reviews the current efforts to delineate the mechanism of action of Cordycepin in various bio-molecular processes. The study will certainly draw the attention of scientific community to improve the bioactivity and production of Cordycepin for its commercial use in pharmacological and medical fields.

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## **Cordycepin for Health and Wellbeing: A Potent Bioactive Metabolite of an Entomopathogenic Medicinal Fungus Cordyceps with Its Nutraceutical and Therapeutic Potential**

Syed Amir Ashraf,<sup>1</sup> Abd Elmoneim O. Elkhalfifa,<sup>1</sup> Arif Jamal Siddiqui,<sup>2</sup> Mitesh Patel,<sup>3</sup> Amir Mahgoub Awadelkareem,<sup>1</sup> Mejdi Snoussi,<sup>2,4</sup> Mohammad Saquib Ashraf,<sup>5</sup> Mohd Adnan,<sup>2,\*</sup> and Sibte Hadi<sup>6,\*</sup>

### Abstract

Cordyceps is a rare naturally occurring entomopathogenic fungus usually found at high altitudes on the Himalayan plateau and a well-known medicinal mushroom in traditional Chinese medicine. Cordyceps contains various bioactive components, out of which, cordycepin is considered most vital, due to its utmost therapeutic as well as nutraceutical potential. Moreover, the structure similarity of cordycepin with adenosine makes it an important bioactive component, with difference of only hydroxyl group, lacking in the 3' position of its ribose moiety. Cordycepin is known for various nutraceutical and therapeutic potential, such as anti-diabetic, anti-hyperlipidemia, anti-fungal, anti-inflammatory, immunomodulatory, antioxidant, anti-aging, anticancer, antiviral, hepatoprotective, hypo-sexuality, cardiovascular diseases, antimalarial, anti-osteoporotic, anti-arthritic, cosmeceutical etc. which makes it a most valuable medicinal mushroom for helping in maintaining good health. In this review, effort has been made to bring altogether the possible wide range of cordycepin's nutraceutical potential along with its pharmacological actions and possible mechanism. Additionally, it also summarizes the details of cordycepin based nutraceuticals predominantly available in the market with expected global value. Moreover, this review will attract the attention of food scientists, nutritionists, pharmaceutical and food industries to improve the use of bioactive molecule cordycepin for nutraceutical purposes with commercialization to aid and promote healthy lifestyle, wellness and wellbeing.

## **Rhodiola rosea Exerts Antiviral Activity in Athletes Following a Competitive Marathon Race**

Maryam Ahmed 1, Dru A Henson 1, Matthew C Sanderson 1, David C Nieman 2, Jose M Zubeldia 3, R Andrew Shanely 4

### Abstract

Rhodiola rosea, a medicinal plant with demonstrated adaptogenic properties, has recently been reported to contain active compounds with antimicrobial activity. The goal of this study was to measure the antiviral and antibacterial properties of the bioactive metabolites of Rhodiola rosea in the serum of experienced marathon runners following supplementation. Marathon runners, randomly divided into two groups, ingested 600 mg/day of Rhodiola rosea (n = 24, 6 female, 18 male) or placebo (n = 24, 7 females, 17 males) for 30 days prior to, the day of, and 7 days post-

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marathon. Blood serum samples were collected the day before, 15 min post-, and 1.5 h post-marathon. Serum from *Rhodiola rosea*-supplemented runners collected after marathon running did not attenuate the marathon-induced susceptibility of HeLa cells to killing by vesicular stomatitis virus. However, the use of *Rhodiola rosea* induced antiviral activity at early times post-infection by delaying an exercise-dependent increase in virus replication ( $P = 0.013$  compared to placebo). Serum from both groups collected 15 min post-marathon significantly promoted the growth of *Escherichia coli* in culture as compared to serum collected the day before the marathon ( $P = 0.003$ , all subjects). Furthermore, the serum from subjects ingesting *Rhodiola rosea* did not display antibacterial properties at any time point as indicated by a lack of group differences immediately ( $P = 0.785$ ) or 1.5 h ( $P = 0.633$ ) post-marathon. These results indicate that bioactive compounds in the serum of subjects ingesting *Rhodiola rosea* may exert protective effects against virus replication following intense and prolonged exercise by inducing antiviral activity.

## **Anti-inflammatory activity of *Rhodiola rosea*--"a second-generation adaptogen"**

Pooja 1; A S Bawa, Farhath Khanum

### Abstract

*Rhodiola rosea* (golden root), a unique phytoadaptogen grown in high-altitude regions has gained attention for its various therapeutic properties. In India, this plant is found in the Himalayan belt and has not been completely explored for its beneficial health effects. The present study was undertaken to evaluate the anti-inflammatory efficacy of the tincture extract of *Rhodiola rosea* roots (RTE). The anti-inflammatory activity was determined through carrageenan-induced paw oedema, formaldehyde-induced arthritis and nystatin-induced paw oedema in rat model. The tincture extract exhibited inhibitory effect against acute and subacute inflammation at a dose of 250 mg/kg body weight. Inhibition of nystatin-induced oedema was also observed in a dose-dependent manner. The in vitro inhibitory effects of the tincture extract from *R. rosea* roots was evaluated against the enzymes relating to inflammation. The enzymes include cyclooxygenase-1 (COX-1), cyclooxygenase-2 (COX-2) and Phospholipase A2 (PLA2). The extract showed varying inhibitory activities against these enzymes depending on the concentrations. A potent inhibition was observed against Cox-2 and PLA2. Inhibition of nystatin induced oedema and phospholipase A2 suggested that membrane stabilization could be the most probable mechanism of action of RTE in anti-inflammation. The findings in this study may provide the use of *R. rosea* root extract in the treatment of inflammatory conditions.



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## A pilot study of *Rhodiola rosea* (Rhodax) for generalized anxiety disorder (GAD)

Alexander Bystritsky 1, Lauren Kerwin, Jamie D Feusner

Affiliations expand

PMID: 18307390 DOI: 10.1089/acm.2007.7117

### Abstract

Background: *Rhodiola rosea* is an herbal supplement that many in the general population in Russia and elsewhere in the world have used for decades to alleviate everyday anxiety, depression, and insomnia. Whether *R. rosea* is effective in reducing similar symptoms in clinical samples is unknown. The goal of this pilot study was to evaluate whether *R. rosea* is effective in reducing symptoms of generalized anxiety disorder (GAD).

Method: Ten (10) participants with a DSM-IV diagnosis of GAD, recruited from the UCLA Anxiety Disorders Program and between the ages of 34 and 55, were enrolled in this study from November 2005 to May 2006. Participants received a total daily dose of 340 mg of *R. rosea* extract for 10 weeks. Assessments included the Hamilton Anxiety Rating Scale (HARS), the Four-Dimensional Anxiety and Depression Scale, and the Clinical Global Impressions of Severity/Improvement Scale.

Results: Individuals treated with *R. rosea* showed significant decreases in mean HARS scores at endpoint ( $t=3.27$ ,  $p=0.01$ ). Adverse events were generally mild or moderate in severity, the most common being dizziness and dry mouth. Conclusions: Significant improvement in GAD symptoms was found with *R. rosea*, with a reduction in HARS scores similar to that found in clinical trials. These preliminary findings warrant further exploration of treatment with *R. rosea* in clinical samples.

## In Vitro and in Silico Evaluation of the Potential for Neuroprotection of RhodiLife, a *Rhodiola Rosea* Roots Extract

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### Abstract

*Rhodiola rosea*, an adaptogen plant from cold regions, has been previously proposed for alleviating dementia and other neurodegenerative diseases. The goal of our study was to evaluate if our proprietary extract (RhodiLife) was able to elicit biological responses related to neuroprotection in neuronal cultures. NS20Y cells were cultured according to procedures and increasing concentrations of RhodiLife were added to the media. Viability at 24h using Presto Blue™ showed no statistically significant differences at those concentrations (0-50 ppm). Quantitative real-time RT-PCR analysis

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(G-coupled protein receptor [GPCR] array) showed statistically significant ( $p < 0.05$ ) upregulation of 3 genes: calcitonin receptor-like (CALCRL), cyclin-dependent kinase inhibitor 1A (CDKN1A), and lysophosphatidic acid receptor 2 (LPAR2) (4, 3 and 2-fold respectively). In silico evaluation of the bioactives contained in RhodioLife ( www.molinspiration.com ) revealed that Salidroside, Rosarin, Rosavin, Rosiridin, Cinnamyl alcohol and p-Tyrosol all had 1 or no violations of the Lipinski's rule of five, suggesting favorable pharmacokinetics. The predicted G-coupled protein receptor bioactivity was greatest for Rosarin (0.39) and Salidroside (0.35). We conclude that RhodioLife contained substances which had relevant biological activity and molecular properties suggesting a role in neuroprotection. Studies in suitable animal models are recommended.

### **Eurycoma Longifolia as a potential adoptogen of male sexual health: a systematic review on clinical studies**

Hnin Ei Thu 1, Isa Naina Mohamed 1, Zahid Hussain 2, Putri Ayu Jayusman 1, Ahmad Nazrun Shuid 3

#### **Abstract**

Eurycoma longifolia (EL) has been well recognized as a booster of male sexual health. Over the past few decades, numerous in vivo animal studies and human clinical trials have been conducted across the globe to explore the promising role of EL in managing various male sexual disorders, which include erectile dysfunction, male infertility, low libido, and downregulated testosterone levels. The aim of the present review is to analyze and summarize the literature on human clinical trials which revealed the clinical significance and therapeutic feasibility of EL in improving male sexual health. This systematic review is focused on the following databases: Medline, Wiley Online Library, BioMed Central, Hindawi, Web of Knowledge, PubMed Central and Google Scholar, using search terms such as "Eurycoma longifolia", "EL", "Tongkat Ali", "male sexual health", "sexual infertility", "erectile dysfunction", "male libido", and "testosterone levels". Notably, only human clinical studies published between 2000 and 2014 were selected and thoroughly reviewed for relevant citations. Out of 150 articles, 11 met the inclusion criteria. The majority of articles included were randomized placebo-controlled trials, multiple cohort studies, or pilot trials. All these studies demonstrated considerable effects of EL on male sexual health disorders. Among them, 7 studies revealed remarkable association between the use of EL and the efficacy in the treatment of male sexual disorders, and remaining 4 studies failed to demonstrate sufficient effects on male sexual health. In summary, there is convincing evidence for the prominence of EL in improving the male sexual health. The review also substantiates the use of current methodology in the development of novel and more rationale natural herbal medicines for the management of male sexual disorders.

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## **A 6-month, double-blind, placebo-controlled, randomized trial to evaluate the effect of Eurycoma longifolia (Tongkat Ali) and concurrent training on erectile function and testosterone levels in androgen deficiency of aging males (ADAM)**

Alice Erwig Leitão 1, Melissa Carvalho de Souza Vieira 2, Andreia Pelegrini 2, Edson Luiz da Silva 3, Adriana Coutinho de Azevedo Guimarães 2

### Abstract

**Background:** Androgen deficiency of aging males (ADAM) largely manifests as sexual symptoms. Erectile dysfunction is one of the most common symptoms of ADAM.

**Aim:** To ascertain the effect of concurrent training and supplementation with Eurycoma longifolia on erectile function and testosterone levels in men with ADAM, and the association of erectile function with levels of total testosterone.

**Methods:** 6-month, randomized, double-blind, placebo-controlled four-arm clinical. 45 men (47.38 ± 5.03 years) were randomized into 4 groups (G1: control + placebo; G2: control + Eurycoma longifolia; G3: concurrent training + placebo; G4: concurrent training + Eurycoma longifolia). 22 received a 200 mg supplement of Eurycoma longifolia and 23 underwent the intervention with concurrent training, 3 times a week for 60 min at progressive intensity.

**Outcomes:** International Index of Erectile Function (IIEF-5), Aging Male Scale (AMS) and total testosterone.

**Results:** Erectile function demonstrated improvements in both interventions; however, the most significant results were obtained by men allocated to concurrent training + Eurycoma longifolia.

**Clinical implications:** A 200 mg supplement of Eurycoma longifolia and the practice of concurrent training for 6 months significantly improved the erectile function of men with ADAM.

**Strengths & limitations:** The study's design stands out as a strength, in addition to the six-month intervention. The main limitation is the study not having groups that used only Eurycoma longifolia and only concurrent training.

**Conclusion:** The combination of Eurycoma longifolia and concurrent training improved erectile function and increased total testosterone levels in men with ADAM.

## **The effect of Eurycoma Longifolia on the regulation of reproductive hormones in young males**

Kai Quin Chan 1 2 3, Claire Stewart 2, Neil Chester 2, Sareena H Hamzah 3, Ashril Yusof 3

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## Abstract

Eurycoma longifolia supplementation increases testosterone levels in humans via activation of the hypothalamic-pituitary-gonadal axis and/or the hypothalamic-pituitary-adrenal axis mainly in older adults and nonhealthy populations. This study aimed to assess the impact of Eurycoma longifolia on the hypothalamic-pituitary-gonadal and hypothalamic-pituitary-adrenal axes in healthy young males since this might promote functional testosterone prowess. Thirty-two males ( $24.4 \pm 4.7$  years;  $1.74 \pm 0.07$  m;  $73.7 \pm 8.4$  kg) in a placebo-controlled, double-blind, matched-paired study received 600 mg/day Eurycoma longifolia or placebo for two weeks. Blood analysis using repeated measures analysis of variance showed significant interaction and time effects for testosterone ( $F_{1,30} = 9.04$ ,  $p = .005$ ), free testosterone ( $F_{1,30} = 7.13$ ,  $p = .012$ ) and estradiol ( $F_{1,30} = 8.07$ ,  $p = .008$ ) levels in favour of the treatment group, while luteinising hormone, follicle-stimulating hormone and sexual hormone-binding globulin did not. The lack of changes in luteinising hormone and follicle-stimulating hormone levels suggests that a lesser role played by Eurycoma longifolia in activating the hypothalamic-pituitary-gonadal axis in the young adults. The raised testosterone level may be due to a greater rate of hormone production via the hypothalamic-pituitary-adrenal axis. The supplementation of Eurycoma longifolia for two weeks demonstrates steroidogenic effects on young men were dose-related. Consequently, the raised testosterone following Eurycoma longifolia supplementations could benefit muscle and strength gain in young adults.

## **Exercise associated or not to the intake of Eurycoma longifolia improves strength and cardiorespiratory fitness in men with androgen deficiency**

Alice Erwig Leitão 1, Melissa de Carvalho Souza Vieira 2, Diogo Almeida Gomes 3, Leonessa Boing 4, Andreia Pelegrini 5, Edson Luiz 6, Adriana Coutinho de Azevedo Guimarães 5

## Abstract

This study aims to analyze the effects of a concurrent training (CT) associated with Eurycoma longifolia (EL) supplementation on the muscle strength, cardiorespiratory fitness, and symptomatology score of men with the androgen deficiency of aging male (ADAM). Forty-five subjects ( $47.6 \pm 5.2$  years) were included in the study. The randomized, double-blinded, placebo controlled clinical trial lasted for 6 months. Participants were randomized into four groups, control (C;  $n = 12$ ); EL ( $n = 11$ ); CT ( $n = 11$ ); and CT + EL ( $n = 11$ ). Along this period, the isokinetic peak torque of the knee extensors increased in the CT (14%) and CT + EL (17%) groups ( $p = 0.040$ ;  $p = 0.006$ , respectively), while the isokinetic peak torque of knee flexion increased in the CT + EL group only ( $p < 0.05$ ). For all participants, testosterone levels were correlated with isokinetic peak torque of knee extension ( $r = 0.517$ ,  $p = 0.001$ ) and flexion ( $r = 0.362$ ,  $p = 0.028$ ). Subjects of the CT (27.3%) and CT + EL (36.1%) groups decreased the symptomatology of ADAM ( $p = 0.005$ ). This study demonstrated the benefits of CT and EL consumption as a non-pharmacological treatment for ADAM.