WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 14, Issue 15, 528-535. Review Article ISSN 2277–7105

ASHWAGANDHA FOR GYM PERFORMANCE: MYTH OR MEDICINE?

Janak Singh[1*] and Dr. Gurkirat Kaur[2]

[1*]Resident Intern, Babe Ke Ayurvedic Medical College and Hospital, Daudhar, Moga, India.
[2]Assistant Professor, Department of Panchkarma, Babe Ke Ayurvedic Medical College and Hospital, Daudhar, Moga, India.

Article Received on
13 June 2025,
Revised on 03 July 2025,
Accepted on 23 July 2025,
DOI: 10.20959/wjpr202515-37776

***Corresponding Author**
Janak Singh
Resident Intern, Babe Ke Ayurvedic Medical College and Hospital, Daudhar, Moga, India.

ABSTRACT

Ashwagandha (*Withania somnifera*), a revered adaptogenic herb from Ayurvedic medicine, is gaining recognition in modern fitness and wellness circles for its potential in enhancing muscle recovery, boosting physical performance, and improving overall well-being. Traditionally used for its rejuvenating and stress-relieving properties, Ashwagandha has shown promising effects in promoting muscle strength, reducing inflammation, and increasing endurance. Scientific studies reveal that Ashwagandha supplementation significantly improves muscle strength, increases muscle mass, and accelerates recovery after intense physical exercise. The herb also exhibits anti-inflammatory and cardioprotective effects, which contribute to its role in muscle repair and overall health. Furthermore, Ashwagandha's ability to improve sleep quality and reduce stress enhances its value for individuals engaged in strenuous physical activities. Recent human clinical trials highlight its efficacy in increasing testosterone levels, decreasing body fat, and promoting better physical performance. With its multifaceted benefits, Ashwagandha stands out as a natural and holistic alternative to synthetic supplements, offering a safer and more sustainable option for muscle enhancement and recovery.

KEYWORDS: *Ayurveda, Ashwagandha, Rasayana,* Immuno-modulator, Muscle booster, Cardioprotective.

INTRODUCTION

Ashwagandha (Withania somnifera), a renowned and potent adaptogenic herb that has been a cornerstone of Ayurvedic medicine for centuries, is now experiencing a remarkable surge in popularity within the modern fitness and wellness community. According to WHO, two-third of total population people are getting more active in physical activity like gym, bodybuilding etc.[1] In the modern era, many individuals rely heavily on synthetic supplements to enhance their physical performance and aid in muscle recovery. However, these supplements can sometimes have adverse effects on the body when used improperly or over extended periods. In contrast, Ashwagandha, a natural and time-tested herb from the Ayurvedic tradition, offers a safer and more holistic alternative. Among the Ayurvedic Rasayana herbs, Ashwagandha holds the most prominent place. It is known as "Sattvic Kapha Rasayana" Herb (Changhadi, 1938).[2] It has shown promising potential in supporting muscle recovery, reducing inflammation, and improving overall physical endurance. Additionally, Ashwagandha is well-regarded for its adaptogenic properties, helping to alleviate symptoms of anxiety and depression, which are common among those with intense training routines. As awareness grows about the long-term effects of synthetic supplements, more people are turning to Ashwagandha as a reliable and beneficial option for both physical and mental well-being.

DRUG REVIEW

Ashwagandha derives its name from the Sanskrit words 'ashwa' (horse) and 'gandha' (smell), as its fresh roots are said to emit a scent similar to that of a horse. It is an erect, branching shrub that typically grows to a height of 0.3 to 1.5 meters. It is recognised as one of the most important medicinal plants in Ayurveda. Ashwagandha is widely used for its Rasayana (rejuvenative) and Vajikarana (aphrodisiac) properties.[3]

ETYMOLOGY[3]

Common name	Ashwagandha
English name	Winter cherry
Botincal name	*Withania somifera*
Family	Solanaceae

VERNACULAR NAMES[4]

Hindi	*Asgandha*
Kannada	*Hiremaddina gida*
Malayalam	*Amukkuram*
Marathi	*Askandha*
Punjabi	*Asgandh*

Tamil	*Amukkaramkizangu*
Urdu	*Asgand*

IDENTIFICATION

- MACROSCOPIC: Roots straight, unbranched, thickness varying with age. roots bear fibre-like secondary roots, outer surface buff to grey-yellow with longitudinal wrinkles, crown consists of 2-6 remains of stem base, stem bases variously thickened, nodes prominent only on the side from where petiole arises, cylindrical, green with longitudinal wrinkles, fracture, short and uneven, odour, characteristic, taste, bitter and acrid.[4]

- MICROSCOPIC: Transverse section of root shows cork exfoliated or crushed, when present isodiamatric and non-lignified, cork cambium of 2-4 diffused rows of cells, secondary cortex about twenty layers of compact parenchymatous cells, phloem consists of sieve tubes, companion cells, phloem parenchyma, cambium 4-5 rows of tangentially elongated cells, secondary xylem hard forming a closed vascular ring separated by multiseriate medullary rays, a few xylem parenchyma.[4]

RASA-PANCHAKA[3]

Rasa	*Tikta, Kashya*
Guna	*Laghu, Snigdha*
Virya	*Ushna*
Vipaka	*Madhura*
Karma	*Balya, Brimhana*
Dosha karma	*Vatakaphara*
Action on Dhatu	*Sukra vardhaka*

Chemical composition: Somniferine, somniferinine, withanine, Nicotin, withansiol, withasomnine, tropine, withanolide, analygrine, anaferine, starch, Beta-sitosteral.[3]

Therapeutic indications : *Kasya, vatavyadhi, klaivya, switra, sotha, visha, vrna, Kasa, sopha, kandu, krimi, swasa*.[3]

DOSE - 3-6 g of the drug in powder form.[4]

SCIENTIFIC EVIDENCE OF PHYSIOLOGICAL EFFECTS OF ASHWAGANDHA

1. Anabolic effects: There was a significant increase in the body weights of the *Ashwagandha* treated group as compared to control for a period of 3 months in rats.[2]

2. Effect on physical performance: *Ashwagandha* was shown to increase swimming performance in rats as judged by increase in swimming time during physical endurance test. *Ashwagandha*'s antistress properties have been investigated in all these studies using adult rats were carried out by swimming endurance stress test. *Ashwagandha* treated animals showed a significant increase in the duration of swimming time as compared to control. The control group of mice swam for a mean time of 385 minutes, whereas the drugtreated animals continued to swim for a mean duration of 740 minutes. Thus, the swimming time was approximately doubled after Withania somnifera (WS) treatment.[2]

3. Anti Inflammatory Effect: *Ashwagandha* possessed marked anti-inflammatory effect against denaturation of protein *in vitro*. The present results exhibited a concentration dependent inhibition of protein (albumin) denaturation by the ashwagandha extract. The effect of diclofenac sodium was found to be less when compared with the test extract. The effect was plausibly due to the alkaloid and withanolide contents of Ashwagandha.[5]

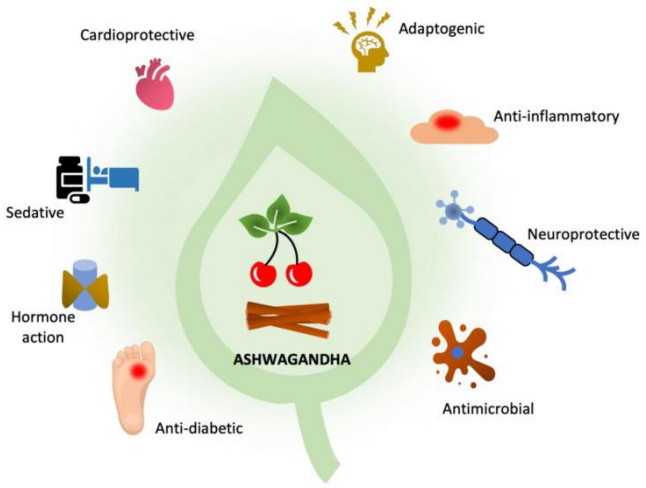
4. Cardioprotective Action: The effect of Ashwagandha was studied in a group of albino rats in which myocardial necrosis was induced by isoprenaline treatment. A decrease in glutathione levels and a decrease in the activity of superoxide dismutase, catalase, creatinine phosphokinase, and lactate dehydrogenase were observed in the group of rats treated with *Withania Somnifera*. Lipid peroxidation levels also decreased significantly. These results indicate that *Withania somnifera* has a cardioprotective effect in an experimental model of isoprenaline-induced necrosis in rats.[6]

5. Sleep Regulation: There have also been studies evaluating the effectiveness of *Withania somnifera* in the context of treating sleep deprivation. Sleep deprivation has a huge impact on the functioning of not only the brain, but also the entire body. A number of studies show that it significantly impacts the deterioration of mood and cognitive and motor functions. The findings of Baker et al.[104] suggest that Ashwagandha may have a positive impact on stress, sleep quality, energy levels, and mental clarity for college students. The study used qualitative analysis to assess the perceived impact of Ashwagandha on these factors, and the results indicated that participants who took Ashwagandha reported improvements in these areas compared to those who took a placebo.[6]

6. Increase muscle Strength: Ashwagandha supplementation has been shown to significantly increase muscle strength and to stimulate muscle renewal processes. In one study conducted, young healthy men were orally administered 300 mg of *Withania somnifera* root extract twice daily for eight weeks. These men also performed physical exercise—subjects participated in a structured resistance training program based on the publications of the National Strength and Conditioning Association (NSCA). A significant increase in muscle strength was observed in the treated patients, as well as an increase in muscle mass in the arms and chest. It was noted that in the Ashwagandha-supplemented patients, the level of exercise-induced muscle myocyte damage was significantly lower than in the placebo group, as indicated by the stabilisation of plasma creatine kinase levels. In addition, a significant increase in testosterone levels and a significant decrease in body fat were noted in the treated group.[126] Shenoy et al.,[127] in their study, confirmed that the group receiving Ashwagandha supplementation had significant improvements in several measures of cardiorespiratory endurance compared to the placebo group. Specifically, the Ashwagandha group showed a significant increase in maximal aerobic capacity, time to exhaustion, and ventilatory threshold. Additionally, the Ashwagandha group had lower levels of serum cortisol, a hormone associated with stress.[6]

7. In Sports Medicine: The athletes treated with Ashwagandha had significantly higher Total Quality Recovery Scores (TQR). An improvement in quality of life was observed in Ashwagandha-treated athletes (this was investigated based on results obtained from the DALDA—Daily Analysis of Life Demands for Athletes—questionnaire). It was estimated from the Recovery Stress Questionnaire (RESTQ) scores that treated athletes recovered more easily from exercise—they were less tired and had more energy—compared to the placebo group. A significant increase in antioxidant levels was also noted in the treated group. No adverse effects were observed throughout the study, indicating that this plant can be used safely.[6]

The Multispectrum effect of Ashwagandha is compiled in Figure No.1



DISCUSSION

Ashwagandha (*Withania somnifera*) has emerged as a valuable natural supplement for muscle repair and boosting physical performance. Scientific evidence underscores its efficacy in promoting muscle strength and enhancing recovery processes. Animal studies have demonstrated that Ashwagandha significantly increases body weight and muscle mass, suggesting its anabolic effects. Additionally, its ability to improve physical performance, such as increasing swimming endurance in rats, highlights its potential to enhance stamina and exercise capacity, benefiting athletes and fitness enthusiasts. One of the most important benefits of Ashwagandha is its anti-inflammatory action. It reduces protein denaturation, a common issue after intense exercise that can hinder muscle recovery. The herb's cardioprotective properties, evidenced by decreased oxidative stress and improved heart function in rats, further support its role in enhancing overall physical health during recovery. Moreover, Ashwagandha improves sleep quality, which is crucial for effective muscle repair and reducing stress levels that could otherwise impair recovery. In recent years, there has been a growing interest in the potential health benefits of Ashwagandha, particularly in the areas of stress management, cognitive function, and physical performance. Several studies have suggested that Ashwagandha supplementation may exhibit neuroprotective activity, be helpful in obsessive-compulsive disorder, and exhibit anti-inflammatory, immunomodulatory and antibacterial properties.[6] Studies have suggested that Ashwagandha may exhibit cardioprotective properties, be helpful in the treatment of sleep disorders, improve stress resilience, reduce anxiety, be helpful in hypothyroidism, and enhance muscle strength and recovery. Studies on humans have shown that Ashwagandha supplementation increases

muscle strength, particularly when combined with resistance training. This is accompanied by reduced muscle damage, lower cortisol levels, and enhanced testosterone levels—factors essential for muscle growth. Additionally, athletes have reported quicker recovery and better energy levels, making Ashwagandha a promising supplement for muscle repair and performance enhancement.

CONCLUSION

Ashwagandha is emerging as a powerful natural supplement for supporting muscle repair, enhancing physical performance, and improving overall health. Its anabolic effects, ability to reduce inflammation, and positive impact on sleep and stress recovery make it a valuable addition to the fitness and wellness community. Scientific evidence supports its role in increasing muscle strength and endurance while aiding in faster recovery from exercise-induced muscle damage. Furthermore, Ashwagandha's cardioprotective and anti-inflammatory properties, along with its ability to regulate stress hormones, position it as a holistic solution for athletes and individuals focused on muscle growth and physical well-being. As more people turn to natural alternatives for health optimization, Ashwagandha presents a promising option that integrates centuries of Ayurvedic wisdom with modern scientific validation.

REFERENCE

1. Strain, T., Flaxman, S., et al. National, regional, and global trends in insufficient physical activity among adults from 2000 to 2022: a pooled analysis of 507 population-based surveys with 5.7 million participants. The Lancet Global Health (2024).
2. Singh, N., Bhalla, M., De Jager, P. and Gilca, M. (2011). An Overview on Ashwagandha: A Rasayana (Rejuvenator) of Ayurveda. *African Journal of Traditional, Complementary and Alternative Medicines*, 8(5S). doi:https://doi.org/10.4314/ajtcam.v8i5s.9.
3. Dr. Prakash L. Hegde and Dr. Harini A (n.d.). *A textbook of Dravyaguna Vijnana*. Reprint 2015 ed. New Delhi: Chaukhambha Publications, 93–99.
4. THE AYURVEDIC PHARMACOPOEIA OF INDIA PART-I VOLUME -I GOVERNMENT OF INDIA MINISTRY OF HEALTH AND FAMILY WELFARE DEPARTMENT OF AYUSH. (n.d.). [online] 19–20. Available at: https://www.ayurveda.hu/api/API-Vol-1.pdf.

5. Chandra, S., Chatterjee, P., Dey, P. and Bhattacharya, S. (2012). Evaluation of Anti-inflammatory Effect of Ashwagandha: A Preliminary Study in vitro. *Pharmacognosy Journal*, 4(29): 47–49. doi:https://doi.org/10.5530/pj.2012.29.7.
6. Mikulska, P., Malinowska, M., Ignacyk, M., Szustowski, P., Nowak, J., Pesta, K., Szeląg, M., Szklanny, D., Judasz, E., Kaczmarek, G., Ejiohuo, O.P., Paczkowska-Walendowska, M., Gościniak, A. and Cielecka-Piontek, J. (2023b). Ashwagandha (Withania somnifera)—Current Research on the Health-Promoting Activities: A Narrative Review. *Pharmaceutics*, [online] 15(4): 1057. doi:https://doi.org/10.3390/pharmaceutics15041057.