



Review Article

ASPHALTUM PUNJABIANUM (SHILAJIT): UNRAVELING MYTHS WITH SCIENTIFIC EVIDENCE

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ABSTRACT

Shilajit is a mineral-rich resin that has a long history of use as a rejuvenator (*Rasayana*) in Ayurvedic medicine to treat various ailments such as arthritis, infertility, and cognitive decline. Although it is becoming increasingly popular, with more scientific validations, many myths still surround its actual clinical potential. This review directly debunks several persistent myths about *Shilajit* based on a critical evidence-based analysis. Among the key myths addressed is the notion that only men should take *Shilajit*, that it is solely a sexual health enhancer, that it works acutely, and that its supplements can be contaminated, rendering them inherently unsafe or unnatural. According to scientific sources, *Shilajit* is beneficial for both men and women, and it has been proven to contribute to bone health, metabolic processes, antioxidation, and cognitive enhancement. Rather than acting as an acute stimulant, *Shilajit* functions more as a slow-acting adaptogen that must be taken continuously over several weeks to produce observable physiological adaptations. It is also well-tolerated even in very high doses, as indicated by its toxicological and clinical safety data, provided it is purified. The concerns regarding contamination are addressed through purification, with the majority of certified products meeting global safety standards. Secondary myths, including the belief that *Shilajit* causes constipation, is inadvisable to use in summer, or leads to kidney stones, are also disproven by clinical and preclinical evidence. Ultimately, one can conclude that *Shilajit* is an effective and safe multilateral nutraceutical with diverse therapeutic potential. This review advocates for its incorporation into modern healthcare through science-based, myth-busting integration and challenges clinicians to base their recommendations on usage grounded in empirical evidence and quality assurance.

INTRODUCTION

Shilajit is a mineral-rich natural resin that oozes out of rocks in high mountains. Traditionally, it has been considered in Ayurvedic medicine as *Rasayana* (rejuvenator) to promote longevity and to cure a variety of ailments, including arthritis, diabetes, cognitive disorders, and infertility [1]. Some of these traditional claims are beginning to be confirmed by modern research [2]. The complex phytochemistry of *Shilajit*, which is rich in fulvic acids and trace minerals, supports a wide pharmacological profile. It is referred to as a powerful and very safe nutraceutical that can

help restore energetic balance and prevent various diseases [3]. Despite the increasing research supporting its benefits, several long-standing myths still make some medical practitioners skeptical about the role of *Shilajit* in modern clinical settings. While *Shilajit* has a rich history of therapeutic use, various misconceptions hinder its broader application in clinical practice. Common myths include the belief that it is ineffective for women, that it functions only as a sexual enhancer, or that its effects are immediate upon ingestion. Additionally, there are frequent misconceptions that *Shilajit* is neither safe nor natural, that commercially available products may be impure or contaminated, and concerns that it could cause constipation, should not be taken during summer, is unsuitable for regular daily use, or may lead to kidney stones.

Contrary to these misconceptions, scientific evidence presents a markedly different perspective. This review aims to act as a comprehensive guide to

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debunk these myths using science-based and research-backed evidence. To the best of our knowledge, this is the first review to date dedicated solely to addressing and correcting common misconceptions about *Shilajit* through a rigorous, evidence-informed approach.

Myth: *Shilajit* is Only for Men

Some believe that *Shilajit* is effective solely for men and related to sexual health or testosterone. This misconception likely arises from its frequent marketing as a male aphrodisiac. However, scientific research suggests that *Shilajit* can positively impact the health and overall well-being of all genders. For example, a randomized controlled trial investigated the effects of *Shilajit* in postmenopausal women with osteopenia [4]. That 48-week trial found that daily supplementation of *Shilajit* (250-500 mg) significantly maintained bone mineral density in women compared to a placebo by reducing bone turnover and markers of oxidative stress [4]. This indicates that *Shilajit* supports women's bone health and reduces the risk of osteoporosis. In addition, the antioxidant and anti-inflammatory properties of *Shilajit*, including the reduction of malondialdehyde (MDA) and C-reactive protein, benefit both men and women [4].

Mosavi et al, 2023 conducted a triple-blind clinical trial on reproductive women for 60 days. The study concluded that there is an increase in female sexual function and no adverse effects were reported in women [5]. In another study involving healthy adults of mixed gender, *Shilajit* demonstrated improved lipid profiles, including lower cholesterol and triglycerides, increased HDL, and enhanced antioxidant status after

45 days, with no adverse vital signs [6]. These results indicate that the adaptogenic and metabolic properties of *Shilajit* are not limited to men [6]. Ancient Ayurvedic texts view *Shilajit* as a comprehensive rejuvenator that boosts strength and overall health for everyone. In summary, clinical evidence undermines the notion that *Shilajit* is solely a male nutraceutical; women have also seen significant benefits, including enhancements in bone metabolism and antioxidant capacity from using this supplement.

Myth: *Shilajit* is Purely a Sexual Enhancer

Shilajit has often been stereotyped as merely a natural sexual tonic or libido enhancer, suggesting that it serves only to boost male sexual performance. While there are reproductive health benefits associated with *Shilajit*, it is not a one-dimensional aphrodisiac. Contemporary science suggests that *Shilajit* has multi-system pharmacological action, including antioxidant, anti-inflammatory, adaptogenic, neuroprotective, anti-thyroid, anti-epilepsy, hepatoprotective, Liver protective, anti-ulcer, cardioprotective and metabolic effects, which far exceed its sexual-boosting properties as shown in Figure 1 [7-12]. For instance, Pandit et al, 2016 showed in a double-blind study that 90 days of purified *Shilajit* (500mg/day) increased total and free testosterone by about 20 percent in men aged 45-55, suggesting pro-androgenic effects and support for fertility [13]. Yet, the role of *Shilajit* as a “revitalizer” can be applied to the domain of enhancement of physical activity and reduction of fatigue through the increase of mitochondrial ATP generation. [14]

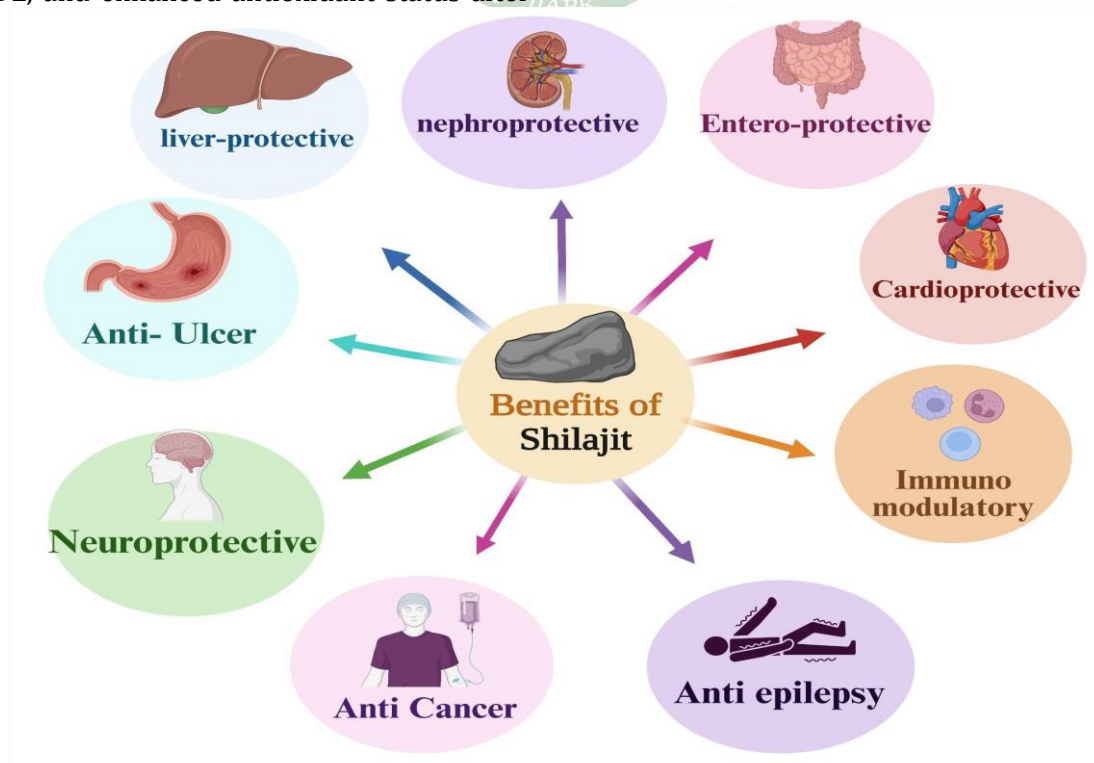


Figure 1. Benefits of *Shilajit* other than sexual performance

In a 2019, Keller et al, 2019 found that eight weeks of *Shilajit* (500mg daily) attenuated exercise-related fatigue and muscle strength in young adults with adaptogenic implications on muscle and connective tissue [15]. *Shilajit* is also being investigated for its cognitive effects: its main constituent, fulvic acid, can inhibit the aggregation of tau proteins, suggesting potential in the treatment of Alzheimer's disease. The research by Gallardo et al, 2012 refers to *Shilajit* as a "highly effective and very safe dietary supplement" that has neuroprotective properties [16]. In addition, *Shilajit* has anti-ulcer, anti-diabetic, immunomodulatory, and anti-dyslipidemic effects in preclinical research, and a small clinical trial reported a significant decrease in serum triglycerides and cholesterol among human volunteers [17,18]. Briefly, *Shilajit* is a broad-spectrum nutraceutical. It may also enhance libido, sperm parameters, and testosterone, but it also contributes to metabolic balance, stress resilience, and brain health. It is not a herbal "Viagra" – unlike acute erectile drugs, *Shilajit* is holistic and slow-acting, building vigor and resilience generally across many organ systems.

Myth: *Shilajit* Works Immediately

Others may expect *Shilajit* to work immediately- they may desire a quick energy boost or overnight sexual performance. However, *Shilajit* is not an acute stimulant; it is a natural adaptogen whose benefits are experienced after regular use over time. Clinical studies consistently provide *Shilajit* daily over several weeks or months to achieve substantial results, indicating that it has a cumulative, rather than an immediate, effect. For example, in the previously mentioned testosterone trial, subjects used *Shilajit* for 90 days before observing a noticeable rise in hormones. [13]

Similarly, Pingali et al, 2022 in their postmenopausal bone health trial administered *Shilajit* over a period of 24 to 48 weeks to achieve a noticeable improvement in bone density and a reduction in inflammatory markers. Additionally, the fatigue-reducing effects of *Shilajit* on athletes were not apparent immediately but emerged after 8 weeks of taking the supplement [4]. These time scales indicate that the positive effects of *Shilajit* are cumulative, promoting physiological homeostasis (e.g., satisfactory mitochondrial performance, antioxidant capacity, endocrine regulation) rather than delivering a medication bolt. Contrary to quick-acting drugs, a single dose of *Shilajit* does not result in drastic acute changes. Instead, the benefits are usually noticeable after a few weeks of consistent use, as the body's systems optimize. This aligns with *Shilajit* being used in Ayurveda as a *Rasayana*, a health-promoting tonic taken regularly [19]. It is important to inform patients

that *Shilajit* is not a fast-acting panacea; however, with regular use (usually 1-3 months or more), they may experience an increase in stamina, metabolism, and vitality. It is also essential to set realistic expectations regarding its timeline for action: as with most supplements, consistency is key to experiencing the full benefits of *Shilajit*.

Myth: *Shilajit* is Unsafe or Unnatural

Another myth is that *Shilajit* is not safe to take, perhaps because it grows in such an exotic location or due to concerns about contamination, or because it is viewed as an unnatural substance like a drug or steroid. However, the scientific literature indicates that quality-controlled *Shilajit* is natural and extremely safe as a supplement. Chemically, *Shilajit* is a 100 percent natural phytocomplex that develops over centuries through the breakdown of plant matter in the mountainous climate [17]. It consists of humic substances (60-80% fulvic acids) and natural minerals and trace elements [17]. Instead of being some artificial or anabolic medication, *Shilajit* is essentially a concentrated natural product, a so-called mineral pitch or resin, which has found its place in traditional medicine over millennia [20]. In a published literature, Stohs et al, 2014 concluded that *Shilajit's* safety is well documented in the scientific literature [20]. *Shilajit* does not show any marked toxicity at standard doses; indeed, it has been termed a "highly potent and very safe dietary supplement" [20].

A broad safety margin is demonstrated in toxicology studies. Velmurugan et al, 2012 exposed rats to very high doses of *Shilajit*, up to 5,000mg/kg; after 91 days, no major organ damage was reported, along with a lack of clinical toxicity [21]. They concluded that *Shilajit* was safe for dietary supplementation, even in high doses, during long-term use [21]. Human trials have not reported significant adverse effects or alterations in organ system function at commonly used doses (200-500 mg twice daily) [21]. For example, in an oligospermia trial, 90 days of *Shilajit* had no impact on liver or kidney functions in stub tests, and tolerability was good [13,22]. *Shilajit* should also be acquired from reliable sources; however, *Shilajit* as a substance (when purified) does not contain any harmful or artificial substances itself. It functions by influencing natural processes in the body (i.e., production of energy and hormones) and has even shown protection against oxidative stress and inflammation rather than causing harm [13,22]. In conclusion, *Shilajit* supplements have a strong safety record in clinical studies. The common suggestion of care (to check the quality and proper dosage of the product) should be provided by healthcare providers, yet the sweeping idea that *Shilajit* is dangerous lacks a logical scientific basis. Conversely, it is esteemed for its adaptogenic health

benefits and does not exhibit significant toxic-like effects in research [22]

Myth: *Shilajit* is Impure or Tainted

There is a question about whether *Shilajit* supplements are inherently tainted, contaminated with heavy metals, toxins, or adulterants, and therefore unsafe to consume. This stems from the nature of raw *Shilajit* being scraped from the faces of rocks, which may potentially include dirt or metals, and reports suggest that some low-quality products could be contaminated. Authentic, unadulterated *Shilajit* is free from hazards and hygienic, yet its extraction and preparation are crucial. The reality is that the composition of raw *Shilajit* (raw, uncooled) contains various minerals and even heavy metals derived from its geological formation [23]. However, these impurities are eliminated through purification processes, "*Shodhana*," used in traditional Ayurvedic practice or by modern supplement manufacturers [24]. When properly purified, *Shilajit* meets international heavy metal safety standards. An analytical review by Hussain et al, 2024 compiled information on heavy metal content in *Shilajit* and reported that, in the studies, concentrations of toxic metals such as lead, arsenic, cadmium, and mercury were well below permissible limits set by the WHO/FDA in most tested samples of *Shilajit* [25]. It is worth noting that *Shilajit* contains natural, organic fulvic/humic acids that, to some degree, can bind and detoxify heavy metals, possibly lowering their bioavailability.

Quality control is crucial, as mentioned in the same review, due to cases of metal concentration exceeding safe limits, which typically results from improper sourcing or lack of purification. Regulatory vigilance is recommended; Carrasco-Gallardo et al, 2012 state that unprocessed *Shilajit* can be risky because of potential heavy metal or mycotoxin exposure, so only processed, lab-tested *Shilajit* should be ingested by humans [16]. In fact, *Shilajit* should never be used in unpurified form; until cleansed, it can be lethally toxic. Purification removes naturally occurring lead, arsenic, and other hazardous substances, making it safe. In cases where credible manufacturers process *Shilajit*, they apply filtration and standardization to eliminate any harmful contaminants that might be present. Many clinical trials using standardized *Shilajit* extracts, such as PrimaVie®, report rigorous quality testing, and those products have shown no signs of contamination in safety analyses [26].

Other Common Myths

Beyond the major myths mentioned above, several secondary misconceptions about *Shilajit* deserve clarification. These include concerns regarding its effects on digestion, seasonal use, and renal health. Some believe that *Shilajit* causes constipation. However, the truth is that scientifically, there can be no constipation effects from *Shilajit* when taken at recommended doses. Constipation is not listed as a side effect in any of the clinical studies on *Shilajit*; in general, it is considered to be well tolerated gastro-intestinally. Instead, some traditional sources have suggested that *Shilajit* may aid digestion in activities such as treating hemorrhoids and boosting appetite (anorexia) according to Ayurvedic texts [27]. Another common myth is that *Shilajit* is not recommended for habitual (daily) use during the summer. This belief is one of the myths stemming from a misconception about the heating quality of *Shilajit* in Ayurveda. No clinical evidence has shown that *Shilajit* is harmful during hot summer weather or that it requires seasonal cycling. Recent research has demonstrated continuous *Shilajit* dosing for months and across seasons without issues. The effectiveness of *Shilajit* is independent of the season, allowing for its daily use. Indeed, many benefits, such as the preservation of bone density and cognitive support, rely on consistent daily supplementation for the long term [4].

Shilajit is often believed to cause the formation of kidney stones. This misconception may arise from the presence of mineral substances in *Shilajit*, leading to concerns about its potential role in kidney stone development. However, there is no clinical research linking *Shilajit* to kidney stones. On the contrary, *Shilajit* has traditionally been used to address urinary and kidney issues and published evidence is also supporting this fact [28]. Studies highlight *Shilajit's* role as a dissolving agent for renal calculi (kidney stones) and its diuretic properties when prescribed [28]. *Shilajit* fulvic acid also has the ability to bind minerals and may indeed prevent crystallization of minerals in the urinary tract (level of evidence needed) [28]. The recent examination of the composition of *Shilajit* has proven that this product contains compounds that could potentially benefit urinary health and mineral balance [28]. The details of some important myths and related facts are shown in Table 1.

Table 1: Common myths related to *Shilajit* and the associated scientific facts

Myths	Scientific Reality
<i>Shilajit</i> is only for men	Effective for both men and women, benefits include bone health, antioxidation, cognitive support, and more.
Only a sexual enhancer	Multi-functional: neuroprotective, adaptogenic, metabolic, and anti-inflammatory

Works instantly	Slow-acting adaptogen; effects observed after weeks to months of regular use.
Unsafe or unnatural	100% natural with fulvic acids and minerals; safe in clinical doses.
All products are impure	Purified <i>Shilajit</i> complies with safety standards; verify lab-tested sources.
Causes constipation	No evidence from clinical trials; generally, well tolerated gastrointestinally.
Unsafe in summer	No seasonal limitations; long-term use is safe and effective year-round

Clinical updates on *Shilajit*: An evidence-based approach against common myths and data supporting the facts

Although it has been widely used since ancient times, *Shilajit* has often been regarded as unproven or unsafe. However, increasing clinical evidence is now disproving these historical claims by demonstrating significant health benefits and a strong safety profile across multiple areas, as shown in Figure 2 and Table 2.

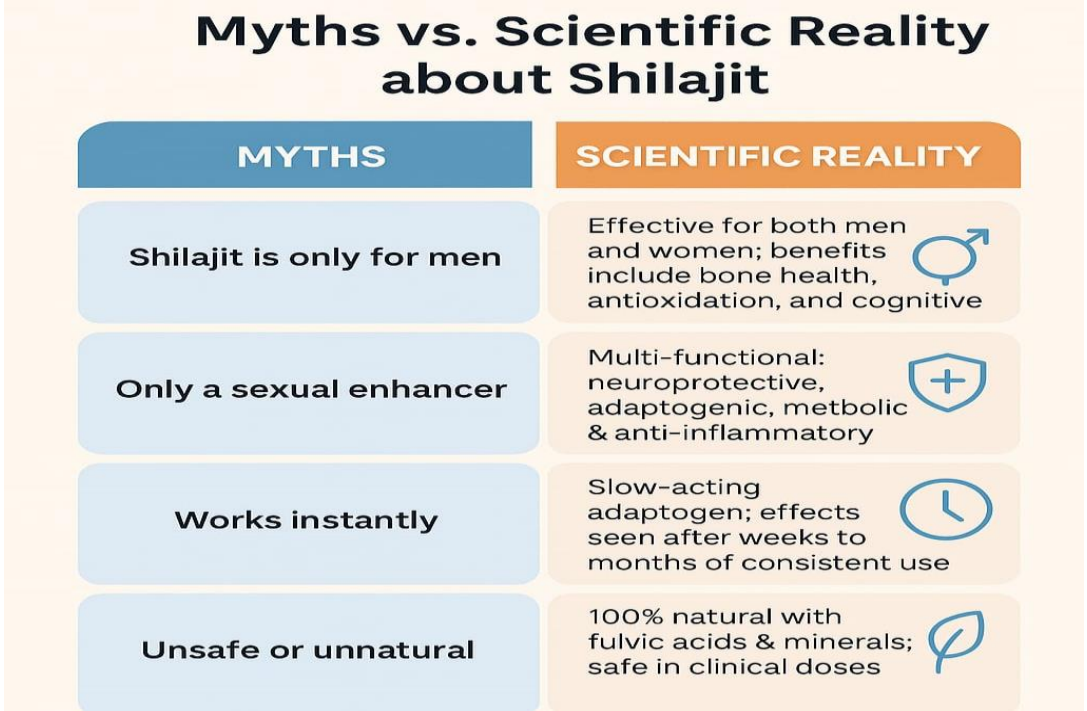


Figure 2. Myths and facts for *Shilajit*

In terms of physical performance, controlled trials have shown that *Shilajit* positively affects exercise capacity and fatigue. An 8-week study on overweight adults (250mg twice daily) reported similar results, upregulating muscle repair genes and improving musculoskeletal adaptation, with no toxic effects reported [26]. Another trial (600 subjects) found that a larger dose (500 mg/day) maintained muscle strength during exhaustion (reducing force by only 9% compared to 17% with placebo) and curbed collagen degradation, indicating better recovery. Also, taking *Shilajit* supplementation in men intensified the production of type I collagen, which further supports its role in tissue regeneration and robustness [15]. Similarly, a 90-day clinical involving healthy males (aged 45-55) have demonstrated that purified *Shilajit* significantly increased total and free testosterone (and DHEA-S) compared to a placebo [13]. Another study demonstrated that taking 100 mg of *Shilajit* twice daily

in men with oligospermia resulted in over a 60 percent increase in sperm count and enhanced sperm motility, along with decreased seminal oxidative stress. [22]

Shilajit has demonstrated significant anti-diabetic effects. In a study involving patients with type 2 diabetes, a herbal regimen called "Dolabi," which includes *Shilajit*, resulted in approximately a 20% reduction in fasting glucose and HbA1c, comparable to metformin [29]. Similar findings were observed in other studies where *Shilajit* significantly reduced blood glucose and HbA1c levels, positively impacting diabetic symptoms and lipid profiles [30]. These findings highlight the anti-diabetic properties and safety of *Shilajit* as an adjunctive therapeutic agent.

Cardiovascular results further confirm the safety and efficacy of *Shilajit* based on evidence. In healthy individuals, 45 days of treatment with a high dose of *Shilajit* (2 g daily) led to reduced serum

triglycerides and LDL cholesterol levels, while also raising protective HDL levels, all without negative impacts on blood pressure or other clinical parameters [6]. Another study involving adjunct *Shilajit* (500mg twice daily) demonstrated a reduction in oxidative stress and an increase in antioxidants among hypertensive older individuals, without negatively affecting arterial stiffness or the safety profile [18]. These advancements dispel the myths about *Shilajit* being unsafe, highlighting its hypolipidemic and antioxidative effects in humans.

Clinical studies also support the wound-healing and dermatologic effects of *Shilajit*. In a 14-week study, middle-aged women who used *Shilajit* (up to 250mg twice daily) showed improved microcirculation of the skin, as well as increased expression of genes involved in collagen synthesis and blood vessel growth, with no negative impact on skin health [31]. Likewise, a double-blind randomized trial on patients with ulcers indicated that the topical application of *Shilajit*

dressing once daily significantly expedited the wound healing process (ulcer area diminished to 83% over 28 days, compared to placebo) [32]. This enhanced healing is linked to the skin-healing properties of *Shilajit*, as it promotes type I collagen synthesis and dispels myths regarding *Shilajit's* effects. Musculoskeletal health data also reinforces evidence against the myths surrounding *Shilajit*. *Shilajit* supplementation (250-500mg/d) significantly improved bone mineral density in osteopenic postmenopausal women, showing a notable increase compared to the bone loss observed in the placebo group over 48 weeks [4]. Treated groups also exhibited positive changes in bone turnover markers and decreased inflammatory and oxidative stress markers, indicating that bone health remained intact. Furthermore, oral *Shilajit* (1g daily) led to much faster fracture healing in patients, with no corresponding increase in adverse events among those recovering from tibial fractures [33].

Table 2: Various clinical studies published for the *Shilajit*

Study Objective	Participants	Intervention / Dose	Duration	Study Type	Ref.
Shilajit's effects on skeletal muscle repair	16 overweight adults	PrimaVie® <i>Shilajit</i> 250 mg twice/day + treadmill exercise	8 week + 4-week	Randomized Controlled Trial (RCT)	[26]
Assessment of collagen synthesis in active males	Recreationally trained men	500 mg/day or 1000 mg/day of <i>Shilajit</i>	8 weeks	Randomized, Double-Blind, Placebo-Controlled Trial	[34]
Impact on female sexual function	43 reproductive-age women	<i>Shilajit</i> 200 mg twice daily	60 days	Triple-Blind, Placebo-Controlled Trial	[5]
Compare herbal vs. standard care in hyperglycemia	212 adults with high blood sugar	Dolabi® (with <i>Shilajit</i>) vs. Metformin	3 months	Open-Label, Randomized Comparative Study	[29]
Ayurvedic interventions for diabetes	Patients with type 2 diabetes	<i>Shilajit</i> vs. <i>Asanadi Ghana Vati</i>	3 months	Comparative Clinical Trial	[30]
<i>Shilajit</i> in pre-diabetic patients	30 pre-diabetic individuals	<i>Shilajit Vati</i>	30 days	Observational / Open-Label Trial	[35]
Assessment of traditional Ayurvedic combo therapy	Type 2 diabetic patients with neuropathy	<i>Shilajit</i> Yoga + <i>Panchakarma</i>	Not specified	Interventional (Comparative Ayurvedic)	[36]
Androgenic effects of <i>Shilajit</i>	Healthy men (aged 45–55)	Purified <i>Shilajit</i> 250 mg twice/day	90 days	Double-Blind, Randomized, Placebo-Controlled Trial	[13]
Lipid and antioxidant effects	Healthy volunteers	<i>Shilajit</i> 2 g/day	45 days	Double-Blind, Placebo-Controlled Trial	[6]
Antioxidant support in elderly with hypertension	60 elderly hypertensive patients	<i>Shilajit</i> 500 mg twice/day + medication	30 days	Randomized Controlled Trial (RCT)	[18]
Improve skin vascularity and structure	Middle-aged women	<i>Shilajit</i> 125 mg or 250 mg twice/day	14 weeks	Double-Blind, Placebo-Controlled Trial	[31]

Effects on bone density in postmenopausal women	60 women with osteopenia	Aqueous <i>Shilajit</i> 250 or 500 mg/day	48 weeks	Randomized, Double-Blind, Placebo-Controlled Trial	[4]
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CONCLUSION

Shilajit, often referred to as the “destroyer of weakness” in Ayurveda, is a compelling and potent natural nutraceutical whose reputation has been clouded by myths. Considering clinical evidence and peer-reviewed research, the conclusion is that *Shilajit* is not solely a male aphrodisiac, nor is it an immediate miracle pill; rather, it is a multi-beneficial adaptogen that can support energy metabolism, hormonal homeostasis, and resilience over time in both men and women. With proper and refined usage, the safety and extensive therapeutic potential of *Shilajit* have been well established, including benefits for bone health, anti-fatigue properties, neuroprotection, and metabolic functions. The development of an evidence base should enable healthcare professionals to view *Shilajit* in an evidence-informed manner. This involves understanding its true value (as demonstrated through clinical studies and reports) while addressing unwarranted concerns about its safety or applicability. When counseling patients, it is important to set realistic expectations (at least 1-2 weeks to achieve full effect) and to recommend only high-quality *Shilajit* products that have been certified. By doing so, practitioners can offer patients a safe opportunity to explore the ancient concepts of *Shilajit* as a *Rasayana* while applying a modern scientific understanding, representing a proper evidence-based approach to utilizing this ancient medicine.

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