



MRUSH Capsules: A Natural Impotence Treatment for Erectile dysfunction in Men

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ABSTRACT

Erectile dysfunction (ED), also known as impotence, is a type of sexual dysfunction characterized by the inability to develop or maintain an erection of the penis during sexual activity. ED can have psychological consequences as it can be tied to relationship difficulties and self-image.

Traditional herbs have been a revolutionary breakthrough in the management of erectile dysfunction and have become known world-wide as an 'instant' treatment. The modern view of the management of erectile dysfunction subscribes to a single etiology, i.e. the mechanism of erection. A large number of pharmacological agents are orally consumed and vasoactive agents inserted intraurethrally or injected intrapenially to regain good erection. Modern phytochemicals have developed from traditional herbs. Phytochemicals focus their mechanism of healing action to the root cause, i.e. the inability to control the proper function of the whole body system. Hence phytochemicals manage erectile dysfunction in the frame of sexual dysfunction as a whole entity. The present paper Reviews the Role of MRUSH capsules developed by R&D cell of LactonovaNutripharm Pvt Ltd. Hyderabad a, A parent company of PUGOS Products Pvt. Ltd. Bangalore. As a Natural Impotence Treatment for Erectile dysfunction in Men.

Keywords: Quercetin, Co-crystals, Preparation & characterization, Dissolution profile

INTRODUCTION

Erectile dysfunction (ED), also known as impotence, is a type of sexual dysfunction characterized by the inability to develop or maintain an erection of the penis during sexual activity. ED can have psychological consequences as it can be tied to relationship difficulties and self-image. A physical cause can be identified in about 80% of cases.¹ These include cardiovascular disease, diabetes mellitus, neurological problems such as following prostatectomy, hypogonadism and drug side

effects. Psychological impotence is where erection or penetration fails due to thoughts or feelings; this is somewhat less frequent, in the order of about 10% of cases. In psychological impotence, there is a strong response to placebo treatment. The term *erectile dysfunction* is not used for other disorders of erection, such as priapism. Treatment involves addressing the underlying causes, lifestyle modifications, and addressing psychosocial issues. In many cases, a trial of pharmacological therapy with

a PDE5 inhibitor, such as sildenafil, can be attempted. In some cases, treatment can involve inserting prostaglandin pellets into the urethra, injecting smooth muscle relaxants and vasodilators

into the penis, a penile prosthesis, a penis pump, or vascular reconstructive surgery.² It is the most common sexual problem in men.³

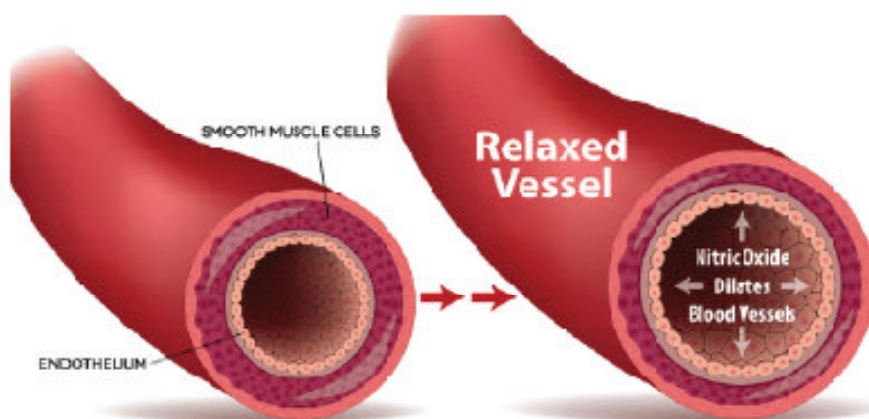


Fig. 1

Signs and symptoms

ED is characterized by the regular or repeated inability to achieve or maintain an erection of sufficient rigidity to accomplish sexual activity. It is defined as the "persistent or recurrent inability to achieve and maintain a penile erection of sufficient rigidity to permit satisfactory sexual activity for at least 3 months.¹

Psychological impact

ED often has an impact on the emotional well-being of both men and their partners. Many men do not seek treatment due to feelings of embarrassment. About 75% of diagnosed cases of ED go untreated.⁴

Causes of or contributors to ED include the following:

- Prescription drugs (e.g., SSRIs,⁵ beta blockers, alpha-2 adrenergic receptor agonists, thiazides, hormone modulators, and 5 α -reductase inhibitors)³
- Neurogenic disorders (e.g., diabetic neuropathy, temporal lobe epilepsy, multiple sclerosis, Parkinson's disease, multiple system atrophy)⁶
- Cavernosal disorders (e.g., Peyronie's disease)⁷
- Hyperprolactinemia (e.g., due to a prolactinoma)³

- Psychological causes: performance anxiety, stress, and mental disorders^[8]
- Surgery (e.g., radical prostatectomy)⁹
- Aging: It is four times more common in men aged in their 60s than those in their 40s.¹⁰
- Kidney failure
- Lifestyle habits, particularly smoking, which is a key risk factor for ED as it promotes arterial narrowing.^{11-13.}

Surgical intervention for a number of conditions may remove anatomical structures necessary to erection, damage nerves, or impair blood supply.⁹ ED is a common complication of treatments for prostate cancer, including prostatectomy and destruction of the prostate by external beam radiation, although the prostate gland itself is not necessary to achieve an erection. As far as inguinal hernia surgery is concerned, in most cases, and in the absence of postoperative complications, the operative repair can lead to a recovery of the sexual life of people with preoperative sexual dysfunction, while, in most cases, it does not affect people with a preoperative normal sexual life.¹⁴

ED can also be associated with bicycling due to both neurological and vascular problems due to compression.¹⁵ The increase risk appears to be about 1.7-fold.¹⁶ Concerns that use of pornography can cause ED¹⁷ have little support in epidemiological studies, according to a 2015 literature review.¹⁸

Pathophysiology of Erectile dysfunction

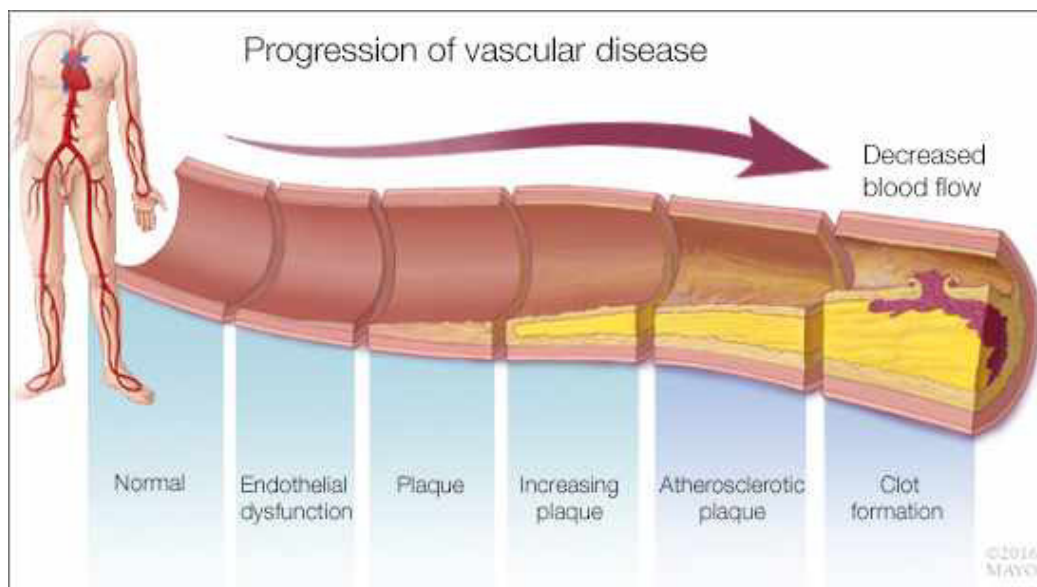


Fig.2

Penile erection is managed by two mechanisms: the reflex erection, which is achieved by directly touching the penile shaft, and the psychogenic erection, which is achieved by erotic or emotional stimuli. The former uses the peripheral nerves and the lower parts of the spinal cord, whereas the latter uses the limbic system of the brain. In both cases, an intact neural system is required for a successful and complete erection. Stimulation of the penile shaft by the nervous system leads to the secretion of nitric oxide (NO), which causes the relaxation of smooth muscles of corpora cavernosa (the main erectile tissue of penis), and subsequently penile erection. Additionally, adequate levels of testosterone (produced by the testes) and an intact pituitary gland are required for the development of a healthy erectile system. As can be understood from the mechanisms of a normal erection, impotence may develop due to hormonal deficiency, disorders of the neural system, lack of adequate penile blood supply or psychological problems.¹⁹ Spinal cord injury causes sexual dysfunction including ED. Restriction of blood flow can arise from impaired endothelial function due to the usual causes associated with coronary artery disease, but can also be caused by prolonged exposure to bright light.

DIAGNOSIS

In many cases, the diagnosis can be made based on the person's history of symptoms. In other cases, a physical examination and laboratory

investigations are done to rule out more serious causes such as hypogonadism or prolactinoma.¹ One of the first steps is to distinguish between physiological and psychological ED. Determining whether involuntary erections are present is important in eliminating the possibility of psychogenic causes for ED.¹ Obtaining full erections occasionally, such as nocturnal penile tumescence when asleep (that is, when the mind and psychological issues, if any, are less present), tends to suggest that the physical structures are functionally working.²⁰⁻²¹ Similarly, performance with manual stimulation, as well as any performance anxiety or acute situational ED, may indicate a psychogenic component to ED.

Other factors leading to ED are diabetes mellitus, which is a well-known cause of neuropathy). ED is also related to generally poor physical health, poor dietary habits, obesity, and most specifically cardiovascular disease, such as coronary artery disease and peripheral vascular disease. Screening for cardiovascular risk factors, such as smoking, dyslipidemia, hypertension, and alcoholism is helpful. In some particular cases, the simple search for a previously undetected groin hernia can prove useful since it can affect sexual functions in men and is relatively easily curable.¹⁴

Traditional herbs have been a revolutionary breakthrough in the management of erectile dysfunction and have become known world-wide as an 'instant' treatment. The modern view of the management of erectile dysfunction subscribes to a

single etiology, i.e. the mechanism of erection. A large number of pharmacological agents are orally consumed and vasoactive agents inserted intraurethrally or injected intrapenially to regain good erection. Modern phytochemicals have developed from traditional herbs. Phytochemicals focus their

mechanism of healing action to the root cause, i.e. the inability to control the proper function of the whole body system. Hence phytochemicals manage erectile dysfunction in the frame of sexual dysfunction as a whole entity.

COMPOSITION OF MRUSH CAPSULES

Supplement Facts		
Serving Size : 3 Capsules		Servings Per Pack : 10
Each capsule contains :	% ICMR	RDA*
L-Arginine	140 mg	**
Cordyceps Militaris	100 mg	**
Tribulus Terrestris Extract (Saponins 40%)	90 mg	**
Ashwagandha Extract (Contains Withanolides 5%)	70 mg	**
Red Korean Ginseng	70 mg	**
Ginkgo Biloba extract	30 mg	**
Standardized extract containing min.24% Ginkgo flavonoglycosides and 6% Terpene Lactones		
Mucuna Pruriens extract(Levodopa 10%)	30 mg	**
Asparagus Adscendens Extract (Saponin 30%)	40 mg	**
Kola nut (Caffeine Theobromine 10%)	25 mg	**
Euphorbia Royleana (50%)	25 mg	**
Cayenne extract (Saicinoids 5%)	15 mg	**
Selenium	13 mcg	33
Piper nigrum extract	4 mg	
Zinc	4 mg	33
Pantothenic Acid	1.5 mg	30
Pyridoxine HCL	0.65 mg	33
Iron	5 mg	30
Niacin	6 mg	33
Riboflavin	0.5 mg	31
Cyanocobalamin	0.33 mcg	33
*Indian Council of Medical Research Recommended Daily Allowances. **Not Established.		

Usage:

Erectly Dysfunction, Sports Nutrition, improve memory and sexual function anti-aging potential energy booster, gastrointestinal disorders.

Contraindications:

L-arginine is not recommended following acute myocardial infarction.

Side Effects:

Mild side effect Nausea, vomiting Headache reported in some individuals

Recommended Usage:

Two tablets per day along with food

Administration:

Taken by Mouth BID

Storage: Store in a cool, dry and dark place. Keep out of reach children

Packing: 30 Tablets

Pharmacological Action of each ingredients

Ashwagandha: offers Greater improvement in spermatogenic activity and increase in serum hormone levels. Withania somnifera is able to combat stress-induced male infertility and protects against swimming-induced endocrine dysfunctions of male reproduction. The aqueous extract of this herb has been shown to improve spermatogenesis, owing to elevated interstitial cell stimulating hormone and testosterone mimicking effects together with induction of nitric oxide synthase. Recent clinical Research studies showed that Ashwagandha extract administration resulted in a significantly greater improvement in spermatogenic activity and increase in serum hormone levels in the oligospermic patients as compared to the placebo.²²

L-Arginine: Recent Clinical Studies comparing arginine supplements with placebo or no treatment focusing only on patients with mild to moderate severity of ED and presenting outcomes such as improvement rate, International Index of Erectile Function (IIEF) score and adverse effects were included. Subgroup analysis for arginine alone and arginine in combination with other substances was further conducted to increase interpretability. Results of Study shows that Arginine supplements can be recommended to patients with mild to moderate ED.²³

Ginkgo biloba: is a dioecious tree with a history of use in traditional Chinese medicine. Although the seeds are most commonly employed in traditional Chinese medicine, in recent years standardized extracts of the leaves have been widely sold as a phytomedicine in Europe and as a dietary supplement in the United States. The primary active constituents of the leaves include flavonoid glycosides and unique diterpenes known as ginkgolides are potent inhibitors of platelet activating factor. Clinical studies have shown that ginkgo extracts exhibit therapeutic activity in a variety of disorders including Alzheimer's disease, failing memory, age-related dementias, poor cerebral and ocular blood flow, congestive symptoms of premenstrual syndrome and the prevention of altitude sickness. Due in part to its potent antioxidant properties and ability to enhance peripheral and cerebral circulation, ginkgo's primary application lies in the treatment of cerebrovascular dysfunctions and peripheral vascular disorders.²⁴

Cordyceps militaris extract is Beneficial to act as Prosexual: *C. militaris* is a potential harbour of

bio-metabolites for herbal drugs and evidences are available about its applications for revitalization of various systems of the body from ancient times. *C. militaris* is considered as the oldest source of some useful chemical constituents. Besides their popular applications for tonic medicine by the all stairs of the community, the constituents of *C. militaris* are now used extensively in modern systems of medicine. The current survey records the mysterious potentials of *C. militaris* are boosting up the present herbal treatments, as well as gearing up the green pharmacy revolution, in order to create a friendly environment with reasonable safety. Evidence showed that the active principles of *C. militaris* are beneficial to act as pro-sexual, anti-inflammatory, anti-oxidant/antiaging, anti-tumour/anti-cancer/anti-leukemic, antiproliferative, anti-metastatic, immunomodulatory, antimicrobial, anti-bacterial, anti-viral, anti-fungal, antiprotozoal, insecticidal, larvicidal, anti-fibrotic, steroidogenic, hypoglycaemic, hypolipidaemic, anti-angiogenetic, antidiabetic, anti-HIV, anti-malarial, anti-fatigue, neuroprotective.²⁵

Shilajit: Clinical study reports shown that Purified Shilajit, an Ayurvedic rasayana in healthy volunteers of age between 45 and 55 years for its effect on male androgenic hormone viz. testosterone in a randomised, double-blind, placebo-controlled clinical study at a dose of 250 mg twice a day. Treatment with Shilajit for consecutive 90 days revealed that it has significantly ($P < 0.05$) increased total testosterone, free testosterone and dehydroepiandrosterone (DHEAS) compared with placebo. Gonadotropic hormones (LH and FSH) levels were well maintained.²⁶

Shatavari (*Asparagus racemosus*) : Shatavari can serve as a powerful male tonic renders cooling and purifying effect to the liver and blood, and targets pitta at its main site in the small intestine. Its cooling properties balance the heating herb which are used to improve sperm count, such as, garlic, onion, ashwagandha, etc. Thus, Shatavari prevents depletion of sperm caused by burning via excess pitta.²⁷

Piperine: the major pungent principle of pepper is an alkaloid with a remarkably broad spectrum of therapeutic activities. It has also been shown to enhance the bioavailability. Piperine enhance the bioavailability of nutritional and botanical compounds²⁸

Mucunapuriens: improves male fertility. *M. pruriens* significantly improved T, LH,

dopamine,adrenaline, and noradrenaline levels in infertile men andreduced levels of FSH and PRL. Sperm count and motilitywere significantly recovered in infertile men after treatment.Treatment with M. pruriens regulates steroidogenesis and improves semen quality in infertile men.29

Zinc and Selenium in idiopathic Oligoasthenoteratozoospermia:It has been estimated that approximately 15% of reproductive-age couples suffer from infertility. Male factors contribute to almost half of infertility cases, and in many patients the underlying cause of oligoasthenoteratozoospermiais unknown. Accumulating evidence suggests that oxidative stress plays a role as a contributing factor to male infertility, and reactive oxygen species have been shown to impair sperm function and motility and to damage sperm membrane andDNA.30

Zinc: Zinc deficiency has been postulated as a putative contributing factor to male factor infertility. Zinc is the second most abundant trace element found in human tissue, following iron. Food sources of zinc include red and white meat, fish, and milk, and the World Health Organization estimated that about one-third of the global population is deficient in zinc. 30

Selenium:Selenium is an essential trace element that plays an important role in sperm formation and testosterone synthesis. At least 25 selenoproteins have been identified in humans and animals, and these selenoproteins help to maintain the structural integrity of sperm31

Panax ginseng: increases spermatozoa number/ml and progressive oscillating motility and plasma total and free testosterone. In a clinical study Sixty-six patients have been treated with PanaxGinseng C.A. Meyer extract, of whom 30 oligoastenospermicsine causa (group A), 16 oligoastenospermic with idiopathicvaricocele (group B). Twenty age-matched volunteers wereused as controls (group C). Use of Panax Ginseng extractshowed an increase in spermatozoa number/ml andprogressive oscillating motility, an increase in plasma total and free testosterone, DHT, FSH and LH levels, but a decrease in mean PRL. It is suggested that ginsenosides may have an effect at different levels of the hypothalamus-pituitary-testis axis.

Ginseng is often referred to as the King of all herbs, and is found to be a promising agent to improve general well being. Ginseng has also been reputed as an aphrodisiac, and is used to treat sexual dysfunction as well as to enhance sexual behavior. Data from Pre-Clinical studies have shown a positive correlation among ginseng, libido, and copulatory performances, and these effects have been confirmed in case-control studies in human. In addition, ginseng is found to improve the sperm quality and count of healthy individuals as well as patients with treatment related infertility. These actions are mostly attributed to ginsenosides, the major pharmacological active components of ginseng. 30-31

SUMMARY & CONCLUSION

Erectile dysfunction (ED), also known as impotence, is a type of sexual dysfunction characterized by the inability to develop or maintain an erection of the penis during sexual activity. ED can have psychological consequences as it can be tied to relationship difficulties and self-image. A physical cause can be identified in about 80% of cases. These include cardiovascular disease, diabetes mellitus, neurological problems such

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In MRUSH Capsules Modern phytochemicals have isolated from traditional herbs. These Phytochemicals focus their mechanism of healing action to the root cause, i.e. the inability to control the proper function of the whole body system. Phytochemicals in MRUSH Capsules extracted by using modern methods manage erectile dysfunction in the frame of sexual dysfunction as a whole entity.

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