

# Asian herbals and aphrodisiacs used for managing ED

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**Abstract:** In the East, many herbal tonics and preparations are used to assist the aging male improve his sexual drive or ability to perform penetrative sex by increasing sexual stimulation, erectile, ejaculatory, orgasmic and other responses for sexual function and satisfaction. The herbs and tonics act as or as “pick-me-ups” and energizing tonics which help the tired and fatigued male and those with sexual asthenia. The myths and realities concerning Tongkat Ali, sea horse, cobra meat and blood, animal penises and testicles amongst many other herbs and portions for oral intake or local application used by traditional “medical” practitioners and village doctors will be discussed.

**Keywords:** Asian; herbals; aphrodisiacs; myths & facts; erectile dysfunction (ED)

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## Introduction

For a male, sexual performance carries an identity and the sense of self-esteem in his society. Thus, Sexual performance in the male has an unprecedented importance depending on the erectile function of the male sex organ. In daily life, it is very easy for men to admit having a sore throat or hemorrhoids. However, admitting to having erectile dysfunction is contrary to the male ego and especially so if the dysfunction occurs when he is at mid-life and is getting older and there any suspicion of him entering the phase of male menopause.

## Definition and prevalence

Erectile dysfunction (ED) is defined as the “inability to reach and maintain erection during the intercourse” (1) leading to the victim’s experience of inadequate libido, inefficient orgasm and retarded or premature ejaculation. In Recent times, ED has been labeled as the most common sexual problem among pleasure-seeking males and a complaint of all men irrespective of their age, race and

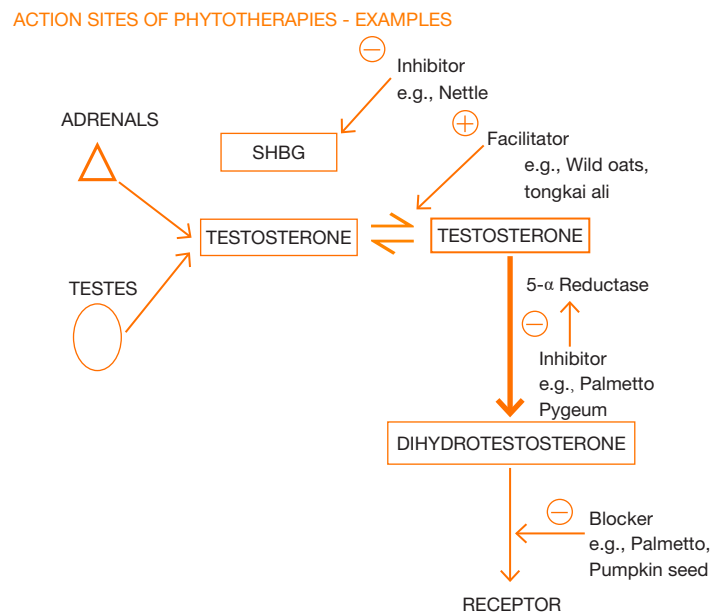
culture but age is the most important risk factor for ED (2). It is reported that nearly 100 million people around the world are living with erectile dysfunction. Yet, only 10% of these 100 million, i.e., 10 million are opting for treatment, despite enormous advancements and treatment facilities in all parts of the world (2). To cite a few countries, in China and Korea only 9% and 30% males voluntarily admit to having ED (2) and in most of the other countries in Asia, it is still considered very sensitive with considerable social stigma and secretly will resort to herbal remedies and tonics before seeking conventional medical help.

## Mechanism of action

Mode 1: circulatory stimulants (ginger, prickly ash bark, turmeric, motherwort), and adaptogens, which also can help support adrenal function (eleuthero, American ginseng, ashwagandha, schisandra);

Mode 2: testosterone enhancers (where testosterone is low e.g., wild oats);

Mode 3: adaptogens help support adrenal function e.g.,



**Figure 1** Action sites.

eleuthero, American ginseng, ashwagandha, schisandra, passion flower;

Mode 4: circulatory stimulants: when a person is often cold e.g., ginger, prickly ash bark, turmeric, motherwort;

Mode 5: tonics-blood, vital energy & vital essence: when a person is deficient or weak;

Mode 6: relaxing (muscle) herbs help where there is nervousness, tension or anxiety e.g., wild oats. Valerian used as a fresh plant liquid extract can work in this manner;

Mode 7: testosterone enhancers: animal studies show that ginseng extracts e.g., red panax ginseng do stimulant testosterone production. Others claim to increase testosterone levels by increasing its actual level or its free fraction or cause existing testosterone to be more effective by blocking its aromatization (Figure 1).

### Herbs and health tonics for erectile dysfunction

Do herbs work to rectify ED in the Aging Male? We will take some of these and discuss their properties. These herbals can be found throughout Asia and range from *Eurycoma longifolia* (Tongkat Ali), *Ginseng* and *Tribulus* etc. Those that act as Testosterone releasers have some value especially if the male has andropause and those containing some-pick-me-ups and energizers like Ginseng helps the tired and fatigued male and possibly those with asthenia. Deer horn contains growth factors and taking these do help

improve nocturnal erections in the male with somatopause. Popular in historic Singapore was Penis soup and Snake meat (Figure 2), whilst Surabaya was known for Cobra meat and Cobra blood (Figure 3) which had claims of improving erectogenic prowess—the myths and realities concerning these and other Village doctor remedies are what they are—myths!

*Chinese yam*, (*Dioscorea sp*): used often as a tonic to the reproductive system (3).

*Eucommia* (*Eucommia ulmoides*): potent herb to treat impotency and fatigue.

*Ginseng* (Figures 4,5): this is an adaptogenic herb touted to have boosted the potency of Ottoman sultans. It increases the body's ability to handle environmental stresses and combat biochemical imbalances. It energizes when one is fatigued and calms when overanxious. It also increases sex related hormones like testosterone and enhances sexual responses in men and women. It thus acts as a tonic, stimulant and aphrodisiac (4,5).

*Deer antlers* (*Cervi pantotrichum*): the most popular of sexual tonics. In the Chinese medical teaching, kidneys control sexual function; hence foods and herbs such as this can invigorate impotency and infertility increasing semen production as well (5). Best quality are from young bucks with new horn still in velvet with blood visible in the cartilage.

*Seahorse* (*Hippocampus kelloggii*) (Figure 6): promotes the



Figure 2 Penis soup.

**Deadly venom's saving grace**

**COBRA MEAT**

Surabaya in Indonesia is known for Cobra Meat & Cobra Blood which had claims of improving erectogenic prowess

Figure 3 Cobra meat.

kidney yang and normalizes sexual activity usually smashed or ground into powder.

*Ginkgo biloba*: this is an example of a tonic herb that equilibrates our body systems. When tired it energizes and when stressed it relaxes the individual. It increases blood circulation which better prepares the male for the heart-racing excitement of sex. Early reference to its medicinal

**Ginkgo biloba extract (GBE)** enhances blood circulation and increases the supply of oxygen to the heart, brain and all body parts.

**Ginkgo Biloba**  
An example of a tonic herb that equilibrates body systems eg. if you are tired it energizes you & if you are stressed it relaxes you. Its hallmark is it increases blood circulation which prepares the male for the heart-racing excitement of sex. Early reference to its medicinal use was in 2900 BC Chinese *Materia Medica* which believed it increased sexual energy. Contains circulation enhancer called terpene lactone-increases cerebral & genital blood flow

Figure 4 Ginkgo biloba.

**Ginseng**  
This is an adaptogenic herb touted to have boosted the potency of Ottoman sultans. Increases the body's ability to handle environmental stresses & combat biochemical imbalances. It energizes when you are fatigued & calms when you are overanxious. Also increases sex related hormones like testosterone & enhances sexual responses in men & women. Thus acts as a tonic, stimulant & aphrodisiac

Ingredients	Per Capsule (mg)
Panax Ginseng	40 mg
Coenzyme Q10	25 mg
Herbal Epimedium	60 mg
Western Ginseng	50 mg
Vitamin B1	1.4 mg
Vitamin B2	2.2 mg
Vitamin B6	3 mg
Neuroamine	10 mg
Zinc Sulfate	15 mg

**Panax Ginseng (Chinese or Korean)**  
Ginseng's anti-fatigue properties help to create more energy and can elevate mood. In both men and women, it universally combats weakness and gives us extra energy. It improves our endocrine gland function and has a positive effect on our sex glands.

Figure 5 Ginseng.

use was in 2900 BC Chinese *Materia medica* which believed it increased sexual energy. Ginkgo's circulation enhancer called terpene lactone increases cerebral as well as genital blood flow and its significantly increased production





Figure 6 Seahorse.



Figure 7 Tongkat ali.



Figure 8 Gambir Sarawak.

of dopamine, adrenaline and other neurotransmitters in the brain improves pleasure arousal and alertness (5).

*Tribulus terrestris* (6): this plant has long been used as a folk medicine in Eastern Europe and Bulgaria for sexual deficiency (5). The properties of this powerful ingredient have been associated with an increase in sperm production, sexual endurance, and testosterone levels. Also known as puncture vine, this herb has gained popularity over the past few years. Since testosterone plays a huge role for men, the addition of this herb can prove to be very beneficial. It is not a hormone as some believe. It is said that *Tribulus terrestris* can also help build muscle and strength, which enhances performance (5,7).

*Tongkat ali* (*Eurycoma longiflora*) (Figure 7): this native plant found through SE Asia is used as an Aphrodisiac since 1996 (5). It has to be used regularly and works by enhancing the testosterone and cGMP production. Benefits are felt gradually over a period of time, mainly because it enhances the natural biological synthesis of testosterone. When the level is increased, health and vitality are restored. In studies on Mice, Tongkat Ali increases the number of times and duration of sexual performance of the animals under study (8) with testosterone levels increasing up to 440% in some animals. In a recent study on humans, 62% of subjects showed an increase of the free testosterone index indicating its biostimulatory effect on steroidogenesis. It has also been shown to increase sperm concentration and motility and increases energy in the individual by enhancing ATP production by 60% thru oxidative phosphorylation.

*Gambir* (Figure 8): a powder made into paste which when applied onto the penis creates a prolonged erection and retards premature ejaculation (6). Applied around the corona glandularis and near the frenulum. Applied "cold" and works best after application by taking "warm" drink. Famous in Singapore and Malaysia.

*Muira puama* (*Ptychopetalum olacoides*): although used in Asia, this potency wood, is actually the best known Amazonian folk medicine which increases libido and penile hardness. It acts as a nerve stimulant to heighten receptiveness to sexual stimuli as well as physical sensation of sex (9). Rich in sterols e.g., sitosterol, campesterol and lupol it activates the body's receptors for hormones like testosterone to heighten libido and enhance performance (5). Also present are volatile oils like champor which helps restore sex drive and inner depth of libido and mental ability to be aroused.

*Yohimbe* (*Pausinystalia yohimbe*): again an Asian favorite



### EPIMEDIUM EXTRACT (HORNY GOAT WEED)

The Chinese refer to this herb as 'yin yang huo', which has been loosely translated as 'licentious goat plant'; hence, its common name is well known as 'horny goat weed' by many Western cultures. Scientifically, studies have shown that epimedium may restore low levels of both testosterone and thyroid hormone, bringing low levels back to their normal levels, which may account for some of its benefits in improving sexual libido. Other benefits to epimedium involve increased muscle mass.

**Figure 9** Horny goat weed.

which originates from an evergreen tree native to the West African Countries of Congo, Cameroon and Gabon, it is the only herb listed in the Physician's Index Reference as supporting sexual function. Its Latin name is *Pausinystalia yohimbe*. The USA FDA approved yohimbe as the first plant derived drug for treating impotency long ago and was dubbed the herbal viagra in the February 1999 edition of Environmental Nutrition. Alkaloid in yohimbe *i.e.*, Iso Yohimbine, allo-yohimbine, yohimbinine, yohimbane, yohimbenine and corynantheine blocks alpha-2 adrenergic activity allowing vasodilation. It also acts as a monoamine oxidase inhibitor increasing serotonin in the brain. Yohimbine has a dual aphrodisiac function: it improves sexual function (10) by displacing epinephrine from alpha-2 adrenergic receptors in the pelvic area and it increases proneness to arousal thru supplying the epinephrine from the alpha-2 receptors to the central nervous system (brain) where it is active as a neurotransmitter. Side effects include nervousness, anxiety, insomnia, and possibly mild hypertension (5).

*Wild oats*: a study in 1986 by the Institute for Advanced Study of Sexuality in San Francisco reported effects like heightened sexual awareness, increased sexual thoughts, more orgasms (36% in men and 29% in women) and some male subjects showed increased levels of testosterone attributed to unbinding of testosterone from TBG. Oats supply steroidal saponins which modulate hormonal balance (5).

*Epimedium extract (Horny Goat Weed) (11), (Figure 9)*: the Chinese refer to this herb as 'yin yang huo', which has been loosely translated as 'licentious goat plant'; hence, its common name is well known as 'horny goat weed'

by many Western cultures. Scientifically, studies have shown that *Epimedium* may restore low levels of both testosterone and thyroid hormone, bringing low levels back to their normal levels (5), which may account for some of its benefits in improving sexual libido. Other benefits to Epimedium involve increased muscle mass. Used for fatigue and aging, And vasodilatation effect; thus, most frequently used in treatment of sexual dysfunction in Traditional Chinese Medicine (12). The active substance from horny goat weed was reported by Xin Zhong Cheng at Beijing Medical University as Icarin—acts by increasing sexual activities and ICP levels in castrated rats after long term oral administration. It has no effects on serum testosterone level in castrated rats after long term oral administration. Instead Icarin increases nNOS and iNOS mRNA and protein expression in the corpus cavernosum after long term oral administration and hence may have long term efficacy on erectile dysfunction after oral administration.

*L-arginine*: L-arginine is an amino acid present in the proteins of all life forms. Also, referred to as arginine, this amino acid is required to carry out the synthesis of nitric oxide, which relaxes the blood vessels and allows more blood to flow through arteries (13). L-arginine has shown promise in the treatment and prevention of cardiovascular disease and in the treatment of male infertility (13). With its anti-oxidant properties, L-arginine can be an integral part of any sexual wellness supplement.

*Maca root (Lepidium meyenii W)*: this native Peruvian root has been cultivated for thousands of years. Considered an integral part of the diet, the Incans found maca root so potent (14), it was restricted to royal use only. Known for its energy enhancing abilities, maca root enjoys a special place amongst herbalists and health seekers. Like ginseng, this plant is employed to increase strength, libido and sexual function (14). Clinically its effects have been proved with experimental animals (5,15).

*Oatstraw*: the chemical and Nutrient content of oat straw contains many essential vitamins and properties, which can improve upon the body's physical and emotional condition (5). Used for many reasons, oat straw has shown it has anti-depressant properties and acts as a restorative for low energy levels, hence may help sexual asthenia.

*Catuaba (Erythroxylum catuaba)*: in Brazil, Catuaba Extract is considered to be a central nervous system stimulant (5), without the side effects of caffeine. This is used in some Asian remedies for sexual weakness and lowered libido. European herbalists have found that Catuaba may have aphrodisiac properties and can be used to combat sexual weakness.

*Oyster meat*: totally natural, oyster extract is excellent for men's reproductive health and endurance. It is a rich source for the amino acid taurine, which is used for cardiac health and nerve transmission. Historically known as an aphrodisiac, flavonoids in oyster meat have been shown to stimulate the reproductive system. However, still its potency is under question (5).

*Nettle leaf (Urtica dioica)*: amongst its many properties, nettle leaf has lately shown itself possibly effective for prostate health and prevention of prostate conditions, especially prostatitis, which is an inflammation of the prostate gland (16). There is speculation that nettle leaf may help with male pattern baldness. Prostate health is essential for men, no matter how young or old. Prevention starts when men are young, so as to avoid problems associated with aging. Prostate problems can interfere with a healthy sex life. Nettle is also considered to be an overall restorative for the body, as well as a natural diuretic and anti-inflammatory remedy (16). It is rich in iron, zinc, and chlorophyll.

*Animal testicles*: derived from bulls and wild boars, the orchic substance has been used as a way to possibly increase testosterone levels and sperm counts. In Singapore, testis soap was once very popular (Figure 2). It is still sold in parts of China and Japan. The dried Dog testis and penis (canis familiaris) is believed to tonify the kidneys and strengthen the yang. Kidney deficiency is believed to be the cause of impotency in Chinese literature.

*Dadder seed (Tusizi)*: there are 2 species i.e., (I) *Cuscuta chinensis* Lam and (II) *Cuscuta japonica*. The ripe seeds are collected in autumn, and then they are dried in the sun or boiled. Used to treat deficient kidneys manifesting as impotence, nocturnal emissions, premature ejaculation; Dadder seed (Tusizi) can be used with *Schisandra* fruit (Wuweizi), *Cnidium* fruit (Shechuangzi), Flattened milkvetch seed (Shayuanzi) and Grossy privet fruit (Nuzhenzi) for impotence.

*Gecko (Gejie)*: this toad-headed lizard (*Gekko gecko* L.) is caught in summer. The internal organs are removed, and the eyes are cut and drained. Pieces of bamboo are used to fix the body, and then the gecko is baked and put in a dry place. It is used to treat Impotence due to kidney efficiency. Gecko (Gejie) is used with Ginseng (Renshen), Pilose antler (Lurong) and Epimedium (Yinyanghuo). It can be used alone for this treatment.

*Cordyceps (Dongchongxiacao)*: this Chinese caterpillar fungus and the carcass of the larvae of various insects are collected in the period of the Summer Solstice (tenth solar term). They are cleaned and dried in the sun or baked and used

for treating deficient kidneys manifested as impotence, seminal emissions and soreness and pain in the lower back and knees (17). *Cordyceps* (Dongchongxiacao) is used with Dogwood fruit (Shanzhuyu), *Dioscorea* (Shanyao) and Dadder seed (Tusizi). The herb can also be used alone.

*Zinc*: zinc is an essential mineral, which is found in almost every cell of the human body. It is believed to have a wide range of functions (18), especially for men and sexuality. Men need more zinc than women, especially for sexual functionality and prostate health (19).

*Cayenne*: cayenne is also known as capsicum and plays a very large role in blood circulation. When cayenne is ingested, it acts to dilate blood vessels, allowing blood flow to increase to all areas of the body, especially major organs (5). The male penis benefits greatly from the ingestion of cayenne. It is a widely held belief that cayenne aids in longer lasting erections, with stronger ejaculations and more intense orgasms (5).

*Astragalus*: this unique herb works primarily on the nervous system and immune system, believed to aid in stimulation of energy levels, along with strengthening the body's immune system. It has also been given credit for increasing sperm count (20). Astragalus also targets the urinary tract and kidneys, to maintain a healthy state.

*Sarsaparilla (Smilax officinalis)*: the Chinese refer to this herb as khao yen' and believe strongly in its abilities to act as an aphrodisiac and a sexual stimulant (5). Sarsaparilla has been used world wide for its systemic benefits (21), especially sexually (5).

*Licorice root*: many cultures have used licorice root and value its properties. Because it contains magnesium, silicon, and thiamine, the body welcomes this herb for overall health on a cellular level (5). Its effect on hormonal levels has been applauded by many; and, as a tonic for the body's well-being, it is believed to have great benefits (5).

*Pumpkin seed*: besides having a pleasant flavor, pumpkin seeds are revered by the Chinese for its antidepressant properties (5). More importantly, pumpkin seed ingestion can impact prostate health, which is very important for male sexual health. It is commonly used to strengthen the prostate gland and promote healthy hormone function in men. Myosin, an amino acid found in pumpkin seeds, is known to be essential for muscular contractions.

*Boron citrate*: in its chelated form, boron offers many benefits to the human body. It improves calcium, phosphorous, and magnesium metabolism, to reduce the loss of these essential trace minerals through urine output. Boron also works to maintain the integrity of the



body's hormones, so they don't break down too rapidly.

### Ejaculatory problems affecting sexual dysfunction

Classically the neuro-physiology of ejaculation traces the 3 Phases in which ejaculation is a complex event involving the (I) the propulsion of sperm and seminal plasma into the prostatic urethra which is accompanied by (II) bladder neck closure and (III) coordinated contractions of the bulbocavernosus and ischiocavernosus muscles, striated muscles of the pelvic floor, lower limbs and trunk. In the Asian Society of the Aging Male Study [2004] 63% have reduced erection, 68% reduced or absent ejaculation and 19% pain or discomfort at ejaculation. Disorders of ejaculation can be due to: (I) disorders of production of sperm or seminal plasma/prostatic secretions (II) disorders of propulsion. In the case of anejaculation (absence of ejaculatory) which is the ultimate disorder of ejaculation, the causes can be best classified as (I) primary or secondary. After covering psychogenic causes of ejaculation failure, the organic causes due to non-dynamic and obstructive etiologies in the prepubertal and post pubertal male will be highlighted. More details will be given on retarded ejaculation, premature ejaculation, aspermia, painful and weak (poor propulsive force) ejaculation. The evaluation of the patient must include a detailed history taken from the patient and often his partner. Aside from haematologic tests, various forms of radiological and ultrasonic imaging, neurophysiologic studies may be required. For the general practitioner the commonest scenario will be in the ED Clinic with abundant men with performance anxiety presenting with premature ejaculation. In the male aging clinic lack of arousal is the commonest cause of retarded orgasm and ejaculation but this group is plagued by decreased touch sensitivity, the need for more direct stimulation, reduced drive to orgasm, a less intense orgasm, ejaculation being weaker and of reduced quantity and disturbing complaints of a longer recovery period and less number of attainable orgasms per day or week. Thus it is not mere rumor that "by the time a man reaches 55, the refractory period to 'do it again for a man' increases to 12 hours or even up to a week". In the STD clinic, painful or bloody ejaculation is frequently seen. The Condom may cause condom retarded orgasm/ejaculation.

In this day and age, there is a wide spectrum of innovative drug and other methods of treatment including psychosexual therapy and counseling, topical and systemic drug therapy, device-assisted therapy, electromagnetic stimulation to improve nerve and vascular function of the

pelvis and perineal muscles. Electro-ejaculation and the less often done surgical techniques are currently available. The simpler electrovibration can help create or maintain erection or stimulate ejaculation. Although we give so much emphasis on ejaculation, in the Chinese traditional medical teaching, there is reference to improving health by ejaculatory control and abstaining from ejaculating during sexual activity—hence the popular belief that EJACULATING TOO MUCH will lead to WEAKNESS and ILL HEALTH!

### Conclusions

In the East, many herbal tonics and preparations are used to assist the aging male improve his ability to have sexual drive or perform penetrative sex by increasing sexual stimulation, erectile, ejaculatory, orgasmic and other responses for sexual function and satisfaction. Currently available herbals, tonics and therapies range from Tongkat Ali, *Ginseng*, *Tribulus* etc. Those that act as testosterone releasers have some value especially if the male has andropause and those containing some pick-me-ups and energizers like ginseng help the tired and fatigued male and possibly those with asthenia. Deer horn contains growth factors and taking these may help improve nocturnal erections in the male with somatopause. Popular in historic Singapore were remedies such as "Penis Soup" (Figure 2) and Snake Meat, whilst Surabaya was known for Cobra meat (Figure 3) and Cobra Blood which had claims of improving erectogenic prowess—these myths including that of taking dog, cow, wild boar, bull and ostrich testicles (Figures 10,11) are mainly Village doctor remedies still being practiced widely in the developing regions of Asia. In China, the horny goat weed (Figure 9) is currently still popular and may have some scientific merit (11) for enhancing sexual drive.

### Further reading

- ❖ Better sex naturally by Chris D Meletis, Dean of Medical Affairs, Chief Medical Officer, National College of Naturopathic Medicine.
- ❖ Chinese Herbal Medicine by Wong Kang Ying and Martha Dahlen 1999 ISBN 962-7316-02-4; Publ Wokman Press, Hong Kong, 1994.
- ❖ Natural Medicines Comprehensive Database. Compiled by the Editors of Prescriber's Letter and Pharmacist's Letter.
- ❖ Ernst E. The Desktop Guide to Complementary and



Figure 10 Ostrich penis.



Figure 11 Cow penis powder.

Alternative Medicine—an evidence-based approach. Mosby, 2001.

- ❖ PDR Herbal and Nutritional Supplement editions. 2002, 2003.
- ❖ Natural Medicines Comprehensive Database Available online: <http://www.naturaldatabase.com/pda>
- ❖ Longwood Herbal Taskforce—herbal monographs.

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### Footnote

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### References

1. NIH Consensus Conference. Impotence. NIH Consensus Development Panel on Impotence. JAMA 1993;270:83-90.
2. Lim PH, Moorthy P, Tan RS. An overview of erectile dysfunction in aging me. In: Aging men's health-A case based approach. New York: Thieme; 2005:123-30.
3. Komesaroff PA, Black CV, Cable V, et al. Effects of wild yam extract on menopausal symptoms, lipids and sex hormones in healthy menopausal women. Climacteric 2001;4:144-50.
4. Murphy LL, Lee TJ. Ginseng, sex behavior, and nitric oxide. Ann N Y Acad Sci 2002;962:372-7.
5. Malo AF, Roldan ER, Garde J, et al. Antlers honestly advertise sperm production and quality. Proc Biol Sci 2005;272:149-57.
6. Lunenfeld B. Men's health and aging: The 5th world congress on the aging male. Taylor & Francis 2009:1-70.
7. CHEMEXCIL. Tribulus terrestris L. (N.O. Zygophyllaceae). Selected medicinal plants of India. A monograph of identity, safety and clinical usage. Tata Press 1992;323-6.
8. Ang HH, Cheang HS, Yusof AP. Effects of Eurycoma longifolia Jack (Tongkat Ali) on the initiation of sexual performance of inexperienced castrated male rats. Exp Anim 2000;49:35-8.
9. Wayneberg J. Yohimbine vs Muira puama in the treatment of erectile dysfunction. The American J of Natural Medicine 1994;1:8-9.
10. Carey MP, Johnson BT. Effectiveness of yohimbine in the treatment of erectile disorder: four meta-analytic integrations. Arch Sex Behav 1996;25:341-60.
11. ZC Xin. Effects of Icarin on erectile dysfunction. Personal Communication & Lecture at Institute of Urology, Peking University, Beijing, China. 2011.
12. Kuang AK, Chen JL, Chen MD. Effects of yang-restoring herb medicines on the levels of plasma corticosterone, testosterone and triiodothyronine. Zhong Xi Yi Jie He Za Zhi 1989;9:737-8,710.
13. Appleton J. Arginine: Clinical potential of a semi-essential amino acid. Altern Med Rev 2002;7:512-22.
14. KPS Khalsa. Maca: Secret of the Incas. Better Nutrition 1999;61:22.
15. Cicero AF, Bandieri E, Arletti R. Lepidium meyenii Walp. improves sexual behaviour in male rats independently from its action on spontaneous locomotor activity. J Ethnopharmacol 2001;75:225-9.
16. Hryb DJ, Khan MS, Romas NA, et al. The effect of



- extracts of the roots of the stinging nettle (*Urtica dioica*) on the interaction of SHBG with its receptor on human prostatic membranes. *Planta Med* 1995;61:31-2.
17. Zhu JS, Halpern GM, Jones K. The scientific rediscovery of a precious ancient Chinese herbal regimen: *Cordyceps sinensis*: part II. *J Altern Complement Med* 1998;4:429-57.
  18. Wahl R. Nutrition in the adolescent. *Pediatr Ann* 1999;28:107-11.
  19. Kinugasa E, Tayama H, Sato Y. Sexual dysfunction in the male patients on hemodialysis. *Nihon Rinsho* 1997;55:2996-3001.
  20. Liang P, Li H, Peng X, et al. Effects of astragalus membranaceus injection on sperm abnormality in Cd-induced rats. *Zhonghua Nan Ke Xue* 2004;10:42-5, 48.
  21. Bucci LR. Selected herbals and human exercise performance. *Am J Clin Nutr* 2000;72:624S-36S.

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