

3.2.2.4.7 Others

3.2.2.4.7.1 Alprostadil gel for erections

As far as engineering erections is concerned, alprostadil gel could become a competitor of sildenafil citrate.

Previous formulations of alprostadil were awkward to apply, as they were for injections or intraurethral pellets.

Most men do not want to inject medications into their penises, and definitely not on a day-to-day basis.

The alprostadil that now has become available through compounding pharmacies can be applied as an ointment to the male genitals. It will reliably cause an erection within minutes.

Sildenafil citrate usually needs 60 to 90 minutes to take effect (and on a full stomach, even longer). This means that with sildenafil citrate, it is difficult to bridge the waiting period with foreplay.

Of course, the opportunity for great sex often occurs rather spontaneously.

For men who need erectile support, the use of a phosphodiesterase inhibitor is sometimes difficult to plan.

“Oops, all of a sudden, she wants; but I’m not yet on Pfizer’s Blue!”

Alprostadil cream, which becomes effective within minutes, can offer the advantage that when the opportunity actually arises, one just needs a short trip to the toilet where the cream can be applied to the penis.

But mind you: good erections are not a guarantee for good sex, regardless of whether they are engineered via a phosphodiesterase inhibitor or alprostadil. For good sex instead of good erections, better try tongkat ali.

3.2.2.4.7.2 Erections with alprostadil and prostaglandin E1

Prostaglandins are a group of hormone-like substances; like hormones they play a role in a wide variety of physiological processes. Michael W. Davidson of the Florida State University: "Prostaglandins act in a manner similar to that of hormones, by stimulating target cells into action. However, they differ from hormones in that they act locally, near their site of synthesis, and they are metabolized very rapidly. Another unusual feature is that the same prostaglandins act differently in different tissues."

While the general public has a fairly good idea on hormones and their functions, this is clearly not the case with prostaglandins. Arthritis and rheumatism sufferers may know that prostaglandins have something to do with their particular condition, but as prostaglandins have a part in what makes people suffer from arthritis and rheumatism, as well as what alleviates their condition, there is considerable confusion.

The primary error is that people often just talk about prostaglandins in general. A patient may relate to a friend: "The doc told me that I have rheumatic pain because my body produces too much prostaglandin." And because of the name *prostaglandin* which clearly refers to the prostate gland, the patient, if male, may even think that something is wrong with the particular organ.

But what's wrong in this case is his understanding.

First of all, to talk about too much prostaglandin is rather foolish. This is the case because, like hormones, specific prostaglandins often have somehow contrary functions. There are prostaglandins that aggravate inflammatory conditions, and there are prostaglandins that alleviate them. Most prostaglandins have nothing to do with the prostate.

The group of physiologically active substances is named prostaglandins because the first prostaglandin was, incidentally, found in semen and thought to originate from the prostate gland.

There is one specific prostaglandin that indeed plays a role in the male sexual tract, prostaglandin E1. It is marketed under the name Caverject (alprostadil) as a treatment for erectile dysfunction.

In the words of medical researcher A. Lea: "Intracavernous alprostadil (synthetic prostaglandin E1) is a vasodilating agent which acts by relaxing the smooth muscles of the corpus cavernosum and by increasing the diameter of cavernous arteries; this leads to erection."

But as the synthetic prostaglandin E1 needs to be injected into the penis prior to intended sexual intercourse, it has never taken off in the same manner as Pfizer's Blue did. Prostaglandin E1 has other functions, not at all related to the facilitation of erections. It plays a role in protecting the gastrointestinal tract, and a synthetic prostaglandin E1 is marketed worldwide to protect from gastrointestinal bleeding that may be caused by the consumption of large amounts of painkillers (by rheumatism and arthritis sufferers). The synthetic prostaglandin E1 is usually sold under the brand name Cytotec. The drdoc on-line website describes it as follows:

"Cytotec (Misoprostol) is a synthetic analogue of Prostaglandin E1 (PGE1). Like endogenous PGE1, Cytotec® exerts a protective effect on the gastrointestinal mucosa by increasing mucus and bicarbonate ion secretion and by increasing mucosal blood flow. In addition, Cytotec® inhibits acid secretion. Naturally occurring PGE1 is ineffective after oral administration because it is unstable in an acid environment; it is also quickly degraded when administered parenterally, giving it no practical clinical utility. However, the structural modifications to naturally occurring PGE1 that led to the development of Cytotec® resulted in an orally active drug with a duration of action that makes it clinically useful."

Misoprostol, as synthetic analogue of Prostaglandin E1, in sufficiently high dosages, also causes uterine contractions. In a number of mainly South American countries, women use high dosages of Cytotec to induce illegal abortions or abortions outside of the supervision of physicians.

Prostaglandins are usually named by letters and numbers: A1, A2... E1, E2... They are named by chemical similarity, not by the similarity of physiological effect. Prostaglandin E2, for example, has nothing to do with erections of the male sexual organ. Its function is in causing labor pains by inducing contractions, and it's an important pharmaceutical agent in the OB.

For some prostaglandins, it makes quite a difference what we eat, or rather, what fats we eat. By and large, omega-6 fatty acids as they are found in meats and most vegetable oils stimulate the production of inflammatory prostaglandins, while the consumption of omega-3 fatty acids stimulates the production of anti-inflammatory prostaglandins. For this reason, marine fatty acids such as cod liver oil have long been known to ameliorate arthritic and rheumatic conditions. Flax seed, evening primrose oil, borage oil and canola oil are plant products stimulating the production of anti-inflammatory prostaglandins. Evening primrose oil is therefore used by women to manage menstrual pains that are caused by contraction-facilitating prostaglandins.

3.2.2.4.7.3 Nitroglycerin and erections

Some time ago, I saw a press release, dated March 9, 1998, that a company named Direct Response Marketing “has launched Restore, the first ever fully tested, effective topical cream for the safe treatment of male erectile dysfunction (impotence).” Restore was described as “an aqueous-based cream developed from an existing and well tried treatment for angina which acts as an effective vasodilator. The formulation is 1% nitroglycerine combined with emulsifiers, stabilizers and preservatives and is effective within minutes of application of achieving an erection of up to 45 minutes duration.”

I talked to a pharmacist and then bought some Angised tablets (Glaxo Wellcome). These are glyceryl trinitrate (which is but another name for nitroglycerin) tablets for sublingual administration in the treatment of acute attacks of angina pectoris.

Mind you, so-called poppers (amyl nitrate, butyl nitrite, isobutyl nitrite) started out as medication for attacks of angina pectoris. And sildenafil citrate was tested as a heart drug before it was discovered that it had such a pronounced effect on the plumbing of the male sexual organ. Another medication that is available for heart problems, mostly of neonates, prostaglandin E1, is also used as a drug for men suffering from erectile dysfunction.

That heart medications potentially are effective treatments for erectile dysfunction is no coincidence. Many heart problems have to do with too little oxygen getting there. Heart emergency medications therefore primarily strive to dilate blood vessels supplying the heart. And for erections to occur, a dilation of blood vessels supplying the sex organ is precisely what is needed.

I first pulverized two .5 mg tablets of Angised and mixed the powder well with an ointment base (actually just Nivea cream).

Obviously, I first wanted to test my tolerance, so I really used just a little, applied to the most precious part of my body. As I had no negative reaction, I used the whole 1-milligram dissolved in the Nivea cream.

I seemed to have a good tolerance for the nitroglycerin ointment. Even when I applied the whole 1-milligram ointment, there was no negative reaction. Unfortunately, there was also no positive reaction. And no erection.

The next day I decided to go all out testing nitroglycerin as an erection medication. I mixed four pulverized Angised tablets (2 milligram) into my Nivea ointment base, and applied it all at once. Now, that did have an effect. Just not the desired one. But I can clearly state that transdermal nitroglycerin does work. It also works rather fast. But applying it to the genitals doesn't mean that it works on the genitals. Regardless of whether used as sublingual medication or as ointment applied to the genitals, the effect is on the whole body.

Nitroglycerin ointment definitely widens blood vessels. I could tell when I looked into the mirror. The blood vessels on my forehead became rather swollen. This even got me worried. And it caused me a headache.

Certainly, the whole course of events did nothing to bring me into the mood, or into the condition, for sexual intercourse. I don't intend to experiment with nitroglycerin again, and I see no reason why anybody else should.

By no means should nitroglycerin medications be combined with sildenafil citrate.

3.2.2.4.7.4 Phenylalanine and sexual enhancement

The positive effects of phenylalanine supplementation in the human diet have been studied less extensively than the positive effects, for example, of lysine supplementation or arginine supplementation. However, unlike for many other amino acids, there have been extensive studies on possible negative effects of phenylalanine, though they occur in less than 1 in 15,000 persons.

Negatively affected by all phenylalanine intake are phenylketonurics. These are people who lack an enzyme needed to digest phenylalanine. Intake of phenylalanine by people with phenylketonuria (PKU) will cause mental retardation, especially in children. But even adults with PKU will experience mental and intellectual disturbances after an intake of phenylalanine. As the amino acid phenylalanine is part of almost all proteins, especially those of animal origin, phenylketonurics have to restrict themselves to a lifelong vegetarian diet.

To people who are not phenylketonurics, there is by and large little danger from phenylalanine, especially if it's part of a normal diet. The exception are people on monoamine oxidase inhibiting drugs (MAO inhibitors), as phenylalanine is converted into the amino acid tyrosine. If the enzyme which breaks down monoamines such as tyrosine is inhibited, the body is flooded with substances that can cause extreme hypertension.

One man's side effect is another man's cure.

That phenylalanine is converted into tyrosine which is a precursor to dopamine and other neurotransmitters is exactly the reason why some people use phenylalanine as dietary supplement.

A lack of the neurotransmitter dopamine is not only the reason for the development of Parkinson's disease but also responsible for the loss of sex drive as people get older. The link between dopamine and sex drive is well proven. It is also known that practically all Parkinson's medications have as side effect an increased susceptibility to sexual stimulation.

Some Parkinson's medications such as deprenyl and bromocriptine are used for sexual enhancement. Tyrosine is an amino acid which, as dietary supplement, does seem to increase dopamine levels but it's not as strong as deprenyl or bromocriptine and not the medication of first choice in usual Parkinson's cases.

While the prosexual effects of phenylalanine are a consequence of the conversion of phenylalanine into tyrosine, it is assumed that phenylalanine has other health benefits. We have pointed out above that phenylalanine is not as well researched as are, for example, the amino acids lysine and arginine. This means that some of the alleged health benefits haven't been proven conclusively in scientific tests.

For conclusive results, it is not sufficient that just a few studies are conducted. In order to judge what amount of scientific studies will be needed for definite knowledge, we may take a look at cholesterol research. Cholesterol has been researched hundreds of times more extensively than phenylalanine. Nevertheless, we have been told over the years to avoid foods high in dietary cholesterol, such as eggs, in order to safeguard against cardiovascular disease. And only after hundreds of studies, it appeared that saturated fat intake is the prime culprit, rather than dietary cholesterol.

If one reads that the prosexual effect of phenylalanine (via the tyrosine route) hasn't been proven, it means just this: it hasn't been proven. It hasn't been proven either that a diet high in cucumber helps to avoid baldness. It hasn't been proven because it hasn't been studied. Strictly speaking, it has also not been proven that a diet high in cucumber does not help to avoid baldness.

If something hasn't been proven, it means just that: it hasn't been proven.

That something hasn't been proven doesn't automatically mean the opposite would have be the case. It HAS been proven that phenylalanine converts into tyrosine, and that tyrosine is a precursor to dopamine, and that dopamine levels have a definite function in sexual desire.

It may not have been proven, however, that taking phenylalanine supplements of, let's say, 500 mg a day will straighten out the absence of sexual desire. The dosage may be insignificant, or there may be limitations to absorbency, and so on. Conventional wisdom is that taking phenylalanine supplements will not hurt one's sex and general life (unless one is a phenylketonuric), while it may or may not mean an improvement.

3.2.2.4.7.5 Sirih leaves to restore virginity, not just the hymen

Usually, when we talk about supplements, we think of something we apply by mouth... a herb such as tongkat ali, or some (albeit useless) multivitamins.

However, I want to bring the attention of the reader to a sexual supplement which is not consumed orally: Indonesian sirih leaves.

Sirih leaves are boiled and then used as a genital wash, not by men, but by women. Indonesian women use it widely after giving birth, and they do so explicitly to make their husbands happier.

Sirih leaves cause genital shrinkage in women, as well as genital dryness. Western medicine of course deals with vaginal dryness ... as a problem of post-menopausal women.

However, for women in their late twenties and thirties, the problem is not so much vaginal dryness but vaginal wetness ... not for their own pleasure but for the pleasure of their partners. Many women in their twenties and thirties, when they are properly aroused, get rather flooded.

Now, this may be OK for their own pleasure. But a lack of friction reduces both the physical pleasure of the male partner, and, even more so, impacts negatively on his psychological excitement.

I think that Asians, by and large, have a more mature approach to sexual pleasure. Asian men greatly value sexual conduct with women who have no or little sexual experience. Western men are largely ignorant about the pleasure one can have with a woman who had no or little sexual experience, because Western culture dictates that the male and the female partner be of approximately the same age.

However, boys in their late teens cannot value a female sexual partner who has had no or little sexual experience. Boys in their late teens typically ejaculate too fast. They are also too nervous, or too excited, to enjoy the finer points of a sexual encounter. It has long been my opinion that the best partners for boys in their late teens are women around 30 who take the initiative.

The sex which mature men can have with virgins or women with very little sexual experience is different. It is slow-paced. There is no need to hurry. Such sex is very gentle, even careful, so that the girl is not hurt.

However, such sex is only possible if there is proper vaginal tightness, and even a certain degree of vaginal dryness. That mature men so easily fall deeply in love with virgins or women who had very little sexual experience has a lot to do with the physical constellation of the vagina of such sexual partners.

No mature woman, with a long history of sexual conduct, can give a man this explicit pleasure of reaching orgasm with almost no movement, caused by a female partner's vaginal tightness and dryness.

Unless she uses sirih leaves.

What sirih leaves can achieve is simply magnificent. In women who respond well, it practically reinstates virginity... not through the presence of a hymen, but because the vaginal canal just feels and reacts as if the woman were a virgin (inclusive the pain).

How are sirih leaves used? Some 10 to 20 leaves are brought to a short boil. The water is then left to cool down. This water can then be used to simply wash the female genitals. However, more effective is to have the water in a small basin, and then to sit inside for 15 to 30 minutes.

3.2.2.4.7.6 Pygeum for a lean prostate

While saw palmetto extract is the far better known herbal medication to reduce the size of an enlarged prostate, pygeum may in many cases be superior for the treatment of the condition. Benign prostatic hyperplasia or benign prostatic hypertrophy is a non-cancerous tissue growth of the prostate. Among the early symptoms of the condition are prolonged dribbling after urination, as well as a decrease in the strength of the urinary stream. The enlarged prostate will also interfere with ejaculatory power.

Practically all men experience an enlargement of the prostate as they age. Early symptoms usually set in after the age of 40. As the enlargement of the prostate gets worse, the most disturbing symptom is a persistent difficulty to pass water. This can become very uncomfortable and painful.

A standard treatment for an enlarged prostate over the past decades has been to remove surgically a substantial part of the prostate. That gets rid of the urination problem but unfortunately, nerves passing along the prostate often get cut as well. This will almost certainly mean a rather abrupt end to a man's sex life. That vital organ's function will, after the operation, primarily be that of a channel through which urine flows with little obstruction.

Not an appealing perspective for a large number of men.

Next on the scene arrived Proscar, an oral medication with the generic name finasteride. Proscar has been proven to often shrink an enlarged prostate. It does so by interrupting some hormonal processes that are at the root of benign prostate hyperplasia, the conversion of testosterone into dihydrotestosterone.

The conversion of testosterone into dihydrotestosterone is effected by the enzyme 5-alpha reductase.

Proscar inhibits 5-alpha reductase and thereby the conversion of testosterone into dihydrotestosterone, thus interrupting the chain that leads to cell growth in the prostate. But even though nerves are not cut as they often are in the case of surgery, all is not well at the sex front for those on Proscar. Studies have proven what many men experienced when on Proscar: erections are hard to achieve and maintain.

The best studied among the three herbals is saw palmetto. There is no doubt that saw palmetto works. It does so in pretty much the same manner as Proscar: by inhibiting the enzyme 5-alpha reductase. Unfortunately, saw palmetto is comparable to Proscar in another aspect. Personal experience suggests that saw palmetto also interferes with the erectile function. There will just be less sensation in the male organ, comparable to what happens to the sensation of one's legs if one sits for a long time.

Pygeum africanum and nettle root are less studied. While both will also result in making passing urine easier for men with enlarged prostates, most probably by effecting a reduction of the size of the gland, the mechanism by which this happens is not precisely known.

The endocrine system works via receptor sites. In principle, one can interfere with hormonal processes in two manners: either by interfering with the hormones themselves, or by interfering with receptor sites. Phytoestrogens, for example, often have effects on women, which usually would be attributed to testosterone, the quintessential anti-estrogen. This is thought to happen because phytoestrogens are weaker than a woman's body's own estrogens. When phytoestrogens bind to estrogen receptor sites, they inhibit a woman's body's own stronger estrogens from binding to these sites, thus tilting the estrogen testosterone balance in favor of testosterone. In women, even a slight tilt towards testosterone will usually result in an increased sexual appetite.

It has been speculated that pygeum africanum and other herbals used in the treatment of an enlarged prostate work by interfering with the binding sites for dihydrotestosterone.

We are not aware of scientific studies that would have dealt with the effect of *pygeum africanum* on erectile functions.

Alternative option: tongkat ali

Additional work has been done mostly by Malaysian scientists. This work has been summarized by Associate Professor Dr. Johari Md. Saad, Ph.D., University of Malaya, Malaysia.

For decades, the indigenous populations of South East Asia have been using *Eurycoma longifolia* for its high medicinal value. How the concoction worked for them is difficult to explain, but many swear by its close to supernatural benefits.

In Malaysia, the plant is better known as "Tongkat Ali" which literally means "Ali's walking stick".

Traditionally, it is valued for its aphrodisiac properties and treatment of diverse ailments ranging from cuts and wounds, skin infection, fever, malaria, high-blood pressure, diabetes, and to increase energy and stamina.

Scientific Research

As early as 1968, scientific research was conducted on *Eurycoma longifolia* (Tongkat Ali). At that time, the scientists were looking for natural chemical and have identified the following phytochemical components extractable into the organic solvent, such as methanol, dichloromethane or chloroform:

Terpenoids, stigmasterol, sitosterol, sterol, saponins, quassinoid, campesterol, benzoquinones, alkaloid, scopoletin, piscidinol, nilocitin, methoxycantin-one-oxid, methoxycantine-one, meliane, longilene, longilactone A and B, hydroxyeurycomalactone, hydroxycantin-one-oxid, hydroxycantine-one, hydroxydehydroeurycomalactone, hispidone, eurylene, durylactone, eurycomanone, eurycomanol-oD-glycopyranoside, eurycomanol, eurycomalactone, episelin, dihydroxyklaineanone, dihydroxyeurycomanone, dihydroeurycomalactone etc.

The water-soluble extract contains mainly phenolic components, tannins, high molecular weight polysaccharide, glycoprotein and mucopolysaccharides. It is believed that these water-soluble components are biologically active in rendering some of the observed properties. Pure water-based tongkat ali extract can be obtained from the Medan, Indonesia-based company Sumatra Pasak Bumi with the web site address www.tongkatali.org. Sumatra Pasak Bumi is a major tongkat ali wholesale company and supports scientific research by providing free tongkat ali extract.

Currently, the above-listed components of tongkat ali are characterized and intensive studies on the properties of these components are being vigorously examined by Malaysian, Japanese and American scientists.

Aphrodisiac Value

More than just an aphrodisiac!

Since 1994, different authorities have carried out various scientific experiments on the aphrodisiac properties of Tongkat Ali. The school of pharmaceutical science, university science Malaysia [Ref. Biological & pharmaceutical Bulletin 21(2) 1998 153-155; Archives of pharmacal research (Seoul), 20(6). 1997 .656-658;international journal of pharmacognosy, 35(2) .1997.144-46; experimental animals (Tokyo), 46(4).1997.287-90]; reported that, in the tests carried out in the laboratory, the extract of Tongkat Ali has an aphrodisiac effect in the experiment on animals. It increased the number of times and length of the sexual performance of the animal under study.

More reports about the biological properties of the water-soluble extract were reported in: prosiding seminar sebatian kimia semulajadi ke 13 FRIM 1997; 22nd Malaysian Biochemistry and Molecular Biology Society Conference 1997; prosiding Konvensyen Kebangsaan Tumbuhan Ubatan FRIM 1995; proceeding 19th Malaysian Biochemistry and Molecular Biologi Society Conference 1994 and some other publications.

Experiments carried out by a team of scientists in the University of Malaya showed the water-soluble extracts from Tongkat Ali have the following effects:

Tongkat Ali / Eurycoma Longifolia Jack references

In vitro tests on human testicular tissue homogenates showed Tongkat Ali water-soluble extract increased the formation of testosterone (male sex hormones) by 4.4 fold.

Studies conducted on animals showed significant changes in the male:female ratio of the offspring, i.e.3:1 ratio in the treated group compared to 1:1 ratio in the untreated group.

Experiments conducted also showed that the water-soluble extract has the ability to increase the sperm concentration, percentage of progressive sperm and the mobility rate. The results obtained suggest that Tongkat Ali water-soluble extract could increase the quality and quantity of the sperm, and therefore, increase the fertility rate.

Tongkat Ali water-soluble extract has the potential of increasing fertility and also helps increase the litter size.

Facts Men Need To Know About Their Male

Hormone: Testosterone

Function

Testosterone is the most important representative of the male sex hormones collectively known as androgens produced by the gonads. Its secretion stimulates the differentiation of the male reproductive tract in the embryo, the descent of the testes into the scrotum, the further development of the reproductive tract and penis during puberty and maturation of the sperm.

It is also responsible for the development of male secondary sex characteristics such as moustache, beard enlargement of the larynx (deep voice) and increase production of the sebaceous glands, all of which are associated with masculine features. Testosterone also plays a role in the development and maintenance of male libido (sexual desire) and sexual behavior.

Testosterone have other "non-sexual" roles: it serves the important function for protein biosynthesis in accelerating muscle build-up, increases the formation of red blood cells, speeds up regeneration and recovery time after illness or injury. It stimulates the entire metabolic activity especially in the energy metabolic pathways and burning of body fat.

Testosterone Levels Decline with age.

If you ask any elderly men about their endurance and sexual desire- the answer would be non-affirmative. What is the cause? Aging? The answer is a definite "Yes"! But how is aging responsible for this syndrome? The answer lies in the testosterone level, which declines with age. Research shows that during puberty, its level is peaking. Its level is at their lifetime peak at the age of 25, and steadily decrease with age. Some clinical studies indicate that generally on average, testosterone levels drop as much as 2% on yearly basis after the age of thirty. The rate of decline is very much a factor of lifestyle. Individuals who exercise regularly have a much slower rate of decline. This is due to exercise to a certain extend stimulates the hormone secretion. A more prominent decline was observed in individuals who are heavy smokers and alcoholic.

Testosterone, free testosterone, steroid and tongkat ali resources

Tongkat Ali does not work the same way as other aphrodisiacs

Tongkat Ali does not act in the same way as other claimed aphrodisiacs, which take effects immediately.

Tongkat Ali has to be consumed regularly over time. The mode and mechanism of actions are different.

Tongkat Ali acts through the enhancement of testosterone and also c-GMP productions. As it enhances the synthesis of the hormone it takes a longer time period to exert its effects. The benefits are felt gradually after a period of time. Optimal effectiveness should be felt within a week of continuous uninterrupted use. When the testosterone level increases, the health and vitality are restored.

Tongkat Ali water-soluble extract is not a stimulant. Aphrodisiac effects of Tongkat Ali varied depending on the lifestyle and also the physical and physiological state of the individuals.

Cancer Cells Inhibitor

Researchers in America and Japan reported that some plant chemicals in the group of quassinoid and alkaloids found in Tongkat Ali have the effect of inhibiting the growth of cancer cells in animals in laboratory experiments. Examples of the chemical cells are breast cancer cells, colon cancer cells and leukemia.

Anti-Fever Effects

In 1995, it was reported that the quassinoid extracted from Tongkat Ali has an anti-fever effect. From this experiment, the quassinoid was 2 times more effective than aspirin.

Anti-Malarial Effect

Studies on the biological effects of Tongkat Ali began in the 1980s. Studies showed that the roots of Tongkat Ali have a group of plant chemicals called quassinoid alkaloid and peptide that has the property to kill malaria parasites.

Anti-oxidant Properties

Studies conducted by the Forest Research Institute Malaysia (FRIM) as well as the department of Bio-medical Science, Universiti Kebangsaan Malaysia (UKM) discovered that Tongkat Ali contains SOD (Superoxide dismutase), a kind of anti-oxidant enzyme.

The studies showed that Tongkat Ali inhibited the chain reaction of radicals that can be harmful to the body system.

Quality of Tongkat Ali Extract

Most, if not all, Tongkat Ali products available in the market today are pulverized (sawdust) root. Until they are scientifically analyzed in the laboratory, there is no way to verify which plant roots or plant parts are being used. Beside that, the raw roots are fungus-prone. Unless stringently quality controlled, even grounded root powder in capsules can deteriorate over time and are subject to attack from fungi and microorganisms, which could cause toxic and side effects over long-term usage.

Tongkat Ali is now made available using the latest scientific techniques and the highest quality-controlled methods of extraction. The best quality is from a product with 100% pure Tongkat Ali water-soluble extract, scientifically processed and encapsulated.

Such an extract is currently available through a company in Medan, Indonesia (as Tongkat Ali is now a protected plant). The company is Sumatra Pasak Bumi, with website www.tongkatali.org.

Tongkat Ali water-soluble extract is superior in efficacy and quality. The dosage is standardized and the formulation is based on pharmacokinetic studies and observations, to ensure its effectiveness, safety and efficacy.

Scientists and researchers have shown that the water-soluble extract is very safe and non-toxic, even at relatively high dosage.

3.2.2.4.7.7 Wonderful phyllanthus - the world's most valuable herb

Nothing has changed in 500 years. Like in the 15th century when the Dutch discovered that these Eastern islands were a treasure trove of useful aromatic plant species, Indonesia still today is an incredibly rich source for herbs of therapeutic value.

Take for example phyllanthus urinaria (called rumput menir or meniran in Indonesian). This amazing herb has been known for hundreds of years to cure kidney and gallbladder stones, and at the same time help those with liver disease.

And the efficacy of both applications have been proven in numerous scientific studies. But this is not all. The benefit phyllanthus urinaria provides in cases of liver damage is mostly due to the plants anti-viral activity.

Now, there are not many strongly anti-viral compounds at the hand of mankind. We have managed to discover and manufacture antibiotics to fight bacteria, but against viral diseases, we are almost weaponless.

Take HIV or the various hepatitis viruses. Or take the simple flue, or the bird flue. Or herpes. There are some pharmaceutical products that are prescribed by physicians but typically, while they can provide some relief, their curing effect is by far not as dramatic as that of antibacterial or antifungal medications.

And many antiviral products of the Western pharmaceutical industry have disturbing, or worse, side effects. Unlike artificial pharmaceutical products, phyllanthus urinaria is practically free of side effects.

So, why is phyllanthus urinaria, or meniran, not a standard treatment for HIV-AIDS or hepatitis?

Well, there is one substantial disadvantage of phyllanthus urinaria. The US-based and multinational pharmaceutical corporations haven't found a way to make money out of phyllanthus urinaria.

The herb grows in remote Asian tropical regions, mostly in the sea breeze climate of the Indonesian islands. The herb is also found in Southern India (which, by the way, shares a common oceanic border with Western Indonesia).

So far, there are no plantations for phyllanthus urinaria. Nowhere in the world. And the herb would not survive the seasonal weather of the US farm belt. Until now, phyllanthus urinaria, or meniran, is collected primarily by Indonesian practitioners of traditional medicine, so-called dukun, and by young people in remote tribal areas who help them. Even though Western scientists have proven in peer-reviewed studies (published in the most renown scientific journals) that phyllanthus urinaria could provide definite relief and even a cure in viral disease, this magnificent herb has never really been available to patients in the West.

3.2.2.4.7.8 Multivitamins - save your money for better purchases

As scientific research into nutrition progresses, micronutrients such as vitamins and minerals are receiving more and more attention. They do so not only among scientific researchers but also from health-conscious consumers.

Furthermore, awareness is pushed for the purpose of marketing. The sale of nutrients in the form of pills is big business. On the Internet, lots of advertorial pseudo-information is disseminated. Fact is, for the vast majority of micronutrients, healthy food is by far the best source.

Supplements, by and large, are justified for specific, therapeutically active phytochemicals not found in standard food items. Tongkat ali (*Eurycoma longifolia*) has contains phytochemicals that have been proven scientifically to raise testosterone levels and be useful as malaria prophylaxis, and sirih leaves contains phytochemicals that cause a shrinkage of the vaginal lining.

Alas, sirih leaves make a poor salad, and tongkat ali root is so bitter, it is consumed by millions of men (and an increasing number of women) in Southeast Asia and China not for its Lucullan potential but for the additional sexual potency it provides.

For sirih leaves and tongkat ali, extracts in capsule form make sense. I can even understand people taking vitamin E or vitamin C in the form of tablets. But what is commonly sold as multivitamins and minerals is making a fool of the buyer. This is the case because multivitamins typically combine a very wide range of ingredients, most of which are not needed as supplements. Of those that do make sense as supplements, the amounts found in multivitamin capsules are mostly irrelevant.

Here a rundown of typical ingredients and our comments on them. We start with those ingredients that make some sense... though one better chooses these ingredients as separate products, and if possible, gets them from food sources:

The sensible

Selenium - this is often the most useful ingredient in multivitamins. 200 mcg per day is what we should consume as dietary intake. Selenium protects against some cancers. If you prefer natural sources, two or three brazil nuts a day will get you enough selenium, and you don't have to worry about harmful chemistry in pills.

Beta-carotene - health guru Dr. Weil recommends 25,000 IU a day; multivitamins typically provide about 5,000 to 10,000 IU. If you eat some tomatoes and carrots, you get a fair share of beta-carotene.

Some B-vitamins as supplements make sense. You can't do much wrong by taking them.

Vitamin B-6 (Pyridoxine) - multivitamins typically provide 10 to 25 mg; much higher doses (several hundred milligrams a day) have been tried as remedy for arthritis, premenstrual pain, depression and a few other conditions. According to Dr. Weil, high doses will increase the instance of remembered dreams.

Niacinamide, a form of Niacin (vitamin B-3) - multivitamins provide something in the range of 50 to 100 mg per pill; higher doses are used to lower cholesterol but there is some risk of an adverse liver reaction.

Zinc - this mineral is important for prostate health, and many men are alleged not to get enough of it. The best food sources for zinc are oysters (one may want to avoid them because of likely contamination through poisoned ocean waters) and meat. Vegetarians, unless they eat nuts regularly, are much more likely than meat consumers to suffer from zinc deficiency. Multivitamins often provide 15 mg, which is the Recommended Dietary Allowance per day. For a stressed prostate, about 30 mg a day are taken as support.

Copper - this is a mineral that should somehow be in proportion with zinc, in an amount that equals about 10 percent of the zinc taken. Multivitamins often provide about 2 mg; there is nothing wrong with this. If you get your zinc from mixed nuts, you will also have taken care of your copper needs.

The unnecessary

Vitamin B-1 (thiamine) - multivitamin products often contain around 25 mg, which is generous. Some people, especially those abusing alcohol, may feel a bit more energetic when taking vitamin B-1 in doses of more than 100 or 200 mg but specific effects are so diffuse that a necessity for supplementation does not exist in most individuals.

Vitamin B-2 (riboflavin) - look at the label of your multivitamins bottle, and you may learn that each pill gives you 25 mg riboflavin. Health guru Dr. Weil: "Riboflavin (vitamin B-2) is a yellow pigment, which is what turns the urine bright yellow when you take a B-complex supplement. This is harmless, but can be upsetting if you don't know the cause. I do not know any reason to take this vitamin separately."

Vitamin B-12 (cobalamin), Vitamin B-5 (Pantothenic Acid), Folic Acid - Many multivitamin products provide amounts that make a fair share of what is considered a sensible amount of these vitamins consumed per day, but the benefits of taking these vitamins as supplements is not clear for healthy individuals. For those recovering from illnesses, physicians often prescribe B-vitamins; at least, they do no harm, unlike many pharmaceuticals, which may also not really be needed but are prescribed by many doctors, because they feel that patients aren't happy if they are not ordered to take a variety of pills.

Biotin - multivitamins are likely to contain about 300 mcg per capsule. While we may not get enough biotin from the foods we eat, biotin in sufficient amount is produced by intestinal bacteria, which are part of the flora of healthy people. Only when a lot of antibiotics have been taken, and the normal intestinal flora has been killed, is there a need to take supplemental biotin.

Because of specific enzymatic processes, there may exist a biotin deficiency in individuals who eat a lot of raw eggs. For others, biotin supplementation is truly unnecessary.

Manganese - you may find that you get about 5 mg of manganese from your multivitamins, specified as manganese gluconate. Ask your health food sales clerk or even your pharmacist what benefit you will derive from the manganese in your multivitamins. They will have a hard time to answer this question. It may be good for something, as anyway, trace amounts of manganese are found in many foods we eat. But it's clearly unnecessary as supplement.

The obsolete

The following ingredients of multivitamins are typically provided in such irrelevant amounts that one may just as well go without the supplementation:

Vitamin C - multivitamin pills often provide just around 100 mg; therapeutic or prophylactic dosages are in the range of 1 to 5 grams per day.

Vitamin E - multivitamins may provide 50 to 100 IU; most health benefits of vitamin E supplementation kick in at dosages of 400 to 800 IU.

Calcium - the officially Recommended Dietary Allowance per day is about 1 gram (1000 mg). If your multivitamins provide 25 or 50 mg, they just mixed it into the formula so they could print calcium on the label. The calcium amounts of some common foods: 100 gr oats - 52 mg; 100 gr chocolate - 191 mg; 100 gr sardines in tomato sauce - 240 mg; 100 gr oranges - 40 mg (47 kcal).

Magnesium - found in multivitamin products at around 10 mg. The officially Recommended Dietary Allowance per day for men 25 to 50 years of age are 350 mg. Therefore, 10 mg are an absolutely irrelevant amount.

The kidneys very well regulate magnesium levels. The magnesium contents of some foods: 100 gr oats - 148 mg; 100 gr chocolate - 60 mg; 100 gr sardines in tomato sauce - 34 mg; 100 gr banana - 29 mg (92 kcal); 100 gr oranges - 10 mg (47 kcal).

Potassium - multivitamins may provide just some 5 mg per day, an absolutely irrelevant amount. The minimum daily requirement is 2000 mg, and an average American diet contains 2000 mg to 6000 mg. The potassium contents of some common foods: 100 gr oats - 350 mg; 100 gr chocolate - 385 mg; 100 gr sardines in tomato sauce - 341 mg; 100 gr banana - 396 mg (92 kcal, no other minerals in significant amounts); 100 gr oranges - 181 mg (47 kcal)

Choline Bitartrate - you may find 25 mg in multivitamin pills, which is an irrelevant amount; one egg already gives you about 250 mg choline.

PABA (para-aminobenzoic acid) - multivitamin pills often contain around 25 mg of this substance, of which common consumers have no idea what it may be good for. It's not necessary as a supplement as intestinal bacteria produce PABA. 25 mg also are an irrelevant amount; therapeutic dosages are several 100 mg, e.g. for hair growth.

The unwanted

While the substances listed above are largely unnecessary, your multivitamins may also contain substances, which you don't want to ingest if you care about your health.

Iron - whether iron supplementation through multivitamins or iron supplements makes sense, is primarily a question of age and gender. As bleeding depletes iron reserves, women before menopause may derive some benefit from supplemental iron. For men in developed countries, it's rather a question of how to avoid too much iron.

Unlike what is the case for minerals like calcium or potassium, there is no common route by which excess iron would be excreted from the body. It has to happen through bleeding, which is why donating blood is a healthy practice for some men. Too much iron intake will cause excessive iron storage in the liver and other organs. This is a condition called iron overload disease or hemochromatosis, with symptoms similar to diabetes. Iron overload may also interfere with sexuality and specifically may caused erectile dysfunction.

Vitamin D - many multivitamins contain 200 to 400 IU. More than 400 IU per day should be avoided. If you get some exposure to sunshine every day, you don't need Vitamin D at all.

Chromium - your multivitamins may contain 200 mcg of chromium, specified with the abbreviation GTF for Glucose Tolerance Factor. The following is an excerpt from a Reuters item dated March 23, 1999: "The popular dietary supplement chromium picolinate may damage DNA, possibly increasing the risk of cancer, a University of Alabama researcher reported at the American Chemical Society's annual meeting in Anaheim, California."

Molybdenum - your multivitamins may contain 150 mcg, specified as "natural molybdate". With molybdenum, the problem is usual one of toxicity rather than deficiency. Gout is a common health problem associated with too high a dietary intake of molybdenum.

3.2.2.4.7.9 Muira puama - not an aphrodisiac, just a tonic

Try any ordinary search engine with a query for "muira puama" and all you normally get as result is one sales pitch after the other. This is not specific to muira puama, of course. The same will happen if you try a query for saw palmetto, or bee pollen, or potassium.

Quackery is alive and kicking, in the US and anywhere around the world, as it was some 150 years ago. The only difference is that before quacks had to travel from town to town (if for no other reason than to avoid the guns of those who have tried their potions and found them to be worthless), and that now, they can spam the Internet (safely out of reach).

Just as some 150 years ago in the American West, quacks still peddle their herbal concoctions with the same exaggerated claims. And now as then, nothing sells as well as tinctures that promise extra performance during intercourse, or to cause an increase in penis size.

For those in the herbs business, the extraordinary success of Viagra surely came as no surprise. After all, Viagra does work for almost all men, though the stiff price of the Pfizer product for many men puts limitations on the frequency of that other Pfizer-caused stiffness.

No, muira puama is no substitute for Viagra, and it does not work as an aphrodisiac. Maybe it works as a general tonic. But in the arena of tonics, it competes with a wide range of other products, from green tea to red ginseng. Tonics are no miracle medicines, and the sales potential for just one more tonic is of course much lower than it would be for a so-called herbal Viagra.

It is our intention to set the record straight and slow down a little bit the moneymaking machines of those who promise you that you don't need Viagra if only you take your muira puama diligently (and purchase a generous supply from them).

You can buy your muira puama and feel good about having contributed to the preservation of the plant's habitat, the Amazon basin. There will probably also be some rather indistinct tonic effect. But the bottom line is that muira puama will do nothing to enhance your sexual function and performance.

In no way are we against tapping into the knowledge of traditional medicine's use of plants. But not every herb, Mongolian shamans or South American medicine men have been using, actually will work. This is especially true when it concerns herbs that allegedly improve male sexual performance.

Shamans and medicine men have found many a good herb against indigestion, or to induce sleep, or to treat nausea. But what their best clients, elderly tribal chieftains, always requested more than anything else, they were never able to deliver: a herb that would restore their sexual prowess. A notable exception: traditional healers in West Africa did have something at hand: the bark of the tree *Corynanthe yohimbe*.

Yohimbe is one of only two herbal remedies that indeed have the power to enhance sexual desire, function, and performance (and no, we do not sell any yohimbe). The other one is tongkat ali. (For information on tongkat ali, please see www.tongkatali.org (alternative sites: pasakbumi.com, eurycomalongifolia.net)

The active ingredient of yohimbe, yohimbine, has been isolated decades ago, and there are hundreds, if not thousands, of scientific studies that attest to the power of yohimbine in the treatment of erectile dysfunction or impotence, and in enhancing sexual parameters in healthy individuals.

You can check Medline, the huge database of scientific medical research, and you won't find a single document coming to the result that muira puama were to improve sexual function. Actually, you will have a hard time finding any scientific study on muira puama at all. If indeed, muira puama would work as aphrodisiac, this would hardly have escaped the medical profession, at least not in Brazil and other countries where muira puama is sold by quacks as ingredient of potency pills.

But there are thousands of scientific studies on the Medline database that attest to the aphrodisiac qualities of yohimbine, and there are some scientific studies that prove the sexual enhancement qualities of tongkat ali (scientific name: eurycoma longifolia).

I am not prejudiced. I have tried a bottle of muira puama myself. Taking muira puama alone, I haven't noticed any effect. In combination with yohimbine, muira puama didn't add to the yohimbine's power.

If the effect of muira puama probably is that of a general tonic, and if it were advertised as such, there would be nothing wrong with it. The nuisance is that anywhere it is sold as aphrodisiac because as aphrodisiac, the marketing potential is so much better.

Of course, those selling other herbal products often also cannot resist the temptation to drive up sales by ascribing some pro-sexual effects to the herbal they carry. The bluntest attempt in that direction, we have seen on a web site dedicated to saw palmetto. Saw palmetto capsules were advertised there as "the sex pills of the nineties". My God, saw palmetto is an anti-androgen, it interferes with dihydrotestosterone, and if anything, then it will make erections more difficult to achieve.

Muira puama isn't that bad. But it's also not an aphrodisiac.

3.2.2.4.7.10 DHEA - more hype than substance

When in the early nineties, US regulations regarding the sale of nutritional supplements were eased and alleged benefits could be claimed without having to be proven, DHEA was one of the first "wonder drugs" to hit the market.

Wild claims were made about its positive effects, and among the touted wide benefits of supplementing the hormone was nothing less than a general rejuvenation.

Because at that time, the American public had, for several decades, not been exposed to aggressive quackery, many people were easily deceived, and DHEA in many cases had a great placebo effect. It did on me. But I am more critical by now.

To start with, I do not doubt that the hormone DHEA has an important role in the human body. For example, if we completely inhibit DHEA synthesis, a wide range of unwanted conditions occurs in our bodies.

Sure, DHEA has many, many important functions. It may even be true that there is an age-related decline in the plasma levels of this hormone, and that this age-related decline is accompanied by a general decline in our functionality. But, please take note: that a general decline in functionality is accompanied by an age-related decline in DHEA plasma levels does not yet prove that the decline in functionality is caused by the decline in DHEA plasma levels. The decline of DHEA levels and our general functionality occur together, and they are both related to aging. But there are thousands of other aspects, which are also related to aging, and they do not disappear by just correcting the age-related decline of DHEA plasma levels.

And that DHEA has many useful functions does not mean that by just supplying more DHEA, all of these functions would be improved.

During the mid-nineties, I have taken DHEA for more than a year.

I assume that this had a positive effect, not because the DHEA in itself would have done much, but because after reading exiting coverage on the supplement in Time or Newsweek, I was so convinced that it would have a positive effect. The DHEA perception, of that I am now sure, was more effective a medicine than the DHEA itself.

For philosophical reasons, my interest is primarily in sexual enhancement. That DHEA enhances sexuality is one of the strongest arguments of those who sell it. Better sex is the essence of better health. If there indeed is a way to enhance sexual pleasure and performance, who would not want to spare a few bucks?

I became critical of DHEA after I had experienced drugs that really work to that end: cabergoline, tongkat ali, yohimbine, sildenafil, bromocriptine, and a few lesser members of this family.

I have stopped taking DHEA, with no ill effect on my sex life, or my body composition, or my mood in general. The positive effects I would have ascribed previously to DHEA were all in my mind. When I had a great time while using DHEA, I did so because I was convinced that I should have a great time, having ingested DHEA.

I never had real proof of DHEA's effect, and nor do those who still tout it. The effect is supposed to be subtle, developing over a prolonged period of use. Nothing dramatic, they say, just turning back the time a few years.

But with yohimbine, or tongkat ali, or sildenafil citrate, or bromocriptine, I don't have to wait for subtle effects. The effects clearly manifest themselves after a few hours, and they are very measurable: erection firmness, erection duration, ejaculatory force, multiple orgasms.

I tried DHEA before I engaged in serious research on sexual enhancement medications. I have since tried on myself practically every substance that has been reported to have a positive effect on sexual function or sexual satisfaction. There have been many more placebos.

Nevertheless, I have been able to engineer for myself a degree of sexual functionality that is much better than it was in the mid-nineties, even though I am now 10 years older.

3.2.2.4.7.11 Damiana - why enhancing estrogens is not advisable

Damiana, *turnera diffusa* by scientific name, is yet another herbal medication, which is sold as an aphrodisiac. It has been claimed that it is more effective in women than in men, but allegedly can be of help for men, too. Unlike what is the case for tongkat ali, there is little modern scientific research on damiana.

Of course, there are "empirical" ethnobotanical references reaching back decades and even centuries, though less than for the vaginal tightness herbs kayu rapat and daun sirih. And the empirical references for the aphrodisiac value of damiana are far less definite and affirmative than for the other two herbals mentioned above.

I (as a man) have tested damiana myself. It has no effect on me, just as ginseng has no effect on me. I have also talked with women who have tried it. I don't know of anybody on whom it would have had an effect in a range of just 10 percent of the effect of tongkat ali, kayu rapat, or daun sirih.

Apart from their ineffectiveness on me, there is another parallelism between damiana and ginseng. Surprisingly enough, both are estrogenic substances. D. Zava, C. Dollbaum, and M. Blen of Aeron Biotechnology, San Leandro, California, USA, conducted a study, the results of which were published under the title "Estrogen and progestin bioactivity of foods, herbs, and spices" in the scientific Journal Proc Soc Exp Biol Med in March 1998.

The authors summarized the results as follows:

"In this study we report on the content and bioactivity of plant (phyto) estrogens and progestins in various foods, herbs, and spices, before and after human consumption.

Over 150 herbs traditionally used by herbalists for treating a variety of health problems were extracted and tested for their relative capacity to compete with estradiol and progesterone binding to intracellular receptors for progesterone (PR) and estradiol (ER) in intact human breast cancer cells. The six highest ER-binding herbs that are commonly consumed were soy, licorice, red clover, thyme, tumeric, hops, and verbena. The six highest PR-binding herbs and spices commonly consumed were oregano, verbena, tumeric, thyme, red clover and damiana."

It is already known that estrogenic substances can have some beneficial effects on the health of men as well as women. In some scientific studies, it has been shown that regardless of the age of adult men, higher estrogen levels mean protection against heart disease and stroke.

What these studies do not mention is the fact that the same phytoestrogens that protect against heart attacks also have the power to greatly interrupt the sexual appetite and sexual function of men.

I am not particularly afraid of dying of a heart attack. I will die of some cause anyway, and a quick death from a heart attack is probably better than a slow death from cancer or some other prolonged ailment.

What I don't want is a disturbance of my sexual function for as long as I am alive. I have, therefore, decided against substances such as damiana.

And I believe that even for women, phytoestrogens are ill-advised.

It has been known for decades that both sexes produce both so-called sex hormones, estrogens and testosterone (with the main estrogen, estradiol, actually metabolized from testosterone by the enzyme aromatase). However, men's testosterone levels are about ten times as high as those of women.

In both sexes, testosterone is essential for sex drive. Men lacking in testosterone usually are sexually sluggish or impotent, while raising the testosterone levels in women just slightly can make a very, very big difference for sexual appetite. This is why many women react so well on tongkat ali, even if they take dosages much lower than men do.

In general, phytoestrogens are credited with disrupting sexual functions in mammalian males, rather than supporting them. For example, cattle grazing on fields of red clover (a phytoestrogen) will experience a marked decline in fertility.

3.2.2.4.7.12 The benefits of carnitine

Carnitine is an amino acid, which has been found to have a wide range of protective effects and health benefits as long as it is consumed in sufficient amounts. Carnitine's protective effects are associated primarily with heart health. It has been shown to be a factor in the protection against heart disease.

One of a number of additional health benefits of carnitine is that it increases fat metabolism. It therefore helps in avoiding obesity, so the claim goes. Obviously, if carnitine can aid in avoiding obesity, it automatically qualifies as a medication against many health problems, which are associated with being overweight.

Carnitine is popular among athletes and body builders as it increases stamina and has been shown to help in developing muscle mass.

We haven't encountered claims that carnitine would be helpful in sexual functions, even though such claims (usually unsubstantiated) are regularly made for any kind of nutritional product as they tend to increase sales.

And please be aware of the following: that carnitine is a healthy amino acid does not mean that one should buy carnitine as supplement capsules. The best source for carnitine is meat. So, do yourself a favor and eat a steak.

3.2.2.4.7.13 How to use arginine to help erections

In recent years, arginine has been heavily promoted as a health supplement capable of enhancing sexual function in men. Specifically, it has been claimed that arginine supplementation may ameliorate erectile dysfunction, and may be capable to produce better erections in healthy men. On the Internet, corresponding information is primarily emanated on websites, which serve as storefronts of vitamin and supplement retailers.

We do NOT sell arginine or any other pills, vitamins, or minerals. Our aim is to provide qualified information, and to establish our sites (Yohimbe.org, Arginine.net, and others) as a competent source of information, regardless of whether the information, which we believe to be truthful, will support a decision to buy arginine or not.

I have myself experimented a lot with arginine supplements in capsules and as bulk powders and have found these supplements disappointing, compared to what I expected after reading about it on websites promoting them. I have been much more successful with foods rich in arginine. Incidentally, many of these arginine-rich foods have a long-standing reputation in folk medicine as aphrodisiacs, and apart from containing a proportionally high amount of arginine; they are mostly also rich in vitamin E and zinc, the vitamin and the mineral with the strongest association with sexual function.

Sure, my own experiments with arginine supplements (capsules and powder of pure arginine) are anecdotal in character... nothing like double-blind crossover scientific studies. But I have experimented in the same way with yohimbine and Viagra, and there could have been no doubt that both of these substances work.

There are scientific studies on arginine, and they indeed show clearly that arginine has something to do with erections.

But I know of no study that would simply prove that arginine supplementation is a definite successful treatment for erectile dysfunction, or that it has the power to enhance sexual function in healthy men.

With scientific studies, one has to be careful not to jump to conclusions that are not specifically supported. For example, if a scientific study shows that arginine supplementation gives aging male rats better erections, one cannot just derive that it will do the same for aging male humans.

In fact, studies do exist that show that arginine supplementation does cause better erections in rats. One such study was done at the Department of Surgery, Harbor-UCLA Medical Center, Torrance, California and titled: Effects of long-term oral administration of L-arginine on the rat erectile response.

During the study, arginine-fed and control rats underwent electric field stimulation of the cavernosal nerve to induce erection and maximal intracavernosal pressure was measured. The corpus cavernosum is the part of the male sexual organ that fills with blood during sexual response, thus causing an erection. An increased intracavernosal pressure will manifest itself as increased rigidity, and, if it occurs in the human male, will subjectively be interpreted as a "better" erection. The above-cited study found that indeed, long-term arginine supplementation will cause a higher intracavernosal pressure... in the rat.

The authors of the study came to the following conclusion: *"Long-term oral administration of supra-physiologic doses of L-arginine improves the erectile response in the aging rat. We postulate that L-arginine in the penis may be a substrate-limiting factor for NOS activity [NOS = nitric oxide synthase, the enzyme responsible for metabolizing nitric oxide from L-arginine - ed.]*

and that L-arginine may up-regulate penile NOS activity but not its expression. The blockade of penile erection by EFS [electric field stimulation - ed.] with L NAME [N-omega-nitro-L-arginine methyl ester, a substance that blocks nitric oxide synthase metabolizing nitric oxide from L-arginine - ed.] suggests that if ancillary corporeal vasodilator mechanisms develop a basal level of NO synthesis is still required for activation and relaxation of the corporeal smooth muscle. These data support the possible use of dietary supplements for treatment of erectile dysfunction."

Other studies have shown that L-NAME hinders erections in the human corpus cavernosum, and that without normal nitric oxide function, erections do not occur.

All of this is very interesting. But it's premature to assume that taking a daily spoonful of L-arginine will significantly improve the sex life of patients suffering from erectile dysfunction, or of healthy subjects.

Sure, nitric oxide is needed for erections, and the enzyme nitric oxide synthase needs L-arginine to metabolize nitric oxide.

But there may be a good number of co-factors involved. It may just happen that humans need a vitamin or mineral or other catalyst in order to make use of arginine, and that a supplementation of plain arginine alone is ineffective.

All too often, a promise of "better" sex will, sadly enough, make men hand over their critical minds to the cloakroom attendant. Try to sell them some expensive remedy to make for healthier lungs or livers, and they will likely demand proper scientific proof before paying up. But when it comes to medications that promise power to go on for 30 minutes, and this three or four times a day, a large number of men are inclined to try it without demanding proper proof, even if it costs them a whole day's salary.

Am I one of these men? As a matter of fact, I have tried almost everything.

I have been experimenting for years, and I will never stop experimenting. When I started experimenting some 5 or 6 years ago, my sex life was very down. I have learned several ways to improve it, and to get my kicks in a dimension I would have thought impossible to achieve at my age (pushing 50).

Five or six years ago, I did almost everything wrong. I may still be doing some things wrong, but the proportion between what I'm doing right and what I'm doing wrong has tilted much towards the right. The proof of the pudding is in eating it.

I am a scientifically minded person, and when I encounter claims that yet another substance enhances sexuality, I do first look for scientific support. But I do not only look for scientific studies; I do read anecdotal evidence, and I do not belittle traditional medicine.

We have to be aware that scientific studies are often contradictory. For example, one can find scientific studies that show both: that yohimbine has an effect, and that it has no effect on erectile function. And I've read abstracts claiming that testosterone causes prostate cancer, and abstracts claiming that testosterone actually protects from prostate cancer. Medical history is full of U-turns.

If it concerns sexual enhancement, I value anecdotal evidence from a credible source or the consensus of folkloric sources. If something works in many men, then there will be an increased likelihood, but no guarantee, that it will work with me. With yohimbe, the efficacy had been established in folk medicine long before the first scientific studies have been conducted.

The same goes for garlic supporting general health (but not sexual function), and for saw palmetto bringing relief to men suffering from prostate enlargement.

I believe that optimal sexual function is correlated to good general health. For this reason, I try to live a healthy lifestyle, including consuming healthy food and avoiding food recognized to be of little benefit to general health.

Nevertheless, we have to be aware that not everything that supports general health is also conducive to a satisfying sex life. And I wonder how many men do harm to their sexual function while trying to promote their general health.

Both saw palmetto and garlic are cases in point. Saw palmetto shrinks an enlarged prostate, largely by interfering with the conversion of testosterone by the enzyme 5-alpha-reductase into dihydrotestosterone. But for me, while I'd like to have a healthy prostate until old age, saw palmetto too heavily interferes with erections. It causes numbness and non-responsiveness of the male organ.

Garlic is healthy for many organs, including (!) the prostate. There is some evidence that it can be helpful even in the treatment of prostate cancer. Which is what made me suspicious.

And indeed, when I consume a bulb of garlic (my heart and blood vessels are probably grateful), erections don't seem to happen easily for up to two days. Obviously, I cancelled garlic from my diet. (I care to live long only for as long as I can get my sexual kicks; I do not see much sense in other aspects of life, including literature.)

I have had better results from experimenting with other dietary factors. Nuts, for example.

Nuts, any kind of nuts, are, of course, a mainstay of macrobiotic nutrition, and few dietitians would contest that they are a valuable component of a healthy menu. Nuts provide unsaturated fats, vitamin E, and a fine selection of minerals (brazil nuts are the best source one could think of for selenium). Folk medicine also attributes aphrodisiac properties to nuts in general.

I have read on more than one medical website that a) nuts are high in arginine, and that b) the high arginine content of nuts can cause more frequent outbreaks in patients who suffer from herpes.

But actually, the arginine content of nuts is not so high in comparison to the arginine content of other foods. Not high enough to make nuts by themselves responsible for herpes outbreaks.

The following data on arginine is from a publication of the US Department of Agriculture. According to this publication, the arginine content of 100 grams of selected foods is:

Almond nuts - 2.466 gram
Brazil nuts - 2.390 gram
Cashew nuts - 1.837 gram
Hazelnuts - 2.211 gram
Pistachios - 2.108 gram
Sunflower seeds - 2.403 gram
T-bone steak - 1.492 gram
Sardines - 1.473 gram
Fried chicken - 1.793 gram

The arginine content of nuts is a little bit higher than that of meat or fish. However, the above list does not take into consideration that the water content of meat and fish, even when fried, is around 50 percent, and that the water content of nuts is typically less than 5 percent. If dry mass is compared, the arginine content of fish and meat probably is higher than that of nuts.

But fish and meat do not have the reputation to supply excessive amounts of arginine, cause herpes outbreaks, or be useful as aphrodisiacs.

There must be something else that either supports the absorption of the arginine in nuts, or that helps its bioavailability. Foods, of course, are not just a mixture of a few amino acids, a few minerals, and a few vitamins, all of which can be synthesized in the laboratory. If I take nuts and extract some 20 amino acids, some 10 minerals, and some 15 vitamins, and then mix these extracts, what do I get: nuts? By no means. Foods are much more complicated chemical compounds.

I have started eating a diet rich in nuts primarily for reasons of general health. It was only after some time that I noticed that such a diet in me definitely supports sexual function.

I was wondering why.

Could it be the vitamin E or the zinc? Both have a reputation of supporting sexual function, and I have tried both in the form of encapsulated supplements. The vitamin E and zinc supplements had no effect, just as the "pure" arginine supplements I consumed.

And even though the arginine content in nuts is not that different from the arginine content in meat and fish, I do assume that the sexuality-enhancing effect of nuts is related to arginine. Why? Because not only do nuts enhance erectile response; a diet rich in nuts can provoke in me a herpes outbreak every three months, while without any or just a few nuts in my diet, it's more like once a year.

There is, to the best of my knowledge, no association between vitamin E and zinc on the one side, and herpes on the other side. This indicates that what is active in nuts in improving erectile response, as well as provoking herpes outbreaks, probably is related to arginine. (I have herpes outbreaks only at times when I have reason to be proud of my erectile capacity; it's sort of funny that usually, when I think, wow, I have great reproductive health, a herpes outbreak isn't far away.)

Apart from what you read in the subscriber sections of Yohimbe.org and other domains of mine, you will find few sources on the Internet that attest to the sexuality-enhancing capabilities of a diet rich in nuts, and the reason is not that it wouldn't work, but that little money can be made by promoting it. You'll buy your nuts at a supermarket near you, and the retail profit margins in nuts are probably around ten percent, and not hundreds of percent as in capsulated supplements. (And just be sure that I have no stake in any supermarket, or nuts wholesale or retail business.)

With my recommendation to get your sexuality-enhancing arginine from nuts, I stand pretty much alone against hundreds or thousands of sites that promote the use of supplemental "pure" arginine to support sexual function. But it's just that there is a massive commercial interest in promoting the consumption of supplemental arginine (as well as other supplemental amino acids, junk minerals, and junk vitamins).

And because readers tend to put a lot of trust into quoted scientific articles, even if they don't fully understand them, websites that try to sell supplements go to great length in quoting scientific studies in order to... no, not in order to educate the public, but in order to sell their wares.

You get what you pay for. Because so much of the Internet is free, what comes along as information is very often just advertising copy, and spam. Quality information cannot be free, as this would contradict basic market dynamics. It's expensive to trust free information, as you will learn after having been enticed to buy bottles over bottles of expensive, useless supplements.

Appendix

I've had a reader's response on the previous version of this article, which I do want to share with site subscribers. The reader attributes the aphrodisiac power of nuts to their content in phytoestrogens, rather than arginine. Foods are, of course, complex chemical compounds, and I definitely am open to the assumption that what constitutes the sexuality-enhancing capacity of nuts must be a combination of several factors. But I do believe that arginine is a major one, as nuts not only support sexual health but also herpes non-health. And for these two aspects, the likely link is arginine.

Remember your article about how nuts seem to work well for you, but arginine supplements did not?

I was looking at the phytoestrogen (steroid-like molecules produced by plants) contents of many foods today, and one of the things I discovered is that nuts are very high in the phytoestrogen secoisolariciresinol.

Phytoestrogens exhibit estradiol-like activity in the human body. Phytoestrogens consist of three sub-classes: isoflavonoids, lignans, and coumestans. Secoisolariciresinol is a lignan.

This is significant because many phytoestrogens, including secoisolariciresinol, bind with the sex hormone-binding globulin, SHBG, competing with testosterone for binding sites, causing more of the serum testosterone in your blood to become bio-available, or in other words more free testosterone. Thus foods like nuts have the effect of increasing free testosterone.

This is probably why you see a benefit from consuming lots of nuts, and do not see the same benefit when consuming an equal amount of arginine to the amount you would get from nuts. It is probably because it had nothing to do with arginine content.

Foods with high secoisolariciresinol content per unit weight include flaxseed, berries, guava, green tea, black tea, some citrus fruits, cabernet sauvignon wine, broccoli, garlic, sunflower seed, walnuts, and hazelnuts in order of highest to lowest. Of course, as you point out, the amount one would consume of various foods ordinarily would vary greatly - you would consume a few milligrams of tealeaves in a tea, but many grams in a serving of broccoli. When taking typical serving size into account, broccoli appears to be the most active food in this regard. Flaxseed and linseed have unusually high levels - 500 times higher than anything else.

A tablespoon of linseed or flaxseed oil every day would have a strong effect.

Many oilseeds and cruciferous vegetables also contain two other phytoestrogens abundantly, daidzein and genistein, which are also estradiol-like in their activity.

Some isoflavones, a sub-class of isoflavonoids, are known to be aromatase inhibitors (e.g. chrysin), which also increases free testosterone and DHT levels. Isoflavones affect a number of things in the body in addition. Some interfere with 5-alpha reductase, and therefore inhibit DHT production as well.