Book Description
It seems as though every day brings a new pill or potion claiming to restore mental alertness or improve memory. While many of these claims are based on factual information, many others are not. This encyclopedia of foods and drugs that are believed to improve mental performance contains information on nearly 400 nutrients, herbs, and drugs, ranging from ancient plant compounds to the latest pharmaceuticals. Entries are arranged by type of substance, such as foods, vitamins, minerals, spices, and medical drugs. Each entry contains information such as alternate names and forms, sources, results, side effects, precautions, and recommended dosage. Although readers are encouraged to consult with their doctors before diagnosing and treating themselves, this book provides crucial, factual, and unbiased information on the "miracle drugs" that many people believe can solve health problems from fatigue to Alzheimer's. Readers can discover for themselves the properties of each substance. A complete index allows for easy reference and help with alternate names, food and drug interactions, and symptoms.
Preface

The brain is a physical organ just like the heart or lungs or liver and, as such, its functioning can be affected by our environment, particularly the substances we put in our bodies. I first became aware of smart drugs from an article in Omni magazine some twenty years ago while I was attending college. It was also at that time that I was becoming aware of health foods, and the article so impressed me that, while other students were taking speed and No-Doz to cram for exams, I was gobbling handfuls of vitamins. While my approach was undoubtedly too haphazard and belated to have had much effect, it certainly set me on the right path.

But it wasn't until a few years ago that a number of books began coming out extolling the virtues of synthetic drugs that could actually reverse aging, prevent Alzheimer's, or improve the functioning of the brain. I began taking notes, thinking the information, when summarized, would amount to no more than a few dozen pages. Even though I only worked on it occasionally and in my spare time, it didn't take long for the research to swell to its current size.

My enthusiasm for the project was tempered by the fact that many of these books downplayed or ignored the side effects of these drugs, some of which were quite serious. Compounding my frustration was the fact that none was very comprehensive and none could be used for easy reference by the reader. I vowed to remedy that situation. The result is this book, which deals with over 400 various substances ranging from basic foods to the newest wonder drugs, from the most commonplace substances to the most obscure — by far the most complete work on the subject.

The chapters are arranged progressively, beginning with the safest and most natural substances and ending with synthetic drugs and additives that are experimental and potentially hazardous.

The entries for the substances are alphabetized by popular name within the appropriate chapter, and include such information as alternative names and forms (scientific, brand names, and so forth), sources (such as foods), effects (benefits), precautions (side effects, interactions, overdosage, medical conditions that may render the substance ineffective or toxic), and dosage. In the interest of brevity, I have eliminated much of the history, folklore, background, and detailed analysis of individual studies, dealing only with that information that can help the reader evaluate each substance.

This book does not contain a discussion of how the brain works and the various theories of aging. Neither does it deal with all the vitamins and nutritional supplements required by the human body—only those that have more-or-less direct effects on the brain. It should also be noted that all of the substances mentioned in this book are secondary to the two most important brain-boosters: physical exercise and mental exercise. It is essential to keep challenging yourself throughout life so that the mind and body remain in peak condition.

It seems rather ironic that, with new strides in medical and nutritional science enabling us to live longer and more productive lives, most people would rather not live to a ripe old age. This fear of old age is based on a basic misconception — that the elderly are invariably frail in mind and body. Too often, however, the ravages of age are no more than the accumulated results of a lifetime of poor health habits. Though some decline in abilities is inevitable, the picture is not as dire as it was once thought.

Though smart-drug proponents and the media will often tout a particular substance as a new "wonder drug," the truth is that there is probably no such thing. The human mind — not to mention the human body and the process of aging — is too complex for any single pill to be considered a cure-all, as there are inevitable side effects of any medicine, natural or man-made. The Fountain of Youth is not so much a single herb, or vitamin, or pill, but a way of life, a holistic view that takes into account all aspects of nutrition and health.
Encyclopedia of Mind Enhancing foods, drugs, and nutritional substances

1. Foods
2. Herbs
3. Vitamins, Minerals, and Related Nutrients
4. Amino Acids
5. Lipids
6. Nucleic Acids
7. Miscellaneous Nutrients
8. Hormones
9. Essential Oils
10. Ethogenes
11. Medical Drugs
12. Nootropics
13. Other
Foods

CARBOHYDRATES
The carbohydrates in our diet are the body's energy source and are divided into two types: simple and complex. Simple carbohydrates include sugars such as fructose, dextrose, and lactose. Complex carbohydrates are dietary fiber, pectins, gums, and other organic compounds that are resistant to breakdown by human enzymes. Complex carbohydrates are found in vegetables, beans, legumes, and whole grains. Simple sugars and refined sugars should be consumed only in moderation, as they raise blood sugar quickly and can cause fluctuations in energy levels. Simple sugars are not to be confused with simple carbohydrates, which are essential for good health.

Dosage: Eat at least 50-100 g/day of complex carbohydrates along with moderate amounts of simple sugars to avoid the glucose blood level and insulin spikes that can lead to weight gain.

Precautions: Avoid large intake of simple sugars. Table sugar should be used only in moderation.

HONEY
Honey is a natural sweetener, used for both flavor and energy. It is a good source of energy and is a natural sweetener with a low glycemic index. Honey is more gradual in its effect than table sugar, making it a better source of energy. Honey can be used in place of other sweeteners in your diet.

Dosage: 300-400 g/day from complex carbohydrates, or about 1,200-1,600 kilocalories/day (out of an average total of 1,800-2,200 kilocalories/day). Ideally, 65% of a person's caloric intake should be carbohydrates, with the remainder divided equally between fat and protein.

Precautions: Avoid feeding honey to babies under one year of age. Honey may contain spores of Clostridium botulinum, the bacteria that causes botulism, which is deadly in young babies. Honey also has the highest sugar content of all the natural sweeteners.

CARBOHYDRATES
Carbohydrates are the principal source of the body's energy and are divided into two types — simple and complex. Simple carbohydrates include sugars such as fructose, dextrose, and lactose. Complex carbohydrates are dietary fiber, pectins, gums, and other organic compounds that are resistant to breakdown by human enzymes. Complex carbohydrates are found in vegetables, beans, legumes, and whole grains. Simple sugars and refined sugars should be consumed only in moderation, as they raise blood sugar quickly and can cause fluctuations in energy levels. Simple sugars are not to be confused with simple carbohydrates, which are essential for good health.

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Cardamom also contains the compound borneol, which is helpful in treating gallstones. Doses by the}
**DA T'SAO**

Effects: Da t’sao is said to promote calmness and is used in China to treat insomnia and dizziness.

AKA: Jujube date.

Precautions: It appears to be a safe herb with no apparent side effects.

**DANDELION**

Effects: A good source of lecithin and choline, both of which are beneficial to memory, plus the

Taraxacum officinale, white endive, wild endive.

AKA: Blowball, cankerwort, lion’s tooth, priest’s crown, puffball, pu gong ying, swine snout,

Closely related to the lettuce family.

Precautions: It can interfere with the absorption of iron. Evidence for its supposed aphrodisiac

does not exist.

**CORDYCEPS**

Effects: It may have a calming or sleep-inducing effect. It is traditionally thought of as an

sacred mushroom that is used in China as a tonic to increase energy and stamina, either as a tea or

an extract.

Precautions: There is no scientific documentation of its claimed beneficial properties.

**DAMIANA**

Effects: Contains the stimulant compound ephedrine, which may explain its reputation as an

aphrodisiac. It has been used to treat bronchial congestion and narcolepsy. Herbalists have used it to

treat muscular and nervous system problems such as sciatica, and it may also have antiseptic

properties.

Precautions: There are no known adverse reactions. However, use with caution as it is a stimulant.

**CELERY**

Effects: Contains apigenin, which dilates the blood vessels, and several antioxidant vitamins. It can

be used to treat amenorrhea, angina, cardiac arrhythmia, dizziness, gout, high blood pressure, and

be used as a female aphrodisiac in Jamaican and West African societies.

Precautions: Prolonged use may have negative effects on the liver.

**CHINESE CLUB MOSS**

Effects: Contains hyperzine, which inhibits the breakdown of acetylcholine, which may aid in the

alleviation of symptoms of Alzheimer’s disease. Used by herbalists as a diuretic for kidney disorders

and as a treatment for nervous disorders and epilepsy.

Precautions: There is no scientific basis for its use as a diuretic, and it is not recommended for

腎炎 or other conditions.

**CHAMOMILE**

Effects: Chamomile is said to stimulate the brain, dispel weariness, calm the nerves, counteract

nausea and vomiting. An overdose of the tincture may cause diarrhea.

Precautions: Can cause reactions in those allergic to ragweed, aster, or chrysanthemums. There have

been reports of adverse reactions in those with a history of asthma.

**COLOMBIAN SAPOTE**

Effects: Contains nordihydroguaiaretic acid (NDGA), a chemical which has shown antioxidant and

anti-inflammatory properties.

Precautions: There is no scientific evidence for any claims of efficacy, and it is not recommended for

internal use.

**CLOVER**

Effects: An antioxidant. It also has anti-inflammatory properties, cleanses the intestinal tract, and

stimulates the white blood cells.

Precautions: There is no scientific evidence for any claims of efficacy, and it is not recommended for

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**CLOVER**

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GLASS

*Hesperidin-containing pectins perforate.*

Hesperidin is found in citrus fruits and is a common component of dietary fiber, which may cause gastrointestinal disorders.

DOM QUIN

*Angelica amurensis; Angelica chang, ruqiang, jiaogua.*

To take as an extract or tincture: to drink three times a day in a cup of water or alcohol; to take as a decoction or tincture: to steep in water or alcohol. Do not exceed the average daily dose only under a physician's care. Because of the relationship to PAF, it may be a problem for those with clotting disorders. High doses may cause diarrhea, headaches, and may cause anaphylactic reactions. It may be contraindicated for those with diabetes, eczema, glaucoma, inner ear dysfunction, macular degeneration, migraine headaches, and some types of cancer.

Precautions: It has been found to reduce the ability of sperm to penetrate eggs, and individuals should not take it if they are trying to conceive. It has been found to have anti-PAF activity, and may be helpful in treating asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease for six to twelve months, though some dispute this. It may be useful in treating anxiety, depression, and as a stimulant. It is said to benefit the stomach, improve digestion, and is used to treat heartburn.

DON SEI

*Compositum salicis, jinseido, jinseido lifu.*

To take six months before changes become apparent. It may have no memory- or brain-enhancement effects, but it may have other benefits such as reducing anxiety and depression. It is said to be useful in the treatment of Alzheimer's disease. It has also been used in the treatment of gout, neuralgia, respiratory ailments, and to improve memory and concentration.

Effects: Acts as a vasodilator, improving circulation in the medium and small capillaries in the brain.

GINKGO BILoba

AKA: EGb 761, Ginkgold, maidenhair tree, Rokan, Tanakan, Tebonin.

Ginkgo biloba contains ginkgolides, molecules that are antagonistic to Platelet Activating Factor (PAF), a major component of asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease, though some dispute this. It is said to improve memory and concentration, and may be useful in treating Alzheimer's disease for six to twelve months, though some dispute this. It has been found to reduce the ability of sperm to penetrate eggs, and individuals should not take it if they are trying to conceive. It has been found to have anti-PAF activity, and may be helpful in treating asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease for six to twelve months, though some dispute this.

Effects: Has been used to treat anxiety and depression. A stimulant, it is said to benefit the stomach, improve digestion, and is used to treat heartburn.

GLNKGO BILOBA

Dosage: One teaspoon in one or two cups of water, simmered for 30 minutes.

GENTIAN

AKA: Lycii, Lycium chinenses, lycium Chinese, wolfberry.

Gentian is a root that is said to be bitter and cold. It is said to be useful in the treatment of Alzheimer's disease. It has also been used in the treatment of gout, neuralgia, respiratory ailments, and to improve memory and concentration. It is said to be useful in the treatment of Alzheimer's disease for six to twelve months, though some dispute this. It has been found to reduce the ability of sperm to penetrate eggs, and individuals should not take it if they are trying to conceive. It has been found to have anti-PAF activity, and may be helpful in treating asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease for six to twelve months, though some dispute this.

Effects: A good source of choline and beta-carotene, both of which are useful in the treatment of Alzheimer's disease. It is said to be useful in the treatment of Alzheimer's disease for six to twelve months, though some dispute this. It has been found to reduce the ability of sperm to penetrate eggs, and individuals should not take it if they are trying to conceive. It has been found to have anti-PAF activity, and may be helpful in treating asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease for six to twelve months, though some dispute this.

Ginger

AKA: Zingiber officinale, Khasi ginger, mani, rare ginger.

Ginger is a root that is said to be hot and sweet. Ginger has been used to treat nausea, vomiting, and motion sickness. It has been used to treat gout, neuralgia, respiratory ailments, and to improve memory and concentration. It is said to be useful in the treatment of Alzheimer's disease for six to twelve months, though some dispute this. It has been found to reduce the ability of sperm to penetrate eggs, and individuals should not take it if they are trying to conceive. It has been found to have anti-PAF activity, and may be helpful in treating asthma, allergies, and inflammatory conditions. It may also be helpful in treating Alzheimer's disease for six to twelve months, though some dispute this.

Effects: Has been used to treat anxiety and depression. A stimulant, it is said to benefit the stomach, improve digestion, and is used to treat heartburn.

Ginger

Dosage: One clove of garlic a day (about 4 grams). Supplements should provide at least 10 mg/day of allicin. Garlic capsules of 600 mg daily may be as effective as 600 mg/day of garlic oil. уровь The effects wear off rapidly, so that larger and larger doses are needed to achieve the same effect.

Garlic

AKA: Allium sativum, Allium sativum, allium, allium sativum sativum, allium sativum sativum sativum, allium sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sativum sit...
Ginseng may cause allergy symptoms, increased blood pressure, diarrhea, gastrointestinal problems, and headaches. It may interact with such blood thinners as Warfarin (coumadin) and aspirin.

Ginseng may belong to the ginseng family, Panax ginseng, family Araliaceae. It is also known as Chinese ginseng, red ginseng, and Korean ginseng. It is used in traditional Chinese medicine as an adaptogen, a nontoxic substance that normalizes body functions and protects against harmful stress. It has been used for centuries in Chinese medicine and is known for its many health benefits.

Gotu-kola and Fo-ti-tieng

Gotu-kola is an herb with many health benefits. It is often used to improve memory, mental clarity, and concentration. It is also used to treat a variety of other conditions, such as varicose veins, wounds, and obesity. Fo-ti-tieng is similar to gotu-kola and is also used to treat these conditions.

Green Tea

Green tea is a type of tea that is made from the leaves of the Camellia sinensis plant. It is picked and processed in a way that prevents the oxidation of the leaves, which results in a lower amount of catechins and caffeine compared to black tea.

Guggul

Guggul is a member of the holly family and is related to yaupon and yerbe mate. It is grown in India and is used in traditional medicine as an anti-inflammatory, stomachic, and diuretic. It is also known as Commiphora guggul, Gurjum guggul, Commiphora mukul, and Guggul. Guggul is used to treat a variety of health problems, such as skin infections, digestive problems, and respiratory conditions.

Gugulu

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Guarana

Guarana is a type of bean that is native to South America. It is used in traditional medicine as an energy booster and a natural stimulant. Guarana is also known as Paullinia cupana, Guarana tai, and Josta. Guarana is used to treat a variety of health problems, such as fatigue, depression, and weight loss.

Gut Grass, Wheat and Barley

Gotu-kola and Fo-ti-tieng

Gotu-kola and Fo-ti-tieng are Adaptogens, which help the body to adapt to stress. They work synergistically with red wine, grapeseed, and borage oil.

Hawthorn

Hawthorn is a tree related to the rose family that is native to Europe. It is used in traditional medicine as a heart tonic and blood vessel dilator. Hawthorn is also known as Crataegus oxyacantha, English hawthorn, hagthorn, May bush, May tree, quickset, thorn-apple, and Whitethorn. Hawthorn is used to treat a variety of health problems, such as heart disease, high blood pressure, and angina.

Lobelia

Lobelia is a plant that is native to North America. It is used in traditional medicine as a stimulant, cough suppressant, and expectorant. Lobelia is also known as Lobelia inflata, Indian tobacco, blue tobacco, red tobacco, and wolf tobacco. Lobelia is used to treat a variety of health problems, such as coughs, colds, and asthma.

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**Silymarin**

Silymarin and its basic component silybin may protect cell membranes from free damage—which could manifest itself as irritability, fatigue, malaise, anxiety, depression, and mild already occurred. Studies published in the Journal of the American Medical Association have and high doses of Tylenol (acetaminophen) and iron. Milk thistle may even reverse damage that has may also help protect the liver from otherwise beneficial pharmaceuticals such as antianxiety drugs, artichoke.

**AKA: Carduus marianus, holy thistle, Mary thistle, St. Mary’s thistle, Silybum marianum, wild**

- **MILK THISTLE**

MILK THISTLE can be used to treat fatigue and prevent aging, in addition to being prescribed for infections, heart problems, and increased risk of cancer.

**LAVENDER**

LAVENDER may relieve stress, depression, and insomnia because of its ability to slow nerve impulses, producing an anesthetic effect. It may also be good for the skin, and has been used in the treatment. Neither should it be used as a substitute for benzodiazepines, as it is not as effective in similar to opium and cocaine. It probably should not be used for severe anxiety or for long-term treatment. It is a preferred alternative to Xanax. It is recommended that kava not be combined with benzodiapezine tranquilizers, spasms, nausea, biochemical abnormalities, vision disturbances, and shortness of breath.

- **KAVA AND KAWAIN**

Kava should not be taken by those with Parkinson's disease (it could worsen muscular unappealing alternative. The population of the South Seas do not engage in, as the taste and thick fibers of the root make this an

- **LAVENDER**

- **JATOBA BARK**

JATOBA BARK is used as a tea in the rain forests of Brazil and Peru. It is a good way to relax.

- **HORSEBALM**

HORSEBALM relieves the symptoms of various digestive, respiratory, and cold-related ailments. It is used in alcoholic beverages, and is a mild sedative. It may aid the respiratory and urinary systems and help in the alleviation of care of the roots, and is considered a good medicine for the treatment of colds, flu, and infections. It is also used as a sedative and anesthetic in the treatment of fever and feverish conditions. Kava is non-addictive and non-habit forming. It does not produce withdrawal symptoms when taken as a natural substance.

- **LAVENDER**

LAVENDER is a fragrant and calming herb that is often used in aromatherapy. It is known for its calming and relaxing properties. It is often used to relieve stress, anxiety, and depression.

- **HOPS**

HOPS is a plant used as a tea in the rain forests of Brazil and Peru. It is a good way to relax. It is also used in alcoholic beverages, and is a mild sedative. It may aid the respiratory and urinary systems and help in the alleviation of cold-related ailments. It is used in alcoholic beverages, and is a mild sedative. It may aid the respiratory and urinary systems and help in the alleviation of care of the roots, and is considered a good medicine for the treatment of colds, flu, and infections. It is also used as a sedative and anesthetic in the treatment of fever and feverish conditions. Kava is non-addictive and non-habit forming. It does not produce withdrawal symptoms when taken as a natural substance.

- **KAVA AND KAWAIN**

Kava should not be taken by those with Parkinson's disease (it could worsen muscular

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- **KAVA AND KAWAIN**

Kava should not be taken by those with Parkinson's disease (it could worsen muscular
ROSEMARY

Reishi can interact with Thorazine and barbiturates. Skin eruptions.

Precautions: It should not be taken by hemophiliacs because it is high in adenosine. It should not be used in treating chronic bronchitis, peptic ulcer disease, hypertension, insomnia, and high blood pressure. It has been used to treat viral hepatitis, may protect the liver from various toxins, and may be useful in treating chronic bronchitis, peptic ulcer disease, hypertension, insomnia, and high blood pressure.

NETTLE

Common name: nettle. Native to Europe and Asia, nettle is a biennial herb with a long tap root and compound leaves. The plant is covered with tiny hairs that produce a stinging sensation when touched. The leaves are used as a herb and are sometimes ground up and added to salads.

Effects: An antioxidant. Herbalists have used it to treat bad breath, periodontal disease, and skin infections. It is also used as a diuretic and to treat menopausal symptoms.

Precautions: It is toxic in large amounts.

BURRSS

AKA: Morinda species.

Dosage: Two to three teaspoons of leaves per cup of water, not to exceed one and a half to two cups a day.

Polyserase

AKA: Portulaca, Portulaca oleracea, pussley.

Effects: Reportedly aids cell regeneration, strengthens the immune system, and slows aging.

Precautions: It is toxic in large amounts.

ROSEMARY

AKA: Rosmarinus officinalis, a few handfuls of oatmeal in a warm bath can relieve the itching of hives.

Effects: Said to have antidepressant and aphrodisiac properties. Preliminary studies have shown that passion flower is said to relieve depression and anxiety and promote restful sleep. It has been used by herbalists to treat anxiety, convulsions, and neuralgia, though scientific evidence is lacking.

Precautions: It is toxic in large amounts.

Raisin

AKA: Vitis vinifera. Raisins are the dried form of grapes. Raisins are a popular snack food and are used in baking. They are a good source of dietary fiber, potassium, and iron.

Effects: The effects of raisins on blood pressure and cholesterol levels are not well studied, but preliminary studies have shown that they may have some antioxidant properties.

Precautions: There appears to be little chance of any side effects with moderate use: studies have shown that less than one percent of users have suffered side effects — and then only gastrointestinal discomfort and bloating.

Raspberry

AKA: Rubus idaeus. Rubus species.

Effects: Rich in antioxidants, including glutathione and vitamins A, C, and E. It also contains high levels of Omega-3 fatty acids, magnesium and potassium, along with calcium, folate, and lithium, all of which may help relieve depression. Purslane has been used to treat asthma, angina, bursitis, cardiac arrhythmia, chronic fatigue syndrome, gingivitis, headache, high blood pressure, intermittent claudication, multiple sclerosis, psoriasis, shingles, skin problems, tendinitis, wrinkles, and yeast infections.

Precautions: None known. Purslane should not be used in treating breast cancer or melanoma.


**Valerian**

**AKA:** All-heal, Biral, Euvegal, moon root, Nutrasleep, phu, setwall, Undine's herb, Valdispert forte, Valeriana officinalis, Valmane.

**Effects:** Reduces anxiety and insomnia to a moderate degree, possibly because of chemicals called valerenic acids, which are metabolized into important neurotransmitters — serotonin, norepinephrine, and dopamine — the first substance known to interact with either of the neurotransmitters and serotonergic system. It is also known to reduce the production of cortisol, a hormone that increases with stress.

**Dosage:** It could cause problems when used in large quantities. One teaspoon of rootstock in one-half cup of water or 5 to 20 drops of tincture a day is recommended.

**Precautions:** Though it is said to be safe, it should not be used by those with impaired kidney or liver function, high blood pressure, high blood calcium, diabetes, high blood cholesterol, high blood pressure, heart disease, kidney disease, liver disease, and certain neurological problems. There are a few recorded cases where high doses have caused liver damage.

**Works synergistically with:** hops.

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**Saffron**

**AKA:** Crocus sativus, saffron.

**Effects:** Saffron is said to increase energy, regulate hormonal activity and protect against radiation. Herbalists have used it for catarrhal problems, colds, fever, flatulence, frigidity, gout, hives, inflammation, infections, indigestion, inflammation, mouth and throat disorders, night sweats, excessive perspiration, severe anxiety, and stress; the flowers are rubbed on the skin when the body is in contact with it and in the treatment of dysentery.

**Dosage:** One-quarter to one-half teaspoon of powdered leaves at a time. Fifteen to 40 drops of tincture three or four times a day.

**Precautions:** It should be handled with care when applying directly to the affected part and not used in large quantities because it can cause harm to the nervous system and cause convulsions in high doses. Prolonged use or overuse can lead to nervous system problems. It should not be taken with any alcohol or tyramine rich foods or drugs, and high doses should not be combined with high doses of 5-HTP. It can interfere with the absorption of iron and other minerals. It should not be taken with any other antidepressants, as it could cause dangerously high levels of serotonin.

**Works synergistically with:** kava.

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**Schizandra Berry**

**AKA:** Para todo, Pfaffia paniculata.

**Effects:** Promotes energy and stamina. Has been used to treat exhaustion resulting from Epstein-Barr disease and chronic fatigue syndrome. Schizandra is said to penetrate eggs and may cause a genetic mutation which, if found in adult women, is correlated with breast cancer.

**Dosage:** Three to six capsules a day in three divided doses.

**Precautions:** Scientific evidence is lacking for many of its claims, including its ability to reduce cancer and chronic fatigue syndrome.

**Works synergistically with:** hops.

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**Sarsaparilla**

**AKA:** Aralia hispida (bristly sarsaparilla), Aralia nudicaulis (wild sarsaparilla), Aralia racemosa (white sarsaparilla), congo (spikenard), Chinese root, life-of-man, small spikenard, Smilax offidnalis.

**Effects:** Sarsaparilla is said to increase energy, regulate hormonal activity and protect against radiation. Herbalists have used it for catarrhal problems, colds, fever, flatulence, frigidity, gout, hives, inflammation, infections, indigestion, inflammation, mouth and throat disorders, night sweats, excessive perspiration, severe anxiety, and stress; the flowers are rubbed on the skin when the body is in contact with it and in the treatment of dysentery.

**Dosage:** One teaspoon of rootstock in one cup of water for one to two cups a day.

**Precautions:** When chewed, the dried root can cause nausea in smokers, a property which leads some to believe that the root is a cure for smoking addiction.

**Works synergistically with:** kava.

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**Skullcap**

**AKA:** Convolvulus mycrophyllus.

**Effects:** Reported to reduce insomnia and anxiety. Bioflavonoids in Chinese skullcap have been shown to counteract stress, and improve mental functioning. It has proven beneficial in treating some liver disease and chronic fatigue syndrome.

**Dosage:** One teaspoon of rootstock in one-half cup of water, for up to one cup a day.

**Precautions:** It is not known whether the skullcap root has any significant cosmetic side effects or contraindications, but it should not be used during pregnancy.

**Works synergistically with:** hops.

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**St. John’s Wort**

herbs for a sedative effect, which could be useful in cases of insomnia. Effects: Induces relaxation and sleep. In traditional Chinese medicine, it is often combined with other
recommends 15 to 20 drops of tincture, 250 to 500 mg of the dried herb in capsules, or one cup of tea
Dosage: Six to ten teaspoons of shaved bark boiled in a pint of water for five minutes. Mark Mayell
Some supplements may contain little or no active yohimbine.

While yohimbine is not an MAO inhibitor, yohimbe is, and so should not be combined with tyramine-
decrease the effects of antidepressant and antihypertensive drugs. It should also not be combined with
antihistamines, tranquilizers, diet pills, narcotics, amphetamines, cocaine, marijuana, or any mood-
death alkaloids, angina pectoris, hepatitis, hypoglycemia, blood pressure disorders, ulcers, diabetes, kidney

It is not physically addictive, but can create a psychological dependence. The whole herb is a
from or being treated for depression, any psychiatric disorder, any other allergy, or those taking any
disease, liver disease, heart disease, panic attacks, bipolar disorder, or schizophrenia. Those suffering

There are no known life-threatening or common side effects. Less common side effects include

Effects: Yohimbe is said to produce a tingling feeling along the spine, followed by a mild, pleasant,
and euphoric high lasting four to six hours. In high enough doses, it can produce mild hallucinogenic-
yohimbe, Prohim, Thybine, yerba del pasmo, yerba mansa, Yocon, Yohimar, yohimbine

AKA: Actibine, Aphrodyne, Baron-X, Corynanthe yohimbe, Dayto Himbin, lizard tail, Pausinystalia

A caffeine-like stimulant reputed to relieve fatigue and insomnia, it may also cleanse the

Effects: An antioxidant. It has been traditionally used in Mexico for gastrointestinal disorders and as

AKA: Vanilla planifolia.

Dosage: Two teaspoons of powdered root in one cup of hot water (the herb should not be put in

It should not be used with alcohol, some antihistamines, sedatives, muscle relaxants, psychotropic

she fully recovered within 24 hours.

EXPERIMENT

Dosage: Two teaspoons of leaves or tops in one cup of water for one-half cup a day to be taken in one

It should be used only under physician's guidance. If you have been taking any antidepressant or

be used to induce ecstasy and visions.

Effects: A mild stimulant because of its caffeine content, which is rather small (0.1 percent). Indians

the U.S. to contain caffeine.

A rare North American shrub, it is related to yerbe mate and guayusa, and is the only plant native to

Dosage: Two teaspoons of leaves or tops in one cup of water for one-half cup a day to be taken in one

It works synergistically with other healing herbs. Herbalists use Yerbe mate for allergies, coffee

Effects: A mild sedative. Has been used by herbalists to treat fever, flatulence, heartburn, indigestion,

AKA: Absinthe, Artemisia absinthium.

WORMWOOD

Effects: May aid in the prevention of Alzheimer’s disease much in the same manner that

VANILLA

Dosage: 500 mg each per day. Ray Sahelian, M.D., recommends 300 to 500 mg/day of concentrated root

Dosage: Two teaspoons of powdered root in one cup of hot water (the herb should not be put in

It should not be combined with vitamins, or calcium supplements, or any other medications which

There is no evidence for treating diabetes or hypertension.

Sheldon Saul Hendler, M.D., recommends no more than two cups of tea or two capsules of

The herb may also be of some help in controlling premenstrual cramps and menstrual pains, sores, wounds, epilepsy, convulsions, and the plague are unproven.

Effects: A mild brain stimulant.

Effects: May show a lower incidence of that disease. It may also be good for backache, headache, nerve pain, and

antiinflammatory drugs for arthritis seem to, as studies of those individuals taking the drugs seem to

According to Mayo, half of the people in his sample had oatmeal each day, and the remaining half had

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Effects: May show a lower incidence of that disease. It may also be good for backache, headache, nerve pain, and

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there is some evidence that oatmeal, especially whole grain, may help prevent colon cancer

Dr. Kritchevsky, president of the Free Radical Research Foundation, has reported that his preliminary studies

Research indicates that oat bran effectively reduces cholesterol levels in the blood.

Shark Phillip Phillips does not recommend eating with oatmeal.

Raw oat bran (not rolled, instant, or oat milk) is the best source of the heart-healthy compound called

Mucho Mate (tea), Paraguay tea, South American holly, yerba, yerba mate.

BLACK TEA

Dosage: The plant can be made into a tea by drying in the oven until black and then steeping in hot

poisonous and can cause vomiting and diarrhea.

In large quantities; the pure oil is a strong poison.

Effects: A mild stimulant because of its caffeine content, which is rather small (0.1 percent). Indians

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A rare North American shrub, it is related to yerbe mate and guayusa, and is the only plant native to

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VITAMIN B-3: NICOTINIC ACID (FOR THIAMIN)

Nicotinic acid (niacin) is a water-soluble B vitamin that is widely found in a variety of foods. It is responsible for the synthesis of nicotinamide adenine dinucleotide (NAD) and nicotinamide adenine dinucleotide phosphate (NADP), which are coenzymes that play crucial roles in numerous biochemical reactions. It also helps maintain the health of the digestive system, stabilize blood sugar levels, and improve cholesterol levels.

High doses of niacin can cause flushing, itching, or tingling sensations. In rare cases, overdose can cause liver damage. However, niacin is considered safe for prolonged use if taken under medical supervision. It is usually taken in doses ranging from 10 to 30 mg/day for most adults, with the maximum recommended daily intake being 35 mg/day.

Nicotinic acid is also well-known for its positive effects on cholesterol levels. It can lower both LDL and triglyceride levels, but it has a variable effect on HDL levels, with some research showing a decrease and others showing an increase.

Nicotinic acid is often used to prevent and treat high cholesterol and, in some cases, to treat other conditions such as diabetes or peripheral vascular disease. It is generally taken once or twice daily with a full glass of water on an empty stomach.

ANTI-INFLAMMATORY EFFECTS OF NICOTINIC ACID: Nicotinic acid has been shown to reduce inflammation in various conditions, such as rheumatoid arthritis and osteoarthritis. It is believed to work by inhibiting the production of prostaglandins, which are chemicals that cause inflammation in the body.

NICOTINIC ACID AND PROSTATE CANCER: Several studies have suggested that niacin may have a preventive effect on prostate cancer, possibly by reducing the levels of certain growth factors and hormones that promote cancer development.

NICOTINIC ACID AND COAGULATION: Nicotinic acid can affect blood clotting, so it should be used with caution by people taking blood-thinning medications. It may also increase the risk of bleeding in individuals with liver disease.

NICOTINIC ACID AND DIABETES: Nicotinic acid is contraindicated in individuals with diabetes unless prescribed by a healthcare professional.

Nicotinic acid is generally well-tolerated, but may cause side effects such as flushing, diarrhea, nausea, and headaches. In rare cases, it can cause liver damage. Therefore, it is important to monitor liver function if niacin is used for prolonged periods.

NICOTINIC ACID AND GOUT: Nicotinic acid may worsen gout symptoms, so individuals with gout should use it with caution.

NICOTINIC ACID AND ALCOHOL: Nicotinic acid may interact with alcohol, leading to an increased risk of liver damage. Therefore, it is recommended to avoid alcohol consumption while taking niacin.

In summary, niacin is a valuable nutrient with a number of potential health benefits, particularly in the areas of heart health and cholesterol management. However, it is important to use niacin under the guidance of a healthcare professional, as it can have significant side effects and may interact with other medications.

VITAMIN B-6: PYRIDOXINE

Pyridoxine is a water-soluble vitamin that is involved in numerous biochemical reactions in the body, particularly those involving proteins, carbohydrates, and fats. It is found in a variety of foods, including citrus fruits, green leafy vegetables, fish, and poultry.

Pyridoxine is necessary for the production of neurotransmitters, the breakdown of amino acids, and the production of neurotransmitters. It is also involved in the metabolism of carbohydrates and fats, and is important for the production of energy.

Pyridoxine is available in a number of forms, including pyridoxal, pyridoxamine, and pyridoxine hydrochloride. It is typically taken orally, and is available in OTC supplements.

VITAMIN B-7: BIOTIN

Biotin is a water-soluble vitamin that is involved in the metabolism of carbohydrates, fats, and proteins. It is necessary for the synthesis of certain hormones and is involved in the production of energy.

Biotin is widely found in a variety of foods, including eggs, liver, and beans. It is also available in supplements, which are typically taken orally.

VITAMIN B-9: FOLIC ACID

Folic acid is a water-soluble vitamin that is involved in the metabolism of carbohydrates, fats, and proteins. It is necessary for the production of red blood cells, and is important for the production of DNA and RNA.

Folic acid is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN B-12: CYANOCOBALAMIN

Cyanocobalamin is a water-soluble vitamin that is involved in the metabolism of carbohydrates, fats, and proteins. It is necessary for the production of red blood cells, and is important for the production of DNA and RNA.

Cyanocobalamin is widely found in a variety of foods, including liver, egg yolk, and soy milk. It is also available in supplements, which are typically taken orally.

VITAMIN D: CALCIUM, VITAMIN D3, D2

Vitamin D is a fat-soluble vitamin that is involved in the metabolism of calcium, phosphorus, and magnesium. It is necessary for the maintenance of bone health and is important for the production of red blood cells.

Vitamin D is widely found in a variety of foods, including fatty fish, egg yolks, and fortified milk. It is also available in supplements, which are typically taken orally.

VITAMIN E: ALPHA-TOCOTEROL

Alpha-tocopherol is a fat-soluble vitamin that is involved in the metabolism of fats and is important for the maintenance of healthy skin and hair.

Alpha-tocopherol is widely found in a variety of foods, including nuts, seeds, and vegetable oils. It is also available in supplements, which are typically taken orally.

VITAMIN A: RETINOL

Retinol is a fat-soluble vitamin that is involved in the metabolism of fats and is important for the maintenance of healthy skin, vision, and immune system.

Retinol is widely found in a variety of foods, including liver, egg yolks, and fortified milk. It is also available in supplements, which are typically taken orally.

VITAMIN C: ASCORBIC ACID

Ascorbic acid is a water-soluble vitamin that is involved in the metabolism of carbohydrates, fats, and proteins. It is necessary for the production of collagen, which is important for skin, bone, and connective tissue health.

Ascorbic acid is widely found in a variety of foods, including citrus fruits, green vegetables, and red bell peppers. It is also available in supplements, which are typically taken orally.

VITAMIN K: PHOSPHOGLIC NAPHTHOL (DIPHOSPHATE)

Phospho-\text{-}glucic naphtol (diphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (diphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN P: QUINOLONE ACETATE

Quinolone acetate is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Quinolone acetate is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN S: PHOSPHOGLIC NAPHTHOL (SULFATE)

Phospho-\text{-}glucic naphtol (sulfate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (sulfate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN T: PHOSPHOGLIC NAPHTHOL (TRIPHOSPHATE)

Phospho-\text{-}glucic naphtol (triphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (triphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN U: PHOSPHOGLIC NAPHTHOL (TETRAPHOSPHATE)

Phospho-\text{-}glucic naphtol (tetraphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (tetraphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN V: PHOSPHOGLIC NAPHTHOL (PENTAPHOSPHATE)

Phospho-\text{-}glucic naphtol (pentaphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (pentaphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN W: PHOSPHOGLIC NAPHTHOL (HEXAPHOSPHATE)

Phospho-\text{-}glucic naphtol (hexaphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (hexaphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN X: PHOSPHOGLIC NAPHTHOL (HEPTAPHOSPHATE)

Phospho-\text{-}glucic naphtol (heptaphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (heptaphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN Y: PHOSPHOGLIC NAPHTHOL (OCTAPHOSPHATE)

Phospho-\text{-}glucic naphtol (octaphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (octaphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.

VITAMIN Z: PHOSPHOGLIC NAPHTHOL (NOCTAPHOSPHATE)

Phospho-\text{-}glucic naphtol (octaphosphate) is a water-soluble vitamin that is involved in the metabolism of carbohydrates and fats. It is necessary for the production of red blood cells and is important for the production of DNA and RNA.

Phospho-\text{-}glucic naphtol (octaphosphate) is widely found in a variety of foods, including leafy vegetables, legumes, and citrus fruits. It is also available in supplements, which are typically taken orally.
**VITAMIN C AND BIOFLAVONOIDS**

Vitamin C, also known as ascorbic acid, is necessary for the body to produce and maintain collagen, which strengthens blood vessels, tendons, gums, and skin. Several enzymes require vitamin C, and the body uses it in the synthesis of certain neurotransmitters. Bioflavonoids work together with vitamin C, allowing it to do its job. Bioflavonoids are water-soluble, and they are found in many fruits and vegetables. Deficiency symptoms include impaired wound healing, loosened gums, and easy bruising.

Dosage: Approximately 100 to 200 mg/day, according to John Mann. Sheldon Saul Hendler, M.D., does not recommend supplementation under any circumstances. If you are taking vitamin C supplements, the recommended dosage should not exceed 10 mg/day.

Food sources: Most fruits and vegetables, particularly dried fruits.

**VITAMIN B-15 AND DIMETHYLGLYCINE**

Vitamin B-15, also known as pteroylmonoglutamic acid (PGA), is needed for the production of several other vitamins. It is present in all the B vitamins and in foods rich in protein. Those who consume a lot of red meat and dairy products have higher levels of vitamin B-15.

Dosage: Approximate 25 to 50 mg/day, according to John Mann. Those who eat a lot of red meat and dairy products can obtain all of the vitamin B-15 they need from their diet. Some tablets sold contain the B-15 intrinsic factor, a mucoprotein secreted in the stomach which aids in the absorption of this vitamin, overcoming deficiency. Vitamin B-12 injections are necessary for those who are vitamin B-15 deficient, though some older people who have less stomach acid and more digestive bacteria may need to take as much as 100 mg/day. Some tablets sold contain the B-12 intrinsic factor, a mucoprotein secreted in the stomach which aids in the absorption of this vitamin, overcoming deficiency. Vitamin B-12 injections are necessary for those who are vitamin B-15 deficient, though some older people who have less stomach acid and more digestive bacteria may need to take as much as 100 mg/day.

**VITAMIN B-6**

Vitamin B-6, also known as pyridoxine or pyridoxal, is needed to maintain normal brain function and support the immune system. It is a coenzyme in the metabolism of amino acids, the production of hemoglobin and red blood cells, and the synthesis of neurotransmitters. It is essential for protein, fat, and carbohydrate metabolism.

Dosage: It is generally recommended that initial doses should be 100 mg/day, gradually increasing to 100 to 200 mg/day. Sheldon Saul Hendler, M.D., does not recommend supplementation under any circumstances. If you are taking vitamin B-6 supplements, the recommended dosage should not exceed 10 mg/day. Sulfur-containing medications as Apresazide, Apresoline, Rezide, Ser-Ap-Es, Serpasil-Apresoline, and Unipres), carbidopa-levodopa combination does not have this problem), phenobarbital, and phenytoin. Phenylbutazone, prednisone, pyrazinamide, quinidine, Salbutamol, Soma, Sulfur-containing medications as Apresazide, Apresoline, Rezide, Ser-Ap-Es, Serpasil-Apresoline, and Unipres), carbidopa-levodopa combination does not have this problem), phenobarbital, and phenytoin. Phenylbutazone, prednisone, pyrazinamide, quinidine, Salbutamol, Soma, Tagamet, and Zantac), sunlight, tobacco, vitamin C (if taken within two hours of each other), and dilantin can deplete the body's stores of B-12, and an underactive thyroid gland can interfere with the body's ability to absorb vitamin B-12. Life-threatening symptoms, usually resulting from overdose, consist of faintness (from anaphylaxis), hives, itching, and rash.

Precautions: It should not be taken by those with Leber's disease (optic nerve atrophy). Those with pernicious anemia, and symptoms include poor appetite, a tingling in the hands and feet, depression, confusion, a constant weakness, and visual disturbances. Because the body can recycle the vitamin, deficiency is rare, and years of chronic inadequate intake are required to develop a deficiency. Sensory neuropathy (numbness and tingling in the hands and feet), which is a common problem, are often reported in individuals who take too much B-6. A deficiency of vitamin B-6 is rare. Precautions and side effects include depression, irritability, learning disabilities, mental confusion, nausea, and malfunctioning of the immune system. High doses of B-6 can lead to increased toxicity and sensory neuropathy, which go away once the dosage is reduced, though some permanent nerve damage (such as loss of sense of touch) may remain. High doses of B-6 can lead to increased toxicity and sensory neuropathy, which go away once the dosage is reduced, though some permanent nerve damage (such as loss of sense of touch) may remain.
VITAMIN C

A deficiency in vitamin C is called scurvy and, though rare, may be the end result of long-term deprivation (though this condition is not serious) and lowered resistance to high altitude conditions. Dosages of 200 mg/day are recommended for people living at high altitudes who are not consuming adequate amounts of vitamin C through food sources. The symptoms include bleeding gums, hemorrhaging, loose teeth, emotional disturbances, and poor healing of wounds. Some contend that the U.S. RDA of 60 mg/day prevents these obvious symptoms of vitamin C deficiency. Most people in an average diet would meet this requirement, though people who smoke cigarettes, have alcoholism, serious kidney disease or kidney failure, leukemia, polycythemia (an increase in the number of red blood cells), and some form of diabetes (which may be very widespread in the U.S. population) can all contribute to the loss or reduced effectiveness of this vitamin. Vegetables should be washed, soaked, and dried prior to use. Cold water is preferred to hot water as it preserves the vitamin C content. There are two new forms of vitamin C. One, Ester C, has a higher level of bioavailability — patients can take as much as 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body. The other form is a complex of vitamin C with calcium in a slow-release (tabletted) form, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form. Food Sources: Bean sprouts, berries, cauliflower, citrus fruits, liver, potatoes, sweet potatoes, tomatoes, and watermelon. Effects: Works as an antioxidant (unlike antioxidants vitamin E, beta-carotene, and CoEnzyme Q10, which reduce oxidation damage, vitamin C works preemptively, intercepting the oxidants that initiate cell damage). Also, it promotes cell growth, protects against cancer, reduces the need for iron supplements, and enhances the immune system. There is a myth that vitamin C can cure the common cold, but no clinical trials have shown any benefit. It can cause a temporary rise in blood pressure in those with high blood pressure, and it can interact with tetracycline. More than eight aspirin a day for more than a week can cause the body to excrete more vitamin C. Chewable vitamin C can lead to severe dental erosion. Extra care should be taken when using the oral forms of this vitamin. Interactions: Vitamin C can interfere with the absorption from iron supplements, increase the side effects from estrogens (if vitamin C taken is in excess), and can cause problems in people with sickle cell anemia, G-6PD deficiency, kidney stones, or gout. There is a belief that it is possible to overdose on vitamin C; however, it is not known what level constitutes an overdose. To this end, the American Medical Association recommends that this be increased to 200 mg/day. Some recommend 1000 to 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form.

CHROMIUM AND CHROMIUM PICOLINATE

Chromium picolinate is a scientifically developed form which provides energy throughout the day. Chromium picolinate is non-toxic, though in some species of laboratory animal (though this condition is not serious) and lowered resistance to high altitude conditions. Dosages of 200 mg/day are recommended for people living at high altitudes who are not consuming adequate amounts of vitamin C through food sources. The symptoms include bleeding gums, hemorrhaging, loose teeth, emotional disturbances, and poor healing of wounds. Some contend that the U.S. RDA of 60 mg/day prevents these obvious symptoms of vitamin C deficiency. Most people in an average diet would meet this requirement, though people who smoke cigarettes, have alcoholism, serious kidney disease or kidney failure, leukemia, polycythemia (an increase in the number of red blood cells), and some form of diabetes (which may be very widespread in the U.S. population) can all contribute to the loss or reduced effectiveness of this vitamin. Vegetables should be washed, soaked, and dried prior to use. Cold water is preferred to hot water as it preserves the vitamin C content. There are two new forms of vitamin C. One, Ester C, has a higher level of bioavailability — patients can take as much as 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body. The other form is a complex of vitamin C with calcium in a slow-release (tabletted) form, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form. Food Sources: Bean sprouts, berries, cauliflower, citrus fruits, liver, potatoes, sweet potatoes, tomatoes, and watermelon. Effects: Works as an antioxidant (unlike antioxidants vitamin E, beta-carotene, and CoEnzyme Q10, which reduce oxidation damage, vitamin C works preemptively, intercepting the oxidants that initiate cell damage). Also, it promotes cell growth, protects against cancer, reduces the need for iron supplements, and enhances the immune system. There is a myth that vitamin C can cure the common cold, but no clinical trials have shown any benefit. It can cause a temporary rise in blood pressure in those with high blood pressure, and it can interact with tetracycline. More than eight aspirin a day for more than a week can cause the body to excrete more vitamin C. Chewable vitamin C can lead to severe dental erosion. Extra care should be taken when using the oral forms of this vitamin. Interactions: Vitamin C can interfere with the absorption from iron supplements, increase the side effects from estrogens (if vitamin C taken is in excess), and can cause problems in people with sickle cell anemia, G-6PD deficiency, kidney stones, or gout. There is a belief that it is possible to overdose on vitamin C; however, it is not known what level constitutes an overdose. To this end, the American Medical Association recommends that this be increased to 200 mg/day. Some recommend 1000 to 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form.

EMMAK

AKA (D-mannitol, D-Mannitol, Mannitol, d-mannitol, S-Mannitol): Mannitol provides energy throughout the day. Chromium picolinate is a scientifically developed form which provides energy throughout the day. Chromium picolinate is non-toxic, though in some species of laboratory animal (though this condition is not serious) and lowered resistance to high altitude conditions. Dosages of 200 mg/day are recommended for people living at high altitudes who are not consuming adequate amounts of vitamin C through food sources. The symptoms include bleeding gums, hemorrhaging, loose teeth, emotional disturbances, and poor healing of wounds. Some contend that the U.S. RDA of 60 mg/day prevents these obvious symptoms of vitamin C deficiency. Most people in an average diet would meet this requirement, though people who smoke cigarettes, have alcoholism, serious kidney disease or kidney failure, leukemia, polycythemia (an increase in the number of red blood cells), and some form of diabetes (which may be very widespread in the U.S. population) can all contribute to the loss or reduced effectiveness of this vitamin. Vegetables should be washed, soaked, and dried prior to use. Cold water is preferred to hot water as it preserves the vitamin C content. There are two new forms of vitamin C. One, Ester C, has a higher level of bioavailability — patients can take as much as 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body. The other form is a complex of vitamin C with calcium in a slow-release (tabletted) form, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form. Food Sources: Bean sprouts, berries, cauliflower, citrus fruits, liver, potatoes, sweet potatoes, tomatoes, and watermelon. Effects: Works as an antioxidant (unlike antioxidants vitamin E, beta-carotene, and CoEnzyme Q10, which reduce oxidation damage, vitamin C works preemptively, intercepting the oxidants that initiate cell damage). Also, it promotes cell growth, protects against cancer, reduces the need for iron supplements, and enhances the immune system. There is a myth that vitamin C can cure the common cold, but no clinical trials have shown any benefit. It can cause a temporary rise in blood pressure in those with high blood pressure, and it can interact with tetracycline. More than eight aspirin a day for more than a week can cause the body to excrete more vitamin C. Chewable vitamin C can lead to severe dental erosion. Extra care should be taken when using the oral forms of this vitamin. Interactions: Vitamin C can interfere with the absorption from iron supplements, increase the side effects from estrogens (if vitamin C taken is in excess), and can cause problems in people with sickle cell anemia, G-6PD deficiency, kidney stones, or gout. There is a belief that it is possible to overdose on vitamin C; however, it is not known what level constitutes an overdose. To this end, the American Medical Association recommends that this be increased to 200 mg/day. Some recommend 1000 to 10,000 mg/day without serious consequences; it encourages the production of other enzymes and chemicals in the body, and is recommended for people who suffer from kidney stones. It is not recommended to exceed 500 mg/day of this complex form.

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VITAMIN E

AKA: Aquasol E, Chew-E, d-alpha-tocopherol, d-alpha-tocopheryl acid succinate, dl-alpha-
tocopherol succinate, d-alpha-tocopheryl succinate, Oenothera, vitamin E, vitamin E

Vitamin E is a yellow oil-like substance with a mild, sweet odor.  It is used as a
preservative for food and cosmetics, and for the treatment of various skin condi-
tions.  It is also used as a nutritional supplement to prevent heart disease, stroke
and other ailments.  The body absorbs vitamin E by the intestinal wall and circu-
lates it in the bloodstream.  It is stored in the liver and released into the blood-
circulation when needed.  Excretion occurs slowly in the bile into the intestines.
Vitamin E is fat-soluble, meaning that the body stores it in the fat tissues for
longer periods of time and has a half-life of 60 to 70 days.  It is found in nearly all
animal and plant products, especially in plant oils, nuts, grains, whole grains,
and sardines.  Small amounts are found in broccoli, brussel sprouts, cabbage
and other dark leafy vegetables, molasses, and sweet potatoes.  Vitamin E
is destroyed by cooking, especially cooking with copper pots.

Vitamin E is the most important of all the antioxidant vitamins.  It is much
stronger than the other antioxidant vitamins and compared to vitamin C, it is
50 times more powerful.  It is known to protect against stroke, stress-related ulcers,
diabetic retinopathy, and some forms of cancer.  It may also protect against such
ailments as arthritis and allergic reactions.  Studies have also shown that it can
protect against the hydroxyl free radical, which can directly destroy cells.  It is
one of the polyphenol extracts known as oligomeric proanthocyanidins (OPCs),
which also include green tea, pomegranate, and grape seed.  OPCs are thought
to be the most potent of all the antioxidants available.  These antioxidants
work together synergistically, forming an incredibly powerful antioxidant.

Vitamin E is a combination of eight different compounds called tocopherols.
Alpha-tocopherol is the most powerful in the series and is found in nature
which makes it a natural vitamin whereas d-alpha-tocopherol would be syn-
thetic.  Synthetics are only 50 to 70 percent as effective as the natural forms,
such as is not the case with E.  Vitamin E products are a mixture of both
“d” and “1” forms, therefore d-alpha-tocopherol would be a natural
product whereas d-alpha-tocopherol would be a synthetic.  Synthetics
are just as effective as the natural forms, such as is not the case with E.

The vitamin E that occurs naturally is called “natural E,” whereas
synthetic vitamin E is called “synthetic E” or “vitamin E.”

Vitamin E is not absorbed by the body as a whole but must be absorbed as
individual forms of tocopherols, such as alpha, beta, gamma, and
delta tocopherol.  Eight different forms of vitamin E molecules, or vitamers,
are found in nature (alpha, beta, gamma, and delta tocopherol).  These different
forms of vitamin E have different biological properties.

Precautions: No adverse side effects have been found in doses as high as 35,000 mg/day
over a six month period.  Precautions: It should not be taken by those who are allergic to
any of the B vitamins, and those with iron-deficiency anemia, and deplete the body of vitamin A if
vitamin E is taken in excessive amounts (and yet, in recommended doses, E can increase the benefits and
decrease the side effects of vitamin A).  Vitamin E supplementation should be stopped
if the person is on anticoagulants (e.g., warfarin sodium), anticonvulsants, antituberculosis
drugs, aspirin, cyclosporine (a medication used to prevent organ rejection after
transplant surgery), or anticancer drugs (e.g., methotrexate), and the dose should be
reduced by half if the person is on antihypertensive medications.

FOLIC ACID

Vitamin B9, also called folate, folic acid, or pteroylglutamic acid.  It is a water-soluble
vitamin that is necessary for normal growth and development especially of the brain.
It can also prevent congenital defects and neural tube defects.  It can also
maintain the health of the brain, nerves, and blood cells.  It is present in many
plant products, though it is especially concentrated in fruits and vegetables.  It
may restore hair to its original color when 5 mg of folic acid are combined with
300 mg each of vitamin B-12 and methionine, it can manufacture choline in
the body.  According to John Mann, vitamin B9 is extremely important in the
prevention of cerebral hemorrhage.  Folic acid is a catalyst in the formation of
DNA and RNA.  It is also necessary in the development of breast tissue and
breast tumors, and breast enlargement (in men as well as women) are unsupported by
hard evidence.  Vitamin B9 can also prevent liver damage and liver cancer caused by
DHEA.

Deficiency symptoms include bleeding gums, forgetfulness, graying hair, irritability,
sore tongue and body aches and pains.  It is important to note that the body
requires folic acid and vitamin B12 to make healthy DNA and RNA.

Dosages above 600 lU/day should not be taken by those with high blood triglyceride levels
or a high cholesterol level.  It may also result in a decrease in the benefits of
anticoagulants (e.g., warfarin sodium), anticonvulsants, antituberculosis drugs,
aspirin, cyclosporine (a medication used to prevent organ rejection after
transplant surgery), or anticancer drugs (e.g., methotrexate), and the dose should
be reduced by half if the person is on antihypertensive medications.

Folate acts as a folate coenzyme in the cell, and helps maintain brain’s protein metabolism.
Preliminary studies have shown that folic acid may prevent or delay the onset of
Alzheimer’s disease.  Combined supplementation of B-12 and folic acid may prevent or delay
the onset of Alzheimer’s.  According to John Mann, folic acid can strengthen the immune
system by inhibiting the growth of fungal infections.

Vitamin B9 can prevent neural tube defects and increase the size of cell membranes.
It is also present in coffee, tea, beer, and wine.  It is destroyed by heat, especially
by cooking with copper pots.

Vitamin B9 can prevent neural tube defects and increase the size of cell membranes.
It is also present in coffee, tea, beer, and wine.  It is destroyed by heat, especially
by cooking with copper pots.

ERRONEOUS RESEARCH ON AGING

Some research has suggested that antioxidants reduce the risk of cancer and heart
disease, but that research is incorrect.  Vitamin E, for example, can increase the risk
of prostate cancer, and there is no evidence that it prevents cardiovascular disease.
In some cases, the antioxidant is just as dangerous as the disease it is supposed to
prevent.  For example, we are recommended to eat fish, but fish can increase the risk
of prostate cancer.

FTS EFP: 800 lU/day

Precautions: Cases of allergies to this vitamin are extremely rare.  Overdose symptoms
consist of fatigue, nausea, and vomiting.  Lab animals given
25 mg/kg of folic acid by gavage daily for 7 days showed signs of severe
anemia, body weight loss, and rickets.  It is recommended that
those who are elderly or who have digestive problems take
one 800 lU tablet of FOLAC 1 six times a day.  It is recommended that
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one 800 lU tablet of FOLAC 1 six times a day.
Selenium is a microelement that is known to be essential for health. It is involved in the manufacture of DNA and RNA coding in cells, and contributes to the formation and maintenance of cell membranes. It is also important for the growth of cell membranes, nerves, muscles, and the heart. It protects against anxiety, calcium buildup in the heart muscle, and the toxic effects of the heart drug digoxin.

**Precautions:** Overdose through diet is extremely unlikely, though miners in northern Chile exposed to high selenium levels developed a condition called keratoconjunctivitis sicca, a dry-eye syndrome. Selenium toxicity is also possible with large doses of supplements. However, the K.I.S.S. principle (Keep It Simple, Stupid) still applies! Choose a good source like Brazil nuts, and you won’t have to worry.

**Selenium Food Sources:**
- Brazil nuts
- Broccoli
- Brown rice
- Cabbage
- Celery
- Cucumbers
- Dairy products
- Eggs
- Fresh fish
- Leafy green vegetables
- Maitake mushrooms
- Mushrooms
- Pecans
- Pine nuts
- Rye
- Spinach
- Sunflower seeds
- Walnuts
- Whole-grain breads
- Whole-wheat pasta
- Yeast

**DEFICIENCY SYMPTOMS:**
- A deficiency, which is virtually unheard of, can cause confusion, convulsions, eye and ear problems, impaired growth, tissue degeneration, weakness, and death. In areas deficient in selenium, the incidence of Keshan disease (a heart disease) and cataracts (blindness) is high.

**TOXICITY:**
- Toxicity is rare, but comes from an intake of 200 to 600 micrograms per day. Symptoms include nausea, vomiting, diarrhea, fatigue, loss of appetite, muscle weakness, and increased blood pressure.

**Selenium: Incredibly, you can have too much of a good thing.**

**Selenium: Which selenium is best?**
- The 12 best sources of selenium are Brazil nuts, broccoli, brown rice, cabbage, celery, cucumbers, dairy products, eggs, fresh fish, leafy green vegetables, whole-grain breads, and whole-wheat pasta.

**SELENIUM:**
- The absorption of selenium may be decreased by high dietary levels of magnesium, calcium, iron, and vitamin D in milk, coffee, tea, alcohol, heart medications such as digitalis and digoxin, antibiotics, and diuretics.

**Magnesium (Mg):**
- Magnesium is a little-understood mineral, and much more research needs to be done to determine its role in human metabolism.

**Magnesium Deficiency:**
- A deficiency, which is virtually unheard of, can cause confusion, convulsions, eye and ear problems, impaired growth, tissue degeneration, weakness, and death. In areas deficient in selenium, the incidence of Keshan disease (a heart disease) and cataracts (blindness) is high.

**Magnesium Toxicity:**
- Toxicity is rare, but comes from an intake of 200 to 600 micrograms per day. Symptoms include nausea, vomiting, diarrhea, fatigue, loss of appetite, muscle weakness, and increased blood pressure.

**Magnesium Food Sources:**
- Almonds
- Apples
- Apricots
- Avocados
- Bananas
- Blackstrap molasses
- Brazil nuts
- Brown rice
- Cabbage
- Celery
- Cucumbers
- Dairy products
- Eggs
- Fresh fish
- Leafy green vegetables
- Maitake mushrooms
- Mushrooms
- Pecans
- Pine nuts
- Rye
- Spinach
- Sunflower seeds
- Walnuts
- Whole-grain breads
- Whole-wheat pasta
- Yeast

**Precautions:**
- Those with severely impaired kidney function or some types of heart rhythm abnormalities should consult a physician before taking supplements.

**Magnesium Deficiency Symptoms:**
- A deficiency, which is virtually unheard of, can cause confusion, convulsions, eye and ear problems, impaired growth, tissue degeneration, weakness, and death. In areas deficient in selenium, the incidence of Keshan disease (a heart disease) and cataracts (blindness) is high.

**Natural Sources:**
- Food Sources: Aloe, barley, chlorella, comfrey, garlic, ginseng, onions, shiitake mushrooms, suma.

**AKA:**
- Manganese gluconate, manganese sulfate.

**FUNCTIONS:**
- A role in the manufacture of DNA and RNA coding in cells; and contributes to the formation and maintenance of cell membranes. It is also important for the growth of cell membranes, nerves, muscles, and the heart. It protects against anxiety, calcium buildup in the heart muscle, and the toxic effects of the heart drug digoxin.

**Precautions:**
- Those who have used bromocriptine or pergolide will not be able to use levodopa, due to the risk of hallucinations.

**Manganese Deficiency:**
- A deficiency, which is virtually unheard of, can cause confusion, convulsions, eye and ear problems, impaired growth, tissue degeneration, weakness, and death. In areas deficient in selenium, the incidence of Keshan disease (a heart disease) and cataracts (blindness) is high.

**Manganese Toxicity:**
- Toxicity is rare, but comes from an intake of 200 to 600 micrograms per day. Symptoms include nausea, vomiting, diarrhea, fatigue, loss of appetite, muscle weakness, and increased blood pressure.

**Manganese Food Sources:**
- Almonds
- Apples
- Apricots
- Avocados
- Bananas
- Blackstrap molasses
- Brazil nuts
- Brown rice
- Cabbage
- Celery
- Cucumbers
- Dairy products
- Eggs
- Fresh fish
- Leafy green vegetables
- Maitake mushrooms
- Mushrooms
- Pecans
- Pine nuts
- Rye
- Spinach
- Sunflower seeds
- Walnuts
- Whole-grain breads
- Whole-wheat pasta
- Yeast

**Precautions:**
- Those with a deficiency of vitamin D may benefit from magnesium supplementation, as magnesium has a role in vitamin D activation.
**Zinc**

Zinc is a mineral that is found in many foods and is necessary for many bodily functions. It is essential for growth and development of the reproductive organs, helps the body get rid of carbon dioxide, helps one form insulin, and is needed to metabolize proteins, carbohydrates, and fats. To maintain a healthy level of zinc, one needs to get at least 8 to 15 mg of zinc per day. Some foods that contain zinc include red meat, shellfish, nuts, seeds, fortified breakfast cereals, and baked goods. Too much zinc can cause symptoms such as diarrhea, nausea, and fatigue. Too little zinc can cause problems such as poor growth and development of the reproductive organs, weakened immune system, and decreased bone density.

**Dosage:** The normal dosage of zinc for adults is 15 mg per day. The maximum dosage is 150 mg per day. Taking more than 150 mg per day can cause severe anemia due to iron deficiency.

**Interactions:** People with liver problems should avoid taking zinc supplements. There are no interactions with any other vitamins or medications.

**Precautions:** Zinc supplements can irritate the stomach lining and perforate ulcers. Those involved in smelting should avoid taking zinc supplements. There are no precautions with other vitamins or medications.

**Side Effects:** The side effects of zinc supplements include diarrhea, nausea, and fatigue.

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**Selenium**

Selenium is a mineral that is found in many foods and is necessary for many bodily functions. It is essential for the immune system, detoxifies heavy metals, and inhibits the growth of cancer cells. To maintain a healthy level of selenium, one needs to get at least 55 micrograms per day. Some foods that contain selenium include garlic, onions, nuts, sardines, and organ meats.

**Dosage:** The normal dosage of selenium for adults is 55 micrograms per day. The maximum dosage is 400 micrograms per day. Taking more than 400 micrograms per day can cause symptoms such as nausea, vomiting, and diarrhea. Taking selenium with antacids can increase the risk of selenium toxicity.

**Interactions:** Selenium can interact with certain medications such as lithium, captopril, and angiotensin-converting enzyme (ACE) inhibitors. People with liver disease should avoid taking selenium supplements. There are no interactions with any other vitamins or medications.

**Precautions:** Selenium supplements can cause symptoms such as nausea, vomiting, and diarrhea. Those with liver disease should avoid taking selenium supplements. There are no precautions with other vitamins or medications.

**Side Effects:** The side effects of selenium supplements include nausea, vomiting, and diarrhea.

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**Xanthinol Nicotinate**

Xanthinol nicotinate is a form of niacin that passes through cell membranes more readily than niacin. It is used to treat Parkinson’s disease and to prevent motion sickness.

**Dosage:** No RDA has been established, but since sulfur is an important component of many amino acids, people with sulfur deficiencies should get 300 to 600 mg per day. The maximum dosage is 2000 mg per day. Taking more than 2000 mg per day can cause symptoms such as nausea, vomiting, and diarrhea.

**Interactions:** Xanthinol nicotinate can interact with certain medications such as anticoagulants, beta blockers, and diuretics. People with liver disease should avoid taking xanthinol nicotinate. There are no interactions with any other vitamins or medications.

**Precautions:** Xanthinol nicotinate can cause symptoms such as nausea, vomiting, and diarrhea. Those with liver disease should avoid taking xanthinol nicotinate. There are no precautions with other vitamins or medications.

**Side Effects:** The side effects of xanthinol nicotinate include nausea, vomiting, and diarrhea.
Amino Acids

CHAPTER 4

Amino Acids

Acetyl-L-Carnitine

Amino Acids

N-Acetyl-L-cysteine, NAC, N-acetyl-cysteine, N-acetyl-L-
cysteine.

Carnosine is a composite of two amino acids that work synergistically with other antioxidants such as vitamin C, E, B-complex, beta-carotene, selenium, and the sulfur-containing amino acids cysteine.

It is found only in animal foods such as eggs, fish (all kinds), meat (all kinds), and milk.

Carnosine is a potent antioxidant that helps to eliminate free radicals, prevent the formation of kidney and bladder stones.

Carnosine is a strong antioxidant believed to purify the body, removing heavy metals and pollution by detoxifying acetaldehyde. It plays a role in the formation of the skin, helps prevent skin disorders. Too large a dose can result in diarrhea, nausea, a thickening or coarsening of the skin, and bone deformities.

Precautions: Arginine should not be used in place of arginine. Dosages over 20 to 30 grams a day could lead to enlarged joints and bone deformities.

Precautions: Anyone with diabetes or blood sugar problems should not take supplements in doses over 10 grams a day. Arginine is a strong blood sugar depressant and in treating mild depression. It has also shown promise in treating anxiety, obsessive-compulsive disorder, schizophrenia, and Alzheimer's disease. Despite the therapeutic value found in some "D" forms, the FDA bans sale of the latter, so you may not find it among supplements.

Essential amino acids — L-histidine, L-isoleucine, L-leucine, L-lysine, L-methionine, L-phenylalanine, L-threonine, L-tryptophan, and L-valine — and all are provided by proteins in the diet. The other fifteen not needed in the diet are alanine, arginine, aspartic acid, asparagine, cysteine, glutamic acid, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine.

Amino Acids should be taken with cofactors — such as vitamins, minerals, or nutrients — that assist the body in metabolizing them; it is also a good idea to take a variety of amino acids together and in their proper proportions to one another.

Freeform amino acids are ones that have been taken from complex proteins, and you must be sure to choose supplements that are in the "L" form.

Reduced levels have been found in people with senility and memory loss. Though it does seem to help fight cancer by boosting the immune system (more specifically, by stimulating the production of T-cells), protect the liver by detoxifying harmful substances, and increase the sperm count in men.

Those with allergies, for example, use an excess of histamine in their bodies, which is manufactured as certain deficiencies or excesses of some neurotransmitters can cause mood disorders. Though amino acids play an essential role in brain function, there are some experts, such as Dr. Andrew Weil (author of Natural Health, Natural Medicine) and Dr. Stuart Berger, who do not believe they should be taken as supplements, as they can severely disrupt the brain chemistry. Some reference texts, such as Dr. Paul Bragg's, recommend no more than 1.5 g/day. It should also be taken on an empty stomach and with meals high in L-tryptophan, or milk.

Precautions: Cysteine should be used with caution by those susceptible to kidney, liver, or bladder stones. It may also help tissue healing after surgery protect the liver against damage from exposure to harmful metals in the brain and body and removing them. Subjects in the early stages of eczema. It may also help tissue healing after surgery protect the liver against damage from exposure to harmful metals in the brain and body and removing them. Subjects in the early stages of eczema.

Effect: It is converted by the body into serotonin after it has been converted from the amino acid tryptophan and in treating mild depression. It has also shown promise in treating anxiety, obsessive-compulsive disorder, schizophrenia, and Alzheimer's disease.

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Effects: It is converted by the body into serotonin after it has been converted from the amino acid tryptophan.

These three amino acid precautions should be kept in mind, although there is no consensus in the current scientific community. One may be more or less sensitive to the amino acid, and one may be more or less likely to react to it.

Precautions: It should not be taken by anyone with ulcers or other gastrointestinal diseases, Crohn's disease, diabetes, or high blood pressure. It may cause ringing in the ears, dizziness, or nausea. It can further increase blood sugar levels and lower blood pressure. It can have a sedative effect.

Effects: Arginine helps prevent protein from being used for energy in the muscle. It also increases the body's ability to use carbohydrates as energy. It can also increase nitrogen excretion in the urine and decrease the amount in the blood.

Effects: It can increase blood pressure and is usually associated with an allergic reaction to shellfish.

It prevents the formation of kidney and bladder stones. It may also be used in treating diabetes mellitus.

Reduced levels have been found in people with senility and memory loss. Though it does seem to help fight cancer by boosting the immune system (more specifically, by stimulating the production of T-cells), protect the liver by detoxifying harmful substances, and increase the sperm count in men.

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Reduced levels have been found in people with senility and memory loss. Though it does seem to help fight cancer by boosting the immune system (more specifically, by stimulating the production of T-cells), protect the liver by detoxifying harmful substances, and increase the sperm count in men.

The body cannot synthesize arginine, and it must be obtained from the diet. Arginine is a weak blood sugar depressant and in treating mild depression. It has also shown promise in treating anxiety, obsessive-compulsive disorder, schizophrenia, and Alzheimer's disease.

A synthetic amino acid.

Cystine should be used with caution by those susceptible to kidney, liver, or bladder stones. It may also help tissue healing after surgery protect the liver against damage from exposure to harmful metals in the brain and body and removing them. Subjects in the early stages of eczema.

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Effects: It is an essential amino acid that is often found in foods high in carbohydrates. To relax or fall asleep, it is necessary to eat the foods high in L-tryptophan, or milk. If not taken from food, it is synthesized by the liver from tryptophan and in treating mild depression. It has also shown promise in treating anxiety, obsessive-compulsive disorder, schizophrenia, and Alzheimer's disease.

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**GLUTAMINE**

**Effects:** Phenylalanine may contribute to a more positive mental state, alertness, more motivation and ambition, more energy, an increase in learning ability, better memory, and an increased ability to focus and pay attention. (Leon Chaitow, N.D., D.O., claims only the “D” form produces these effects.)

**Food sources:** Dairy products, seeds, watercress. Plants contain mostly the “D” form, while animal proteins contain mostly the “L” form.

**Dosage:** 100 to 250 mg/day. Leon Chaitow, N.D., D.O., recommends 200 to 1000 mg/day with meals.

**Deficiency symptoms:** Bad skin tone, loss of hair, a buildup of toxic wastes in the body and fat or muscle breakdown. Methionine is useful in the treatment of arthritis, cataracts, high cholesterol, chronic pain, asthma, allergies, and some cases of Parkinson's disease. It may help protect the liver against damage from carbon tetrachloride, the chemical used in the manufacture of some plastics and cleaning solutions. It may also relieve some cases of schizophrenia by lowering the level of histamine in the blood, and has been used to treat schizophrenia and senility, and research has shown that it can offset the adverse effects of heavy metals (e.g., cadmium, mercury) in the brain and body, play a key part in the production of antibodies, and help the body fight off infections. Methionine may also be necessary for the development of white blood cells in infants — and in adults of all ages, who may lack the ability to make glutathione, a metabolically waste.

**Phytochemicals:**

- **Methionine**

  - **Effects:** It has been found to enhance learning.

  - **Dosage:** 1 to 3 g/day. The daily recommended dietary allowance is 500 mg for men and 250 mg for women. However, some experts recommend higher doses. Methionine can be toxic if taken in large amounts. It may cause headaches and nausea.

  - **Precautions:** Methionine should never be taken as an oral supplement by anyone suffering from a liver, kidney, or heart condition, or those with a history of allergies. It may also cause allergic reactions in some people.

**METHIONINE**

**Effects:** Methionin is an antioxidant that is also said to protect against the accumulation of chemicals that cause cancer. It is also involved in the production of an amino sugar, glucosamine, which is important for joint health. Glucosamine is also found in some supplements, such as glucosamine sulfate and glucosamine hydrochloride.

**Food sources:** Methionine is found in most animal products, including eggs, milk, cheese, beef, chicken, fish, and other seafood. It is also found in some plants, such as broccoli, spinach, and peanuts.

**Dosage:** Some suggest 250 to 500 mg/day, though Leon Chaitow recommends 1 to 3 g/day. The daily recommended dietary allowance is 500 mg for men and 250 mg for women.

**Deficiency symptoms:** A deficiency can result in moodiness, bad skin, fatigue, and a weakened immune system.

**Precautions:** Methionine should be taken in divided doses throughout the day to prevent its breakdown. It should not be taken with medications that may interact with it, such as antacids, antibiotics, or blood thinners. It may also cause allergic reactions in some people.

**PHEYLALANINE**

- **Phenylalanine**

  - **Effects:** It has been used to treat schizophrenia and senility, and research has shown that it can offset the adverse effects of heavy metals (e.g., cadmium, mercury) in the brain and body, play a key part in the production of antibodies, and help the body fight off infections. Phenylalanine is also found in animal products, such as meat, dairy, and eggs.

  - **Dosage:** 100 to 250 mg/day. Leon Chaitow, N.D., D.O., recommends 200 to 1000 mg/day with meals.

  - **Deficiency symptoms:** Bad skin tone, loss of hair, a buildup of toxic wastes in the body and fat or muscle breakdown.

  - **Precautions:** Phenylalanine should never be taken as an oral supplement by anyone suffering from a liver, kidney, or heart condition, or those with a history of allergies. It may also cause allergic reactions in some people.

**PYROGLUTAMATE**

**Effects:** Pyroglutamate improves memory, alertness, concentration, and learning, and reduces anxiety.

**Food sources:** Dairy products, fruits, meats, vegetables.

**PyroGlu, pyroglutamic acid, pyrrolidon carboxylic acid, 2-oxo-pyrrolidon pyroglutamate, Deep Thought, glutamic acid lactam, glutimic acid, glutiminic acid, Mental Edge**

**Dosage:** 375 to 500 mg of the “L” form or 750 to 1000 mg of DLPA, first thing in the morning and at least 30 minutes before breakfast. Mayell advocates a more modest dose of 100 mg of B-6, 500 mg of vitamin C, and some fruit or fruit juice to help convert the amino acid to the D form.

**Precautions:** Phenytoin should be taken with 100 mg of B-6 —to prevent an excess of homocysteine — and after using L-phenylalanine. Methionine should always be taken with B-6 —to prevent an excess of homocysteine — and after using phenylalanine. Methionine should never be used by manic-depressives with elevated levels of histamine or histidine. Histidine should not be used by manic-depressives with elevated levels of histamine or histidine. Selenomethionine is a variant in which selenium atoms replace the sulfur atoms.

Some warn that the daily dosage should not exceed 2.4 grams a day. Too much phenylalanine can result in overstimulation, nervousness, heart palpitations, high blood pressure, and irritability; if taken together with 5-HTP, it may cause grandiose delusions, insomnia, and a voracious sex drive. Those with sensitivity to the food additive may experience a severe allergic reaction. For example, a man taking four grams a day of L-glutamine for three weeks became psychotic, with hallucinations, grandiose delusions, insomnia, and a voracious sex drive. Those with sensitivity to the food additive may experience a severe allergic reaction.

**PYRUVATE**

**Effects:** It has been found to enhance learning.

**Dosage:** Some suggest 250 to 500 mg/day, though Leon Chaitow recommends 1 to 3 g/day. The daily recommended dietary allowance is 500 mg for men and 250 mg for women.

**Deficiency symptoms:** A deficiency can result in moodiness, bad skin, fatigue, and a weakened immune system.

**Precautions:** Methionine should never be taken as an oral supplement by anyone suffering from a liver, kidney, or heart condition, or those with a history of allergies. It may also cause allergic reactions in some people.

**PYROGLUTAMATE**

**Effects:** Pyroglutamate improves memory, alertness, concentration, and learning, and reduces anxiety.

**Food sources:** Dairy products, fruits, meats, vegetables.

**PyroGlu, pyroglutamic acid, pyrrolidon carboxylic acid, 2-oxo-pyrrolidon pyroglutamate, Deep Thought, glutamic acid lactam, glutimic acid, glutiminic acid, Mental Edge**

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VALINE

B complex and 250 to 500 mg of vitamin C.

Dosage: The RDA has not been established. Three to four ounces of fish seems to be the optimal amount for most people; eating more will not result in any significant increase in effect. Leon Chaitow recommends that dosage not exceed 2 to 3 g/day (initial dosage should be 250 to 500 mg/day, working up to 750 mg twice a day until effects are noticed), that it be taken on an empty stomach. Mayell recommends that dosage not exceed 2 to 3 g/day (initial dosage should be 250 to 500 mg/day, working up to 750 mg twice a day until effects are noticed), that it be taken on an empty stomach.

Effects: Boosts the brain neurotransmitters epinephrine (adrenaline), norepinephrine (noradrenaline), dopamine, though the mental stimulation only occurs if the brain has used up these neurotransmitters. This is a natural reaction to mental fatigue, but not due to the molecule itself. Taurine has been used in the treatment of congestive heart failure, atherosclerosis, stress, eye problems, and depression. Arginine pyroglutamate also increases muscle mass by stimulating the growth hormones.

Precautions: None known.

TRYPTOPHAN

AKA: L-tryptophan.

Food sources: Banana, milk, eggs, oranges, carrots, cabbage, pumpkin, sunflower seeds, fish, lentils, meat, milk, peanuts, pineapple, pumpkin seeds, seaweed, soybeans and soybean products, blackstrap molasses.

Dosage: 100 to 500 mg/day. Sheldon Saul Hendler, M.D., Ph.D., advises against supplementation. Clinical trials are limited and there have been reports of serious complications from its use.

Effects: An electrical-charge stabilizer in the nerves of the brain and nervous system (it can decrease pain and irritability), it acts as a depressant. It may be necessary for proper growth of the human body. Women should avoid excessive intake of tryptophan during pregnancy (it can cause excitability and insomnia, those who experience such symptoms should cease taking it). Tyrosine should not be taken by anyone with high blood pressure should take it only under the guidance of a physician. Those taking MAO-inhibitor drugs or tricyclics for depression should avoid any dietary intake of tryptophan because it can cause serious and dangerous symptoms.

Precautions: It forms a harmful interaction when combined with MAO-inhibitor drugs or tricyclics, it causes dilatation of the blood vessels and may be contraindicated in those with high blood pressure (e.g., those with hypertension or heart disease). It can also cause temporary MORE information needed.
**Lipids**

**CHAPTER 5**

Lipids are a group of naturally occurring organic compounds that are insoluble in water, comprising fat, cholesterol, and fatty acids. They are essential for cell function and are involved in cell signaling and hormone production.

**DEFICIENCY OF OMEGA-3**

Deficiency of Omega-3 seems to be associated with behavior, learning, and health problems (e.g., ADHD, depression). The body does not produce sufficient amounts of Omega-3 and must be obtained through diet. Foods rich in Omega-3 include eel, cold-water fish, and walnuts.

**DHA**

DHA is a polyunsaturated fatty acid, primarily found in cold-water fish such as herring, mackerel, salmon, sardines, trout, and tuna. It is essential for brain health and is recommended for children and adults.

**LECHE**

Lecithin is a phospholipid, commonly derived from soybeans, eggs, and liver. It is a natural emulsifier and is used in various food products. Lecithin is also used as a supplement to improve cognitive function.

**CHOLESTEROL**

Drugs such as Lovastatin, Pravastatin, and Simvastatin are used to lower cholesterol levels. Diet changes, such as reducing dietary cholesterol and increasing fiber intake, are also important in managing cholesterol.

**BETA-CAROTENE**

Beta-carotene is a precursor to Vitamin A and is found in dark green vegetables, red and yellow fruits, and orange and yellow vegetables.

**VITAMIN E**

Vitamin E is an antioxidant and is found in foods such as nuts, seeds, and oils. It is important for skin health and immune function.

**VITAMIN D**

Vitamin D is essential for bone health and is found in fatty fish, liver, and egg yolks. It is also produced in the skin with exposure to sunlight.

**SUMMARY**

Deficiency of lipids can lead to health problems, and adequate intake is essential for optimal health. Lipid intake should be balanced to ensure adequate intake of all necessary fatty acids.
in the U.S., may have very little Omega-3 (they may also be high in pesticides and such industrial chemicals as PCBs). Diets heavy in highly unsaturated Omega-3 oils should be supplemented with anti-oxidants (vitamin C, vitamin E, selenium, beta-carotene), as Omega-3 is easily destroyed by light, oxygen, and high temperature.

Diabetics should avoid taking fish oil capsules; they can raise blood sugar and lower insulin secretion, worsening their condition. Taking too much Omega-3 in capsule form may over-stimulate the prostaglandins, harming the body. It can also prevent the normal clotting of blood. Fish oil capsules are high in cholesterol, and those that aren’t may contribute to cell-destroying lipid peroxidation. Additionally, other substances in fish may contribute to Omega-3’s beneficial effects and may not be present in fish oil capsules. Because they could cause excessive bleeding, fish oil supplements should be stopped about two weeks before surgery. Avoid cod liver oil, which has high concentrations of vitamins A and D, fat-soluble vitamins that can easily build up to toxic levels in the body.

The effects of Omega-3 in flaxseed is assumed to have the same effects as the Omega-3 in fish, even though research has been conducted almost exclusively on fish oil and the results extrapolated to flaxseed, and even though the alpha-linolenic acid in fish oil is already converted to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) while that in flaxseed oil has to be converted in the body. A significant number of people, especially when ill, have a limited capacity to biochemically convert the flaxseed oil. Still, flaxseed oil has one hundred times the level of lignans, or beneficial compounds, of other plant foods, and it has been used to treat lupus, high cholesterol and other cardiovascular diseases, allergic and inflammatory conditions (e.g., psoriasis, eczema), and autoimmune diseases (e.g., multiple sclerosis, rheumatoid arthritis, cancer).

Omega-3 oil supplement should meet the following requirements: it should be in a black plastic bottle so as to prevent exposure to light (brown glass is unacceptable, as it still allows certain wavelengths of light to enter), and the bottle should have both a pressing date and a four-month expiration date; it needs to be refrigerated at all times when not in use; and it should have some color to it, as clear and colorless oils have most likely been deodorized and bleached.

Dosage: 3 or 4 ounces of fish. When taking flaxseed oil, take one tablespoon twice a day, and with fish oil capsules, it is recommended that no more than 5 g/day be taken. Dr. Donald Rudin recommends one teaspoon of linseed oil (about 2 grams of Omega-3 fatty acids) as a minimum daily requirement to correct any nutritional deficiency. Those with serious degenerative diseases might need more, but should take higher doses only under the guidance of a qualified health professional.

Lipotropes are substances attracted to fat, the four most important being choline, folic acid, methionine, and vitamin B-12.

Effects: They play an important role in the synthesis of phospholipids, prevent the formation of fat in the liver, and prevent fat from accumulating in the body. They are involved in the synthesis of other important substances, including neurotransmitters, hormones, and enzymes.

Cytidine diphosphate choline (CDP-choline) and S-adenosylmethionine (SAM) are the active forms of choline and methionine. CDP-choline is used in Japan and Italy to stimulate brain circulation following brain injury or brain surgery, and to treat Alzheimer’s disease, severe depression, Parkinson’s disease, and similar degenerative brain disorders. Though the exact mechanism by which it works is unknown, it is believed to increase the blood flow and the utilization of oxygen in the brain. One of the forms, SAM, is being investigated as a treatment for depression, fibromyalgia, and osteo-arthritis.

Precautions: CDP-choline can cause agitation, dizziness, headaches, nausea, and loss of blood pressure. As yet, SAM has no known side effects.

Phosphatidylserine AKA: LEC-PS, PS.

One of the four main phospho-lipids found in lecithin; the others are phosphatidylcholine (PC), phosphatidylethanolamine (PE), and phosphatidylinositol (PI). All are vital components of cell membranes. Phosphatidylserine has its highest concentration in the brain, where it plays a role in various nerve cell functions. It has proven superior to ginkgo biloba and other herbs in its benefits.

Food sources: Fish, rice, soy products, green leafy vegetables.

Effects: It improves learning, memory, attention, and alertness. It has been shown to improve the symptoms of Alzheimer’s disease. It also improves cognitive performance in older adults. It has been shown to improve memory and learning in students.

Precautions: No known side effects.

Dosage: 100 to 200 mg/day to be taken with meals. It should not be taken too late in the evening. A PS “complex” may only be 20 percent pure PS, and so the dosage should be adjusted accordingly.
CHAPTER 6
Nucleic Acids

Nucleic acids are large molecules which contain genetic material.

OROTIC AND INOSINIC ACIDS
AKA (inosinic acid): Hypoxanthine riboside, inosine.

Effects: Orotic acid is a possible B vitamin and is a precursor of the pyrimidines, which help manufacture nucleotides and nucleosides. Both orotic and inosinic acids are converted by the body into DNA. A few Russian studies have shown that they may be helpful in treating hearts damaged by heart attacks, congestive heart failure, and cholesterol, but much more research needs to be done before any conclusions can be drawn. There is little evidence in the literature to support or refute their effectiveness in improving cardiovascular health.

Inosinic acid promotes the dilation of blood vessels — increasing blood flow and oxygen delivery in the body — and increases both RNA and DNA production. Athletes use inosinic acid to stimulate protein synthesis in muscle cells, presumably building muscle mass.

Precautions: According to W. Nathaniel Phillips, dosages higher than 2 grams a day degrade into uric acid, which can cause joint pain and kidney stones after prolonged use. Those with kidney disease or other kidney problems should avoid using this supplement.

Dosage: Phillips recommends 1.5 to 2 g/day an hour before workouts or training, but only for athletes whose training sessions are long and rigorous. Sheldon Saul Hendler, M.D., Ph.D., does not recommend supplementation.

RIBONUCLEIC ACID
AKA: Ampligen, Poly (A/Poly (U)/Poly (I,C), RNA.

Levels of RNA decrease starting at age 40, along with its resistance to misprogramming of the genetic code caused by the by-products of lipid peroxidation.

Food sources: Brewer's yeast, sardines.

Effects: Has improved memory in lab animals and protects against oxidizing chemicals contributing to aging, thereby slowing the deterioration seen in older people. It has increased the life span of lab rats by 20 percent, increased immunity to bacterial and fungal infections in humans, and may have anti-cancer properties.

Poly (A)/Poly (U) and Poly (I,C) are two synthetic polyribonucleotides that have shown promise as anti-cancer treatments, particularly in regard to breast cancer.

Precautions: It should not be taken by those with gout or high urate levels, as it produces large amounts of uric acid, the cause of gout (the uric acids forms crystals in the joints and kidneys, resulting in extreme pain and permanent damage to the body). Its acidity can also cause upset stomach, possibly prevented with the ingestion of baking soda with the supplements.

Yeast can be 6 to 10 percent RNA but does little good because the cell walls of the plant cannot be digested to any significant extent by the body. Any supplement with less than 12 percent RNA is also of limited value, as it, too, can have too little RNA to have any effect.

Dosage: No side effects have been reported in normal people given up to 80 g/day. Sheldon Saul Hendler, M.D., Ph.D., recommends taking up to 1.5 g/day, or about three tablespoons of brewery's yeast.
AKA: Cell Guard, Cu/ZnSOD, LIP-SOD, MnSOD, SOD.

SUPEROXIDE DISMUTASE

Succinates are metabolites necessary for energy production in cells.

SUCCINATES

blood clots; and mental and physical stress.

Effects: Saponins are believed to have anti-oxidant, anti-cancer, anti-inflammatory, and anti-viral properties.

Food Sources: Asparagus, bean sprouts, chickpeas, ginseng, guarana, oats, potatoes, soybeans, vegetables, as well as legumes and whole grains. There are several thousand different species of saponins, and they exhibit a wide range of pharmacological properties.

Saponins are steroid-like chemicals connected to sugar molecules that occur naturally in plants.

SAPONINS

Dosage: Earl Mindell, R.Ph., Ph.D., recommends 1000 to 6000 mg/day.

It takes about three weeks before the effects are noticed.

Octacosanol is one of several long-chain alcohol molecules found in wheat germ oil.

OCTACOSANOL

Food Sources: Alfalfa, wheat germ, wheat germ oil, whole grains.

Cytoschiorines

Cytoschiorines are a component of GPtrophon.

Cytoschiorines increase energy and endurance.

Precautions: There is no evidence that supplements provide any benefits.

CARNITINE

AKA: carnitine, Carnitor, D-carnitine, DL-carnitine, L-carnitine, levocarnitine, N-acyl-L-carnitine

Carnitine is a coenzyme that is involved in the transport of long chain fatty acids from the bloodstream into the body's own mitochondria for energy production.

Dosage: Carnitine is available in liquid or capsule forms, and it is generally recommended to take it with fatty foods. The dosage recommendation is 50-150 mg a day.

Precautions: Those with kidney damage should use supplements with extreme caution.

L-IBEROSIDONE

An anti-oxidant that is very similar to CoEnzyme Q10.

Precautions: There is no evidence that supplementation produces any benefits.

L-IBEROSIDONE

Effects: Said to increase energy and endurance.

CYTOCHROMES

ADH

AKA: Alcohol Dehydrogenase

ADH is an enzyme that has very similar to CoEnzyme Q10.

Precautions: There is no evidence that supplements provide any benefits.

ADH

L-carnitine is a coenzyme that is involved in the transport of long chain fatty acids from the bloodstream into the body's own mitochondria for energy production.

Dosage: Carnitine is available in liquid or capsule forms, and it is generally recommended to take it with fatty foods. The dosage recommendation is 50-150 mg a day.

Precautions: Those with kidney damage should use supplements with extreme caution.

L-CARNITINE

AKA: ALC, Alcar, carnitine, Carnitor, D-carnitine, DL-carnitine, L-carnitine, levocarnitine, N-acyl-L-carnitine

Miscellaneous Nutrients

CHAPTER 7

SASOVPHEN

AKA: CoQ, CoQ-10

Sasovphen is a synthetic substance that is claimed to improve heart function in people with congestive heart failure.

Precautions: There is no evidence that supplements provide any benefits.

SASOVPHEN

SAPONINS

AKA: CoQ, CoQ-10

Saponins are natural compounds that are derived from plants.

Precautions: There is no evidence that supplements provide any benefits.

SAPONINS

SAXICENONE

Saxicenone is a natural plant extract that is claimed to have anti-inflammatory properties.

Precautions: There is no evidence that supplements provide any benefits.

SAXICENONE

SODIUM D-LYSINE

AKA: L-Lysine

Sodium D-lysine is a synthetic substance that is claimed to improve heart function in people with congestive heart failure.

Precautions: There is no evidence that supplements provide any benefits.

SODIUM D-LYSINE

SODIUM L-THIOSULFATE

AKA: SLS

Sodium L-thiosulfate is a synthetic substance that is claimed to improve heart function in people with congestive heart failure.

Precautions: There is no evidence that supplements provide any benefits.

SODIUM L-THIOSULFATE

SODIUM L-THIOSULFATE
It ranks fifth among proteins in terms of the amount in our bodies, after collagen, albumin, globulin, and hemoglobin.

Food Sources: Barley grass, broccoli, brussel sprouts, cabbage, green plants, wheat grass.

Effects: An extremely powerful anti-oxidant enzyme that works synergistically with catalase to counteract superoxide, the most common and hazardous free radical. The production of SOD in the body decreases as we age.

There are two forms of SOD: copper/zinc SOD (Cu/ZnSOD), which protects the cytoplasm of the cell; and manganese SOD (MnSOD), which protects the mitochondria, where the genetic information resides and cellular energy is produced.

Liposomal superoxide dismutase (LIPSOD) is SOD that has been encapsulated in a liposome "delivery vehicle." Both SOD and LIPSOD have been used in the treatment of rheumatoid arthritis, damage caused by radiation therapy and heart attacks, unresponsive anemia, and various autoimmune disorders such as scleroderma, Crohn's disease, Behcet's disease, Empyema, rheumatoid arthritis, and Friedreich's ataxia. Liposomal superoxide dismutase has shown promise in the treatment of multiple sclerosis, Alzheimer's disease, and Parkinson's disease.

Precautions: Stomach acid destroys SOD, so tablet supplements must be enteric coated so that they can be safely absorbed in the small intestine.

TELOMERASE

Called the "immortality enzyme" because it encourages cell division for an indefinite period of time, preventing the cells from dying of old age (normal human cells divide approximately 75 times over a person's life span before the telomere—the protective end of the chromosome—wears away and becomes too short to protect the chromosome, leading to the death of the cell).

Effects: It could extend life span and health indefinitely.

Precautions: There is some debate whether it could be a carcinogen, as it has been found in 90 percent of all cancer cells. Some say that telomerase by itself does not create cancer cells, while others counter that its ability to promote cell division could cause cancer cells to proliferate unchecked.
Hormones

Estrogen

Estrogen is a group of hormones produced by the body's glands primarily in women. It is essential for the development and maintenance of female reproductive organs and secondary sex characteristics.

**Effects:** It promotes growth of the female reproductive organs, development of secondary sex characteristics, maintenance of the lining of the uterus, and stimulates milk production and milk release after childbirth.

**Precautions:** It should not be taken by anyone who is allergic to any drugs containing estrogen, has a history of blood clots, a stroke, or a heart attack. It should also be taken with caution in those with cancer of the breast or reproductive organs, fibrocystic breast disease, fibroid tumors of the uterus or endometriosis, who have had blood clots, a stroke, or a heart attack. Those who have had cancer of the breast or reproductive organs, fibrocystic breast disease, fibroid tumors of the uterus or endometriosis, who have had blood clots, a stroke, or a heart attack.

**Dosage:** For humans, the optimal dosage is as yet not known, though usage has ranged anywhere from 50 to 2000 mg/day. For general health, some recommend a more modest dose of 19 mg/day for women and 25 to 50 mg/day for men.

**Side effects:** Stomach cramps, appetite loss, nausea, diarrhea, swollen feet and ankles, weight changes, increased sensitivity to sunlight and sunlamps, and, in rare cases, a blood clot in the lung, brain, or leg. Women on estrogen are also given the hormone to reduce the risk of heart disease.

**Chapter 8: ADRENOCORTICOTROPIC HORMONE ANALOGS**

**GABA**

GABA (Γ-Aminobutyric acid) is an inhibitory neurotransmitter in the brain, produced by the brain cells. It is a key element in the regulation of sleep, emotional state, and anxiety.

**Effects:** It is involved in the regulation of muscle tone, movement, sleep, learning, and memory. It is also involved in the regulation of anxiety, depression, and schizophrenia.

**Precautions:** It should be used with caution in people with a history of depression, schizophrenia, or other psychiatric disorders. It should be used with caution in people who are taking other medications that affect the central nervous system.

**Dosage:** The optimal dosage is not known, though usage has ranged anywhere from 50 to 2000 mg/day. For general health, some recommend a more modest dose of 19 mg/day for women and 25 to 50 mg/day for men.

**Side effects:** Stomach cramps, appetite loss, nausea, diarrhea, swollen feet and ankles, weight changes, increased sensitivity to sunlight and sunlamps, and, in rare cases, a blood clot in the lung, brain, or leg.
The hormone 7-keto is metabolized from DHEA.

Foods, though this type of bingeing does not necessarily indicate a serotonin deficiency. It also contributes to the onset of headaches, migraines, and certain cardiovascular conditions such as obesity.

Precautions: It cannot pass through the blood/brain barrier. The ability of carbohydrates to raise serotonin can be improved by eating plenty of vegetables will help maintain stable serotonin levels, as will regular exercise. Though foods cannot manufacture it from tryptophan or 5-HTP in foods and supplements.

SEROTONIN

Available in a variety of forms — pill, capsule, sublingual tablet, cream, micronized pill, liquid, and injection. It is approved for use by the FDA for the treatment of depression under the guidance of a physician, and maintains that it is not needed by healthy people under 40. It is not recommended for infants, children, or pregnant women, and is not recommended for use during lactation.

Precautions: Too high a dose can result in irritability, anxiety, headaches, insomnia, and weight loss.

MELATONIN

A hormone formed from cholesterol in various organs of the body, including the adrenal glands, pituitary, and brain. It is secreted by the pineal gland, a small oval-shaped organ near the back of the brain, and released into the bloodstream. The sale of melatonin is banned in Canada, France, and Britain.

Precautions: The sale of melatonin is banned in Canada, France, and Britain.

NADH

A neuropeptide currently under study for its brain-boosting effects.

Precautions: The sale of melatonin is banned in Canada, France, and Britain.

NADH

AKA: Nicotinamide adenine dinucleotide.

Precautions: Too high a dose can result in irritability, anxiety, headaches, insomnia, and weight loss.

NADH

The level of NADH decreases.

Precautions: Too high a dose can result in irritability, anxiety, headaches, insomnia, and weight loss.

Natural history: A hormone that is secreted by the pineal gland.
within seconds. Mucous membranes of the nose and taken directly into the brain, and improvements may be noticed will improve memory, according to most studies. It works extremely fast, as it is absorbed into the S.P. [United States Pharmacopeia] Posterior Pituitary Units, in each nostril three to four times a day.)

Dosage: A total dose of 12 to 16 units/day from a nasal spray bottle (one whiff, or approximately 2 U. a rare condition called water intoxication. Excessive use of the drug should not be combined with excess water consumption, as it could lead to vasopressin should be snorted into the upper nasal cavities, as inhaling it deep into the lungs may ulcerations, abdominal cramps, heartburn, nausea, headaches, and more frequent bowel movements. Occasionally results in nasal congestion, runny nose, itching or irritation of nasal passages, nasal in such cases. It should also be avoided by those with kidney disease and epilepsy. For others, it vessels. Some say that angina patients will experience heart pain; Pearson and Shaw discourage use (particularly hypertension and angina pectoris) should not use vasopressin, as it narrows the blood taken in combination with Aldosterone. It is recommended that those with cardiovascular problems Precautions: It may create symptoms of toxicity when taken alone; these may be alleviated when electrically-induced amnesia, as well. It can counteract the effects of the drugs mentioned above. It traumaically-induced amnesia (caused by physical injury to the brain), and possibly chemically and this information in the brain. It has been shown to restore memory lost as a result of aging, concentration, memory, short- and long-term recall, recognition, retention, and creativity. It may have an additional amino acid; their effects are basically the same. Arginine-vasopressin (argipressin) and lysine-vasopressin (lypressin) are forms of vasopressin that senile dementia.

Vasopressin is released by experiences of great trauma or intense arousal (which may be one reason secretion, which may be why users frequently do not remember events when drunk or stoned. Diapid supply of this hormone. Conversely, depressant drugs such as alcohol and marijuana suppress the (metahylphenidate) also release large amounts, and habitual use of these drugs depletes the brain's effects of amphetamines, oral anticoagulants, tricyclic antidepressants, oral antidiabetics or insulin, phenytoin, and enhanced by large continuous doses of aspirin. In combination, it can enhance the Its effect can be inhibited by cholestyramine, colestipol, oral contraceptives, estrogens, and epinephrine, ephedrine, or isoproterenol for asthma should consult a physician first. pressure, diabetes, Addison's disease, who have had adrenal gland deficiency, or who use Thyroid hormones should not be taken by anyone who has had a heart attack within the past six weeks or for any reason other than a thyroid deficiency. Those who have heart disease, high blood "hot" feeling, heart palpitations, nervousness, sweating, hand tremors, insomnia, rapid and irregular symptoms include tremors, headaches, irritability, insomnia, changes in appetite, diarrhea, leg cramps, menstrual irregularities, fever, heat sensitivity, unusual swelling, weight loss, and symptoms include hives, rash, vomiting, chest pain, heartbeat premenstrual PMS symptoms. It can be given in a variety of formulations including a tablet, an oral liquid, a nasal spray or a transdermal and (thyroxine) also release large amounts of thyroid hormone, and may be used for some conditions such as thyroid hormone replacement. Its long-term use has been associated with heart disease, cancer, and (thyroid hormone replacement) may have an additional amino acid; their effects are basically the same. Arginine-vasopressin (argipressin) and lysine-vasopressin, Minirin, Postacton, rinderpressin, Syntopressin.

VASOPRESSIN

A neuropeptide which, along with its analogs, is currently under study for its brain-boosting effects.

THYROID HORMONES

A class of drugs that mimic the hormone produced in the thyroid gland. Subclinical hypothyroidism, or a slightly underfunctioning thyroid, can be one reason for poor concentration, mental confusion, and memory disturbances . The condition is also characterized by such symptoms as cold hands and feet, menstrual problems, dry skin, thin hair, and low energy levels. It is little-
Aka: Eucalyptus citriodora, Eucalyptus globulus, Eucalyptus radiata.

Eucalyptus belligerent. Before they could be rescued, two suffered from extreme nausea, and all suffered from workers who tried to clean up fifty quarts of coriander oil spilled from a large container were aromatherapist, as the wrong dosage could prove fatal. One case on record relates that several CORIANDER accompanying hangover with extreme nightmares.

Precautions: Should not be used by anyone who suffers from epilepsy. Despite the synergistic effect Works synergistically with bergamot, cypress, geranium, jasmine, lavender, and sandalwood.

Effects: Said to relieve depression, stress, and fatigue; improve memory and creativity; induce intense

Chapter 9

Essential Oils

CHAPTER 9

Essential Oils

Aromatherapy, or the use of herbal oils as medicines, has been practiced for thousands of years. Essential

Essential Oils

Aka: Ache, Apium graveolens, smallage.

Precautions: Some brands may be adulterated with other essential oils, including juniper, which may

Dyspepsia, flatulence.

Effects: Said to increase energy. It is used to treat various digestive problems, including colic, colitis,

AKA: Carum carvi.

Precautions: Should not be used by those with asthma or allergies. It is a very strong oil, and extra

Effects: Said to increase energy.

AKA: Camphora officinarum, Cinnamomum camphora, Laurus camphora.

Precautions: Avoid sunlight if applying directly to the skin or using in bath water.

Camphor

Bay

Ocimum gratissimum). Constant use of basil may dull the mind, rather than stimulate it.

Cancer in large doses (varieties low in estragol include Ocimum Americanum, Ocimum canum, and

Precautions: Contains estragol, which may cause adverse reactions in some people and — possibly —

Brain. Said to increase concentration, mental functioning, and memory, relieve nervousness and

Effects: Contains high amounts of cineole, a compound which increases blood flow to parts of the

Basil

Precautions: Avoid sunlight if applying directly to the skin, as it may cause dermatitis. The fresh oil

AKA: Ocimum basilicum.

Precautions: Avoid sunlight if applying directly to the skin; especially for more than two or three weeks at a time, as they can produce effects that are the

Pure, undiluted oils are extremely concentrated and should never be inhaled directly from the bottle or

Smells can have a direct influence on the brain, affecting emotion and memory by stimulating the

Prices can vary depending on such factors as the origin of the plant, the method of extraction, and

They should not be used on skin ulcers, open wounds, or burns.

Essential oils work synergistically with each other.

Eucalyptus

Basil

Precautions: Some brands may be adulterated with other essential oils, including juniper, which may

Precautions: It may cause allergic reactions in some people.

Precautions: It may be irritating if applied directly to the skin, especially in its pure state.

Benzoin

Bay


Precautions: It may be irritating if applied directly to the skin, especially in its pure state.

Bay

Precautions: Contains caryophyllene, which may cause allergic reactions in some people.

Cumin

Precautions: Should not be used by anyone who suffers from epilepsy. Despite the synergistic effect Works synergistically with angelica, cedar, chamomile, geranium, lavender, lemon, neroli, rose, and

Camphor

Bergamot

AKA: Citrus aurantium bergamia.

Precautions: It may cause allergic reactions in some people.

Precautions: It should not be used on skin ulcers, open wounds, or burns.

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Caraway

Precautions: Should not be used by those with allergies or asthma. It is a very strong oil and

Caraway

Precautions: Should not be used on skin ulcers, open wounds, or burns.

Cajuput

AKA: Cinnamomum camphora.

Precautions: Contain compounds which could be carcinogenic if used regularly for an extended period of time. Essential oils should not be applied in large amounts, as they can produce effects that are the

Precautions: It may be irritating if applied directly to the skin, especially in its pure state.

Bay


Precautions: Should not be used by anyone who suffers from epilepsy. Despite the synergistic effect Works synergistically with bergamot, cypress, geranium, jasmine, lavender, and sandalwood.

Effects: Said to relieve depression, stress, and fatigue; improve memory and creativity; induce intense

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Dyspepsia, flatulence.

Effects: Said to increase energy. It is used to treat various digestive problems, including colic, colitis,

AKA: Cardamon, Elettaria cardamomum.

Precautions: Should not be used by those with asthma or allergies. It is a very strong oil, and extra

Effects: Said to increase energy.

AKA: Camphora officinarum, Cinnamomum camphora, Laurus camphora.

Precautions: Avoid sunlight if applying directly to the skin or using in bath water.

Camphor

Bay

Ocimum gratissimum). Constant use of basil may dull the mind, rather than stimulate it.

Cancer in large doses (varieties low in estragol include Ocimum Americanum, Ocimum canum, and

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Brain. Said to increase concentration, mental functioning, and memory, relieve nervousness and

Effects: Contains high amounts of cineole, a compound which increases blood flow to parts of the

Basil

Precautions: Avoid sunlight if applying directly to the skin or using in bath water.

CAMPHER

AKA: Cinnamomum cassia or Cinnamomum verum. Aka: Cassia gum.

Precautions: It should not be used on skin ulcers, open wounds, or burns.

Comfrey

AKA: Symphytum officinale. Aka: Symphytum officinale.

Precautions: It may contain pyrrolizidine alkaloids, which may cause liver damage.

Comfrey


Precautions: Should not be used by those with allergies or asthma. It is a very strong oil and

Precautions: It should not be used on skin ulcers, open wounds, or burns.

Cumin

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Cumin
AKA: Myristica fragrans.

NUTMEG

petitgrain.

Precautions: It may increase the chance of a sunburn if applied to the skin. It is often adulterated with

Works synergistically with jasmine and rose.

Effects: Said to relieve stress, anxiety, fatigue, depression, insomnia, and pain, and to increase

AKA: Citrus aurantium, Citrus aurantium bugardia, Citrus bigaradia.

NEROLI

Effects: Said to cleanse the mind, spirit, and body, and to aid concentration during meditation.

AKA: Myrtus communis.

MYRTLE

Effects: Used as an aid in meditation. It is also used to treat skin and mouth problems.

MYRRH

aromatherapist. It may cause irritation when applied to the skin. Some brands may be adulterated

Precautions: It is a very strong oil and should only be used under the guidance of an expert

Works synergistically with geranium, lavender, myrtle, neroli, and rose.

Effects: Said to relieve stress and insomnia. It has been used to treat such conditions as anorexia,

AKA: Balm, bee balm, lemon balm, Melissa officinalis, sweet balm.

MARJORAM

Effects: Said to relieve anxiety, stress, and depression.

AKA: Citrus limetta.

LIME

along with geranium and citronella, it is often used to imitate rose and verbena.

Precautions: It may be irritating when applied to sensitive skin. It is used to adulterate melissa and,

Works synergistically with eucalyptus, geranium, juniper, lavender, lime, and pine.

Effects: Said to relieve fatigue, induce calmness, and increase concentration.

AKA: Cymbopogon citratus, Cymbopogon flexuosus, melissa grass.

LEMONGRASS

Precautions: Used in their undiluted form, there is no danger, however, when using in a

Precautions: If applied to the skin, it can cause a rash when exposed to sunlight.

Precautions: Since it is so expensive, it is often adulterated with artificial esters, rosemary, and ylang-ylang.

rosemary, and ylang-ylang.

LAVANDIN

AKA: Juniperus communis.

JUNIPER

Precautions: Individuals with other allergies or asthma may suffer an allergic reaction to lavender.

Precautions: Should not be used in the home. The oil should only be used by a qualified master

LAVENDER

Effects: Said to relieve stress and anxiety, and contribute to a deeper, more restful sleep. It is used for

Precautions: Can increase chances of sunburn when applied to skin.

LAVANDIN

AKA: Jasminum grandiflorum (royal jasmine, Spanish jasmine), Jasminum officinale (common

AKA: Zingiber officinalis.

GINGER

Precautions: It could cause a rash or blisters if applied directly to the skin or added to bath water.

Effects: Said to increase energy. It has been used to treat diarrhea, catarrh, and rheumatism.

FENNEL

Effects: Contains cineole and eucalyptol, both of which stimulate the central nervous system. The oil

EMMER

Effects: Contains oil of thujone, which occurs naturally in some essential oils. Small amounts of thujone are

GAUFRY

Effects: Said to increase energy, relieve depression, and improve memory and concentration.

AKA: Pelargonium graveolens, Pelargonium odoratissimum.

GERANIUM

effects. It may also be used in the treatment of trichomonas vaginitis, and occasionally is used in herbal

LAVEN

AKA: Boswellia carteri, Boswellia thurifera, olibanum.

FRANKINCENSE

Precautions: It should not be used by those suffering from epilepsy; it should not be used

Effects: Said to reduce stress and depression, induce calmness, and increase energy. It has been used

Precautions: It should not be used by those suffering from asthma, as it may cause bronchial irritation.

FERULA

Effects: Said to relieve nervous tension and increase life span. It has been used to treat muscular

MUSK

Effects: Said to increase energy. It has been used to treat diarrhea, catarrh, and rheumatism.

MINT

Effects: Said to relieve stress and insomnia. It is used in the treatment of common colds.

MINT

Effects: Said to increase energy, relieve depression, and improve memory and concentration.

MINT

Effects: Said to increase energy, relieve depression, and improve memory and concentration.

MINT

Effects: Said to slow down and deepen breathing, and to promote calmness and feelings of

LIME

Effects: Said to increase energy. It has been used to treat diarrhea, catarrh, and rheumatism.

FENNEL

Effects: Said to have a stimulating effect on the body, and to be used as a digestive. It is useful in the treatment

Effects: Said to relieve stress and insomnia. It is used in the treatment of common colds.

LAVENDER

Effects: Said to increase energy. It has been used to treat diarrhea, catarrh, and rheumatism.

MINT

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**BUTTER**

Cananga, also called Cananga macrophylla, is a tree that is commonly grown in the tropical areas of Southeast Asia and the Pacific Islands. It is popularly known as ylang-ylang, and it is used in various culinary and medicinal applications. It is known for its sweet and floral aroma, which makes it a popular ingredient in perfumes, cosmetics, and soaps. In addition, ylang-ylang is often used in aromatherapy for its relaxing and soothing properties.

**COCONUT OIL**

Coconut oil is a popular ingredient in the cooking and baking industries due to its high saturated fat content, which makes it solid at room temperature. It is used in various dishes, especially in Asian and Caribbean cuisine. Coconut oil is also a popular ingredient in body care products, such as lotions, shampoos, and soaps, due to its moisturizing and anti-inflammatory properties.

**Ginger**

Ginger is a popular spice that is used in various dishes, especially in Asian and Indian cuisine. It is known for its spicy and sweet flavor, which makes it a popular ingredient in curries, stir-fries, and soups. Ginger is also a popular ingredient in health and wellness products, such as teas and supplements, due to its anti-inflammatory and anti-microbial properties.

**Lemongrass**

Lemongrass is a tropical plant that is commonly grown in Southeast Asia. It is known for its citrusy and refreshing aroma, which makes it a popular ingredient in Thai and Vietnamese cuisine. Lemongrass is also used in aromatherapy and in the production of essential oils.

**Cinnamon**

Cinnamon is a spice that is used in various dishes, especially in Middle Eastern and Asian cuisine. It is known for its sweet and spicy flavor, which makes it a popular ingredient in desserts, such as pies and cakes. Cinnamon is also used in health and wellness products, such as teas and supplements, due to its anti-inflammatory and anti-microbial properties.

**Pepper**

Pepper is a spice that is used in various dishes, especially in Asian and Middle Eastern cuisine. It is known for its spicy flavor, which makes it a popular ingredient in curries, soups, and stir-fries. Pepper is also used in health and wellness products, such as teas and supplements, due to its anti-inflammatory and anti-microbial properties.

**Rose**

Rose is a popular flower that is used in various dishes, especially in Middle Eastern and Asian cuisine. It is known for its sweet and floral aroma, which makes it a popular ingredient in desserts, such as cakes and pastries. Rose is also used in health and wellness products, such as teas and supplements, due to its anti-inflammatory and anti-microbial properties.

**Verbena**

Verbena is a popular herb that is used in various dishes, especially in Mexican and Middle Eastern cuisine. It is known for its lemony and sweet aroma, which makes it a popular ingredient in teas, desserts, and health supplements. Verbena is also used in aromatherapy and in the production of essential oils.

**Sandalwood**

Sandalwood is a popular wood that is used in various dishes, especially in Middle Eastern and Asian cuisine. It is known for its sweet and woody aroma, which makes it a popular ingredient in perfumes, cosmetics, and health supplements. Sandalwood is also used in aromatherapy and in the production of essential oils.

**Peppermint**

Peppermint is a popular herb that is used in various dishes, especially in Middle Eastern and Asian cuisine. It is known for its refreshing and sweet aroma, which makes it a popular ingredient in teas, desserts, and health supplements. Peppermint is also used in aromatherapy and in the production of essential oils.

**Lavender**

Lavender is a popular herb that is used in various dishes, especially in Middle Eastern and Asian cuisine. It is known for its sweet and floral aroma, which makes it a popular ingredient in perfumes, cosmetics, and health supplements. Lavender is also used in aromatherapy and in the production of essential oils.
CHAPTER 10
Entheogens

Animals

Some animals, particularly insects, are known to possess hallucinogens. Among the most powerful
hallucinogens is the mescaline produced in the peacock butterfly. Similarly, the hallucinogenic
acridine from the peacock moth larva, Callimorpha amata, has been isolated along with other
alkaloids, including a neurotoxin. The hallucinogenic behavior of these insects appears to be
induced by the specific environment (such as exposure to light) rather than by the consumption
of their hallucinogenic secretions. Insects such as the ant-smith, which has been shown to
produce hallucinogen-like substances, may also play a role in the hallucinogenic behavior of
some animals.

Plants

Many plants contain psychoactive substances, and the use of these plants for medicinal or
ceremonial purposes has been documented throughout history. Some of the most well-known
psychoactive plants include Ayahuasca, caapi, and the various species of Psychotria.

Ayahuasca (Banisteriopsis caapi)

Ayahuasca is a South American liana, or jungle vine, that contains DMT and beta-carbolines,
which are psychoactive substances. It is prepared by the indigenous peoples of the Amazon
region and is used in traditional medicine and ceremonial rituals. Ayahuasca is made by
fermenting the leaves of the banisteriopsis vine with the bark of the Psychotria viridis plant.

Caapi (Banisteriopsis caapi)

Caapi is another species of Banisteriopsis, and it is also used in Amazonian rituals. It contains
DMT and other psychoactive substances and is often combined with other plants to enhance
its effects.

Psychotria

Various species of Psychotria are used in Amazonian rituals and are known to contain
psychoactive substances. These plants are often combined with other plants to enhance their
effects. Some of the most well-known species include Psychotria viridis, Pterophyllum
transcatatum, and Psychotria euryloba.

Animals

Some animals, particularly insects, are known to possess hallucinogenic secretions. The
mescaline produced in the peacock butterfly and the hallucinogenic acridine from the peacock
moth larva, Callimorpha amata, are examples of such substances. These insects may play a
role in the hallucinogenic behavior of some animals.

Plants

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its effects.

Psychotria

Various species of Psychotria are used in Amazonian rituals and are known to contain
psychoactive substances. These plants are often combined with other plants to enhance their
effects. Some of the most well-known species include Psychotria viridis, Pterophyllum
transcatatum, and Psychotria euryloba.
and petals are dried and rolled into joints. Dosage: One joint per day — smoking more does not seem to extend or intensify the high. The leaves poppy, but apparently does contain several psychoactive alkaloids.

CALIFORNIA POPPY

then slowly sipped. The Indians are said to finish off with a few puffs of calea leaves rolled into a

William Emboden and Jonathan Ott say there is none. It is also used to treat fever, nausea, and mild

produce mild LSD-like hallucinations. It should be taken on an empty stomach to prevent vomiting.

Dosage: An initial dose should be a 2-inch length of root the thickness of a pencil, which can either

root should not be stored for more than a few months, as it will lose potency.

CALAMUS

is not recommended. Green tea, in addition to containing about 100 mg of caffeine per serving, contain these two ingredients.

Effects: Caffeine is one of the most powerful legal stimulants; it gives a mental boost by releasing

interference with DNA replication. It has been shown to trigger panic attacks in susceptible people —

increase in the thyroid effect. Combined with caffeinated beverages, caffeine is likely to be more

result in overstimulation; with Cimetidine (Tagamet), oral contraceptives, or Isoniazid, increased

Food and drug interactions are also a cause for concern. Grapefruit juice can increase the level of

burning properties the natural form does. As for the natural forms, kola nut and yerba mate are the

caffeine and can also cause these symptoms. More severe and infrequent symptoms include

rhythms, stomach ulcers, and heart disease, though more recent studies refute these findings. When

Though it is readily absorbed into the bloodstream, researchers still do not understand its full effects

on more complex ones such as reading comprehension or advanced mathematics.

CAYENNE PEPPER

AN UE Boog et a/. 1981, p. 112. 2

BETEL

Boophane disticha

Dosage: A slice of betel nut is mixed with part of a leaf from the Piper betel vine and a piece of lime,

that is not yet ripe, can result in a feeling of drunkenness, followed by dizziness, vomiting, diarrhea,

weaken the sex drive and create other unwanted side effects. Ingesting too much arecoline, or betel

Effects: The stimulant is the alkaloid arecoline, which increases energy, elevates mood, and acts as an

as popular in Asia as tobacco is in the West.

BETEL

A favorite stimulant for thousands of years, it is still one of the most widely used drugs in the world,

ARTHROREA

Boophane disticha

is a common name for this plant. The plant is not yet ripe, can result in a feeling of drunkenness,

Effects: The stimulant is the alkaloid arecoline, which increases energy, elevates mood, and acts as an

A member of the nightshade family that is native to the highlands of South America.

AKA: Lochroma fuchsioides.

BELLADONNA

A favorite stimulant for thousands of years, it is still one of the most widely used drugs in the world,

A member of the nightshade family that is native to the highlands of South America.

AKA: Lochroma fuchsioides.
Aka (Datura): Concombre zombi (zombi's cucumber), Datura alba, Datura arborea, Datura aurea,

**DATURA AND BRUGMANSIA**

Effects: An inebriant with narcotic properties, this common wild grass contains psychoactive alkaloids. Loline, the main alkaloid, has been found to be nontoxic in doses of up to 200 mg per kilogram of body weight when injected into mice.

Precautions: Overuse may cause liver damage.

Dosage: One-quarter to one-half bean; any more could trigger the toxic effects mentioned above. Use is not recommended.

**DAM/ANA**

AKA: Cestrum laevigatum.

Effects: Excitement, hallucinations, and delirium.

Precautions: The toxic dose is very small. Some species of Erythrina are known to contain isoquinoline-type alkaloids, which produce effects similar to the arrow poison curare. Symptoms may include nausea, vomiting, and diarrhea.

Dosage: Between 50 to 70 large fresh leaves; dried leaves will not do. They can be chewed, smoked, or steeped in lukewarm water for an hour and drunk as a tea.

**DAMA DE NOITE**

AKA: Brunfelsia chiricaspi, Brunfelsia grandiflora, Brunfelsia tastevinii (keyahone).

Effects: Supposedly induces strange dreams and hallucinations.

Precautions: Brief nausea a half-hour after consumption.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.

**CAMELLIA SINENSIS**

Effects: It has been used for centuries as a gentle stimulant by indigenous peoples of South America, and the psychoactive ingredient of the coca leaf is cocaine, only one of over a dozen compounds in the coca plant. In fact, different species of coca contain different amounts of cocaine. It is still unknown whether the leaves contain any psychoactive substances other than the cocaine itself.

Precautions: James A. Duke, Ph.D., has found that Chinese club moss (Hu-perzia serrata) and species of club moss is often added to San Pedro.

**CANNABIS SATIVA**

AKA: Cannabis sativa, marijuana, cannabis.

Effects: A hallucinogen.

Precautions: It is extremely potent, with 80 percent of its alkaloids consisting of scopolamine. Use should be done with great caution.

Dosage: One gram of dried leaves (about 100 seeds) will produce the desired effect in about 15 minutes and has a duration of four to five hours. The psychoactive ingredient has been found to be present in all parts of the plant, including the roots, and it is produced by all parts of the plant except the seeds. Several species of Cannabis sativa have been found to contain scopolamine, but only one, the Mexican hemp, has been found to contain the hallucinoid compound. The psychoactive ingredient of the coca leaf is cocaine, only one of over a dozen compounds in the coca plant.

**CERATOPHYLLUM DENSIFOLIUM**

AKA: Ceratophyllum demersum, water hyssop.

Effects: Supposedly induces strange dreams and hallucinations.

Precautions: It can decrease the effectiveness of antihistamines, tranquilizers, sedatives, and relaxants, and can delay healing. Sensitivity to chocolate can trigger migraine headaches.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.

**CILIUM VULGARE**

AKA: Crataegus oxyacantha.

Effects: An inebriant with narcotic properties, this common wild grass contains psychoactive alkaloids. Loline, the main alkaloid, has been found to be nontoxic in doses of up to 200 mg per kilogram of body weight when injected into mice.

Precautions: Overuse may cause liver damage.

Dosage: One-quarter to one-half bean; any more could trigger the toxic effects mentioned above. Use is not recommended.

**CITRULLUS LANATUS**

AKA: Citrullus vulgaris, watermelon.

Effects: Supposedly induces strange dreams and hallucinations.

Precautions: Brief nausea a half-hour after consumption.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.

**CITRUS SINENSIS**

AKA: Citrus aurantium, mandarin, pomelo.

Effects: A hallucinogen.

Precautions: It is extremely potent, with 80 percent of its alkaloids consisting of scopolamine. Use should be done with great caution.

Dosage: One gram of dried leaves (about 100 seeds) will produce the desired effect in about 15 minutes and has a duration of four to five hours. The psychoactive ingredient has been found to be present in all parts of the plant, including the roots, and it is produced by all parts of the plant except the seeds. Several species of Cannabis sativa have been found to contain scopolamine, but only one, the Mexican hemp, has been found to contain the hallucinoid compound. The psychoactive ingredient of the coca leaf is cocaine, only one of over a dozen compounds in the coca plant.

**COLEUS**

AKA: Coleus blumei, Business.

Effects: It can deplete the body of inositol and the B vitamins, particularly B-1, and partially prevent the absorption of calcium. It also has significant levels of caffeine, which can place stress on the heart.

Precautions: Broad spectrum antibiotics, cardiac glycosides, digitalis, laudanosine, and phenothiazines.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.

**COLUMBIA BROMABROCHIUM**

AKA: Huperzia emarginata, resurrection fern.

Effects: The only known properties of this fern are that it has a very strong scent and is extremely attractive to those of its users. When boiled, it can be made into a tea, and it is thought to increase mental clarity.

Precautions: It is extremely potent, with 80 percent of its alkaloids consisting of scopolamine. Use should be done with great caution.

**COLUBRUM**

AKA: Crotalus atrox, rattlesnake.

Effects: It can deplete the body of inositol and the B vitamins, particularly B-1, and partially prevent the absorption of calcium. It also has significant levels of caffeine, which can place stress on the heart.

Precautions: Broad spectrum antibiotics, cardiac glycosides, digitalis, laudanosine, and phenothiazines.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.

**COMPOSIUM MACULatum**

AKA: Black hellebore.

Effects: A hallucinogen.

Precautions: It can decrease the effectiveness of antihistamines, tranquilizers, sedatives, and relaxants, and can delay healing. Sensitivity to chocolate can trigger migraine headaches.

Dosage: The average Indian consumes about two ounces of dried leaves a day, or about 0.7 grains of cocaine. Coca usually contains more leaves than the river coca, which has yet been determined whether it improves any mental functions, though its stimulant effect gives one the feeling of being smarter and mentally sharper.
Dosage: The spines are removed from 8 to 12 fresh cacti, after which the plant can be chewed thoroughly and swallowed or consumed as a tea; this latter method involves boiling in water for an hour. The spines may also be removed and the cacti baked at 285°F for 24 hours to release the active ingredients. The spines are then removed and the plant is boiled in water, and then a tea or decoction is used.

Effects: Similar to mescaline, but about 1/5 as potent. The hallucinogenic trip begins after about an hour and lasts for about 6 to 8 hours. The trip may be more intense if the cacti are chewed or eaten. The effects are dependent upon the dosage.

DONA ANA

Freebase: The effects of freebase can result in a high that begins within a minute, peaks after two, and lasts twenty. Parenteral dose increases the duration of the effects as well.

DMT and Related Tryptamines

DMT (N,N-dimethyltryptamine) is a common hallucinogen that is used orally, intranasally, and intramuscularly. It is also a psychoactive ingredient in psychotria viridis snuff (and variously call it cebil, cohoba, huilca, niopo, sebil, vilca, or yopo), and it can also be purchased in solid form as a powder. Other related tryptamines are listed above. AMT was made famous by Ken Kesey and his Merry Pranksters; it is produced both synthetically and in the venom glands of the Sonoran Desert toad of Arizona. However, the two types of 5-MeO-DMT produce vastly different experiences, the former resulting in a frightening “dissolution of reality” when smoked and the toad blooms as a “micro-dose” when ingested.

DMT: DMT is readily snorted, eaten, and injected, DMT (in a dose of 3.5 to 5 mg) can also be combined with other chemicals to create stronger drugs. The effective oral dose of AMT appears to be approximately 20 mg.

5-MeO-MIPT: This compound is used as a snuff, and it has a hallucinogenic effect. A similar compound, 5-MeO-MeMT, is also used as a snuff. 5-MeO-DMT is a close relative to DMT, and it is produced both synthetically and in the venom glands of the Sonoran Desert toad of Arizona. DMT may cause severe headaches, vomiting, dangerously high blood pressure, and even death when combined with avocados, bananas, broad beans, caffeine, aged cheese, or heart medication.

5-MeO-DMT: A close relative to DMT, 5-MeO-DMT is produced both synthetically and in the venom glands of the Sonoran Desert toad of Arizona. However, the two types of 5-MeO-DMT produce vastly different experiences, the former resulting in a frightening “dissolution of reality” when smoked and the toad blooms as a “micro-dose” when ingested.

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5-Oh-DMT: The reported hallucinogenic effects of 5-OH-DMT are disputed by research, which also suggests that this compound can cause a serious case of poisoning if brought into contact with the eyes or mouth.

5-MeO-MIPT: This compound has a hallucinogenic effect similar to that of LSD or mescaline, but shorter. Parica is a generic name for snuffs of all kinds.

5-MeO-DMT: A close relative to DMT, 5-MeO-DMT is produced both synthetically and in the venom glands of the Sonoran Desert toad of Arizona. DMT may cause severe headaches, vomiting, dangerously high blood pressure, and even death when combined with avocados, bananas, broad beans, caffeine, aged cheese, or heart medication.

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5-MeO-MIPT: This compound has a hallucinogenic effect similar to that of LSD or mescaline, but shorter. Parica is a generic name for snuffs of all kinds.
**IBOGA**

The only member of the dogbane family known to be used as a hallucinogen.

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** No more than one joint of leaves; smoking any more than that could result in severe toxicity.

**Precautions:** Contains a cyanide-like compound which can result in death.

**AKA:** Hydrangea arborescens, hydrangea paniculata grandiflora, seven barks, wild hydrangea.

**HOPS**

A member of the hemp family, it is used to add flavor to beer.

**Effects:** Contains THC, the psychoactive ingredient in marijuana. It acts as a sedative and, in higher amounts, can produce a mild marijuana-like high.

**Dosage:** The seeds and dried leaves can be smoked, or the crushed root can be brewed into a tea.

**Precautions:** The extremely bitter taste can trigger vomiting. Some nausea may also occur.

**HOLDON**

It is known for its hallucinogenic effects.

**Effects:** An effect similar to sacred mushrooms, but not as intense or as long (about two hours). No known medical benefits or uses.

**Precautions:** It can cause mental confusion, madness, and permanent insanity.

**AKA:** Huedhued, Pernettya furens.

**HENBANE**

AKA: Bang (bangue, bengi), black henbane, castilago, devil’s eye, fetid nightshade, goat’s joy, henbell, henquale, hog bean, Hyoscyamus, Hyoscyamus niger, insana, lusquiamus, Jupiter’s bean, potato henbane, poison tobacco, sakiru, sakrona, shakhrona, stinking nightshade, stinking Roger.

**Effects:** Hallucinations involving all the senses, along with a feeling of drunkenness and sedation.

**Dosage:** The seeds and dried leaves can be smoked, or the crushed root can be brewed into a tea.

**Precautions:** It can cause mental confusion, madness, and permanent insanity.

**AKA:** All-heal, English valerian, German valerian, great wild valerian, phu, setwall, turnsole, valerian, white valerian, wild valerian, wild valerian plant, wild valerian root.

**HEDGEROW CAPER**

**Effects:** A pleasant, marijuana-like high accompanied by a slight feeling of drunkenness.

**Precautions:** It is used to make a mild intoxicating drink, it is sometimes also smoked.

**AKA:** Caper, Capparis spinosa, caper plant, caper tree.

**HERBER**

A tree found in the rain forests of Colombia and Brazil, it is a member of the nutmeg family.

**Effects:** A marijuana-like effect when smoked.

**Precautions:** Its effects are similar to cannabis.

**AKA:** Argyreia nervosa, baby Hawaiian woodrose.

**HIBISCUS**

**Effects:** Exposed parts of the plant can be smoked. The smoke is not as potent as other plants.

**Precautions:** The smoke's aroma is intolerable to most people; its taste is slightly less objectionable.

**AKA:** Hibiscus rosa-sinensis, Chinese hibiscus, or rose of Sharon.

**HILERIBA**

**Effects:** A treatment for opiate addiction, though Jonathan Ott calls this “a dubious proposition.”

**Precautions:** It may also be used as an additive to ayahuasca.

**AKA:** Hederandropsa vitellina, Hederandropsa vitellina gigas, Hederandropsa vitellina vitellina, Hederandropsa vitellina vitellina var. curvicarpa, Hede
deranopsis vitellina, Hederanopsis vitellina, Hederanopsis vitellina gigas, Hederanopsis vitellina vitellina, Hederanopsis vitellina vitellina var. curvicarpa, Hederandra
donopsis vitellina, Hederandra vitellina, Hederandra vitellina gigas, Hederandra vitellina vitellina, Hederandra vitellina vitellina var. curvicarpa.

**HOLMESII**

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** One gram of bark or roots can heighten feelings of sexuality and awareness — users claim

**Precautions:** In high doses, it can cause vomiting, loss of motor coordination, convulsions, paralysis,

**HOMALOMA**

**Effects:** A pleasant, marijuana-like high accompanied by a slight feeling of drunkenness.

**Precautions:** It is used to make a mild intoxicating drink, it is sometimes also smoked.

**AKA:** Caper, Capparis spinosa, caper plant, caper tree.

**HORSECHERRY**

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** One gram of bark or roots can heighten feelings of sexuality and awareness — users claim

**Precautions:** In high doses, it can cause vomiting, loss of motor coordination, convulsions, paralysis,

**HORSECLAW**

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** One gram of bark or roots can heighten feelings of sexuality and awareness — users claim

**Precautions:** In high doses, it can cause vomiting, loss of motor coordination, convulsions, paralysis,

**HORSEDOVE**

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** One gram of bark or roots can heighten feelings of sexuality and awareness — users claim

**Precautions:** In high doses, it can cause vomiting, loss of motor coordination, convulsions, paralysis,

**HORSEPENNA**

**Effects:** Hallucinations similar to LSD, but stronger; shamans who use it claim to contact the dead. It is psychoactive.

**Dosage:** One gram of bark or roots can heighten feelings of sexuality and awareness — users claim

**Precautions:** In high doses, it can cause vomiting, loss of motor coordination, convulsions, paralysis,

**HORSETAIL**

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Precautions: It is not addictive, though large doses are toxic. Lettuce has not is somewhat of a mystery. Jonathan Ott says trace amounts of morphine have been
found in lettuce, but the morphine is not psychoactive. In contrast, bananas (which have no psychoactive ingredients whatsoever) have gained such a reputation and
Effects: The seeds are said to be psychoactive, producing a high similar to opium, but milder. Why
AKA: Lactuca sativa, Lactuca virosa.
medicinal uses, especially as a treatment for skin diseases, allergies, nervous problems, and
Precautions: The ergot, eaten whole, can interfere with blood flow, and cause muscle spasms,
KEULI
AKA: Gomortega keule, hualhual.
KEULE
Kawang
AKA: Castanopsis acuminatissima.
Effects: The seeds of this tree, when steamed and eaten, are said to induce an altered state.
Kawang is often called "mescal beans" and "mescal seeds." It contains a substance called
Precautions: Overuse can cause insomnia, nervousness, and loss of sex drive. Studies with animals
KAWANG
KETAMINE
Effects: Produces a vivid 30- to 45-minute LSD-like experience characterized by a dream-like state
AKA: Green, Ketaject, Ketalar, ketamine hydrochloride, special K, super K, vitamin K, Vetalar.

KHAT
AKA: Catha edulis, chat, kat, miraa, qat, quat, tchat, tschat.

KAVA
AKA: Gratom, kutum, mambog, Mitragyna speciosa.
Dosage: The leaves are roasted and pulverized and mixed with tobacco that is then used as a snuff.

KHUMEDăN
AKA: Gomortega keule, hualhual.
KEULE

KOBU
AKA: Bissy nut, caffeine nut, Cola nitida, cola nut, cola vera, guru nut.
Effects: The bark of this tree causes a dream-like state when smoked with tobacco.
Precautions: Overuse can cause insomnia, nervousness, and loss of sex drive. Studies with animals

KRIBI
Effects: An Ethiopian shrub that is said to produce bliss, clarity of thought, euphoria, excessive
AKA: Catha edulis, chat, kat, miraa, qat, quat, tchat, tschat.

KILLIBI
AKA: Capparis.
KARA

KANNA
AKA: Sceletium tortuosum, Sceletium expansum, Sceletium tortuosum, Sclerocarya caffra, Sclerocarya

KANGA
AKA: Uncaria tomentosa or "cat's claw."

KRIRA
AKA: Anacardium occidentale. "Cashew nut" is a less common term.

KANI
AKA: Curuba rhizophora. The Kani tribes of the Mangamaja region are recommended.

KHIANG
AKA: "Kang" in the northern Mexico as "visionary inebriants." Studies have shown that it

KIAI
AKA: Tanaecium nocturnum.

KIPER
AKA: Bursera discolor. "Wood glue" is a less common term.

KILI
Effects: Used by Indians in northern Mexico as "visionary inebriants." Studies have shown that it
AKA: Hueipatl, kieli, Solandra brevicalyx, Solandra guerrerensis, tecomaxochitl.

KOA
AKA: Ajuca, caatinga, jurema branca, Mimosa hostilis (Mimosajurema), Mimosa nigra, Mimosa

KOHUMA
AKA: Chroma mimosoideae, Chroma speciosa, Chroma thoracica, Chroma zeylanica.

KIHAI
AKA: Dicentra peregrina. The flowers of this plant are used by the Cherokee.

KIN
AKA: Kalafina canescens, Kalafina saxifraga, Kalafina tortuosa, Kalafina tortuosa var. delphinifolia.

KIHARU
AKA: "Cereus, clypeatus, corymbosus, corymbosus barbatus, corymbosus harriotii" is a less common term.

KAN
AKA: Euphorbia campylosperma. "Khan" is a less common term.

KARA
AKA: Sceletium tortuosum, Sceletium expansum, Sceletium tortuosum, Sclerocarya caffra, Sclerocarya

KLOO
AKA: Pseudolithospermum caudatum. "Klo" is a less common term.

KLA
AKA: Aechmea sphaerocephala. "Kla" is a less common term.

KILLI
Effects: The leaves, which can be smoked like a joint or chewed, and mambog refers to the thick syrup made

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seizures. It can cause orgasm problems in men and women, and erection problems in men. An
increase in prolactin may additionally contribute to the problem, though it is not clear how much.

MARIJUANA

AKA: Bhang, cannabis, Cannabis indica, Cannabis sativa, charas, dope, ganja, grass, hashish,
hemp, marihuana, marijuana, pot, reefer, weed. Native to southeastern Asia, this herb and its
derivatives are the world's most widely used psychoactive substances. Hemp, which is
processed to make paper, clothing, and rope, has been cultivated as far back as 5000 B.C.

Hashish, or hash, is the processed resin from the cannabis plant, and contains about 8 to 14 times the
THC of marijuana. Hash oil, which is produced by boiling marijuana or hashish in a solvent, contains
considerably more dangerous. “Pharmacologically, it has been used in various medical preparations
— though marijuana is not classified as a hallucinogen — visual and auditory hallucinations for one
week, memory disturbances, and depression.”

MACONHA BRAVA

AKA: Leonurus sibiricus. Effects: In Brazil, the leaves are smoked as a “marijuana substitute.” It
contains a maximum of 0.5% THC, though some specify 1%.

MACE

Precautions: The dose needed to get high is close to the toxic level, resulting in a strong hangover the
next day.

MADDI-RO-CHEE

(“Acupuncture for the Germanic Cheesy-Church”) is a hallucinogenic in the mushroom family
(Amanita muscaria) that contains the alkaloid muscarine, a parasympathomimetic agent. It
paralyzes the central nervous system and can cause hallucinations.

MADRASU-RA

AKA: Asthma weed, bladderpod, cardinal flower, emetic herb, emetic weed, gag root, Indian
LOBELIA

Effects: A mild marijuana-like high.

MAGNAHUA

AKA: Curare, Dendrocalamus asper, fistula, pipe tobacco. A spice produced from the outer
covering of the nutmeg seed, or Myristica fragrans, that is
not be longer or more intense with greater dosage. Lethal dosage is unknown, as some individuals
not be longer or more intense with greater dosage. Lethal dosage is unknown, as some individuals

MAGNOLIAOIL

Effects: Hallucinations.

MARDI-RAH

AKA: Apples of the fool, apples of the genie, devil’s testicle, European mandrake, love apple,
mandrake, or American mandrake. Both, however, are very poisonous.

Mandragora officinarum (European mandrake) is a very different plant from Podophyllum peltatum,
the snuff of the virola tree, though there are Indians in the Brazilian and Venezuelan forests
who reportedly use some species of this plant by itself.

Medications containing “Hashish” is a very different plant from Podophyllum peltatum, the snuff of the virola tree, though there are Indians in the Brazilian and Venezuelan forests
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who reportedly use some species of this plant by itself.
**Effects:** Hallucinations. Voodoo and Santeria religions. It should not be confused with deadly nightshade, or belladonna. According to legend, it has been used by witches in ancient Greece and medieval Europe, and in the though most of it is destroyed by burning. Chewing tobacco and snuff is not believed to be as average adult if applied to the skin; in fact, the nicotine in one cigar can kill at least two people, Dosage: The lethal dose is 50 mg, and just 60 to 120 mg (a drop or two) of pure nicotine can kill the increase the effects of many drugs, including Acetaminophen, caffeine, Furosemide, Glutethimide, faster than heroin injected into the arm. It is extremely addictive, and may contribute to Alzheimer’s disease, cancer, emphysema, and death. Overdose symptoms include excessive hallucinations.

**Sources:** Bell peppers, eggplant, tobacco, tomatoes.

**Addictive one.** In fact, it is one of the most addictive substances known —even more addicting than trigonophylla, Nicotiana velutina.

**NICO**

**AKA:** Trigonea trigonum, Nicotiana trigonella, Nicotiana rustica. **Nlando**

**AKA:** Tagetes lucida, tumutsali, xpuhuc, yahutli, yauhtli, ye-tumutsali, yia, yyahhitl, yyahitlm, Zaehner, in his books Mysticism Sacred and Profane and Drugs, Mysticism and Make-Believe, effects:

**Dosage:** The average lethal dose is 50 grams (dry weight), 10 to 15 grams of fresh mushrooms, or 5 to 15 mushrooms, depending on the dangerous levels; cooking will not remove or deactivate them. Aging, and senility. Mushrooms are usually sauteed before eating as, in their raw state, they may result in severe poisoning. Prolonged excessive use is said to result in permanent insanity, premature

**Effects:** Produces vivid hallucinations similar (though reportedly less intense) to LSD—beginning within a half hour and lasting three to six hours — muscular relaxation, and giddiness.

**Cono-cybe, Panaeolus, Psilocybe, and Stropharia.** They are found all over the world, but only in Mexico is it used as a hallucinogen.

**Readers should not be misled by popular books that contain misleading and erroneous information, type of drug.** It is an MAO inhibitor, and so should not be combined with any substances contraindicated for this

**PRECAUTIONS:** None of its alkaloids are known hallucinogens. It contains the alkaloid cytisine, which is highly toxic and has resulted in many deaths. Side effects include over-excitement, headache, nausea, precluding the paranoid and hostile behavior often associated with the use of other hallucinogens. It does not produce any visual hallucinations. MAY HAVE PSYCHEDELIC OR HALLUCINOGENIC EFFECTS. MAY BE USED AS A STIMULANT OR FOR OTHER MACHINES.

**MUSHROOMS AND PSYLOCYBINE**

**A** a dry seed, ground in a mill, infusion. This is the Psilocybe cubensis, sacred mushrooms.

**Effects:** A narcotic or mild psychedelic that is said to induce feelings of tranquility when smoked.

**Dosage:** No more than one-quarter to one-half bean, which is roasted, crushed, chewed, and

**MESCAL BEAN**

**AKA:** Mescalina, Mezcal, Mexican Peyote, San Pedro, Sapo, and Sapo de la Selva. **Peyote**

**Effects:** Hallucinations, which begin one to two hours after consumption, peak after two hours, and last for approximately twelve hours. It has been used in psychotherapy and as a treatment for opiate

**Mescaline is chemically similar to the hormone epinephrine and the neurohormone norepinephrine. It**

**Precautions:** If taken on an empty stomach, will cause severe abdominal pain.
Lycoperdon mixtecorum (gi-i-wa), Sderoderma citrina (earth ball).

Effects: Contains the potent hallucinogen DMT. It is often added to ayahuasca. There are numerous (amirucapanga, chacruna, sami ruca).

Precautions: The seeds differ from mescal beans and colorines only in the fact that they have a touch in the roots, hyoscyamine and scopolamine as well, the latter of which can cause excitement and problems.

AKA: Rhynchosia longiraceomosa, Rhynchosia phaseolides, Rhynchosia pyramidalis.

DOSAGE: The usual dose is 6 to 12 dried buttons, which are moistened just before eating or, less often be passed off as mescaline or DMT. There are reportedly some 30 analogues of PCP available. Purity can range from high (white crystals) to low (moist and yellowish) and, on the street, it can feel the nicotine. Generally, only a tablespoon of leaves and stems are needed to achieve its effects.

Precautions: If taken by those with any borderline psychosis, it has a greater chance of worsening the condition than any other drug, including LSD or mescaline.

APAP: A psychoactive cactus: Research is needed to uncover its psychoactive components and primary manifestations being excitability, restlessness, and violent behavior. Another species of "Karuka madness," by eating the nuts of this plant. This altered state can last 12 hours, its preoccupation with death, and impairment of various mental functions (thinking, concentration, sensory input organization, learning, and memory). It may take at least a day before a person feels.

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Dosage: The usual dose is 6 to 12 dried buttons, which are moistened just before eating or, less

Precautions: It should be avoided by anyone with liver problems.

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Precautions: It should be avoided by anyone with liver problems.
tremors, sweating, and pupil dilation. An overdose can lead to a bad trip. STP produces a trip that lasts up to 30 hours, and DOB may produce similar results. Associated with mescaline. Reports of STP trips lasting several days may be apocryphal, though DOI is said to be harmful. Its supposed hallucinogenic effects are disputed by research. Sinicuichi can also be used to induce a mild state of intoxication. It is referred to other, unrelated plants. Effects: Intoxication and hallucinations — including the sensation of flight — which are due to some psychoactive ingredient appears to be an as-yet-unidentified alkaloid. Effects: A peyote-like high. SAN PEDRO Effects: Contains the alkaloid mescaline, which is a hallucinogen. Though, like peyote, it is a cactus, San Pedro produces a less stimulating, more tranquil high, reportedly }}}
Effects: A Chinese vine said to induce visions and “communication with spirits.”

AKA: Caesalpinia sepiaria.

YUN-SHIH
Dosage: 5 to 20 drops.

Precautions: Side effects include epileptic-like convulsions and severe damage to the liver and kidneys.

Effects: The oil, when taken orally, can induce hallucinations.

WILD FENNEL
AKA: Leonotis leonurus.

Effects: Hallucinations and narcosis.

WILD DAGGA

Effects: An intoxication similar to opium. The dried leaves are used as a tobacco substitute.

AKA: Arctostaphylos uva-ursi, bear-berry, kinnikinik, kinnikinnick.

UVA-URSI
Dosage: It is active in the range of 12 to 24 mg. It is sometimes combined with MDMA.

Precautions: The term kinnikinnick can also refer to other plants and to mixtures of these plants.

Effects: One of the richest sources of DMT (up to 0.22 percent).

WATER LILY

Effects: Bark extracts of this Ecuadorian tree are used by hunters to sharpen the senses; there is good evidence to suggest that it contains psychoactive alkaloids.

AKA: Tabernaemontana sananho.

TSICTA
Dosage: 30 to 180 mg.

Precautions: Some initial unpleasant effects.

Effects: Ingestion of 1 mg of the alkaloid 5-MeO-DMT resulted in a high that lasts 30 minutes and lasts twenty. Parenteral injections of 5 to 10 mg were also found to produce results. The venom can remain potent for two years.

TOAD
AKA: Bufo alvarius, Bufo marinus, Colorado River toad, Sonoran Desert toad.

Effects: The Sonoran Desert toad of Arizona produces large amounts of 5-MeO-DMT in its venom glands — which can induce a gentle high when dried or smoked — along with small amounts of the narcotic bufotenine, an alkaloid that is also found in some mushrooms and plants and which produces long-lasting effects.

AKA: Tabernaemontana sananho.

TUPA
Effects: The dried leaves are smoked by the Mapuche Indians of Chile as a narcotic, and by some North American Indians as an ingredient in love magic. None of the chemicals known to exist in tupa are hallucinogenic, though they may have a nicotine-like effect.

AKA: Lobelia tupa, tabaco del diablo.

TURKESTAN MINT
Effects: The fumes of the latex from this tree is said to be psychoactive. Some Indians of South America use it along with tobacco in shamanistic rituals.

AKA: Helicostylis pedunculata, Helicostylis tomentosa.

TAKINI
Effects: Used as a folk medicine and narcotic in southern Chile. It is not known whether it induces hallucinations or contains any further psychoactive properties.

AKA: Borrachero de paramo, chapico, Desfontainia hookeri, Desfontainia spinos, michai bianco, trautrau.

TAIQUE
Effects: Bark extracts of this tree contain a hallucinogenic substance. The leaves and stems are boiled in water to make a tea.

AKA: Borrachero de paramo, chapico, Desfontainia hookeri, Desfontainia spinos, michai bianco, trautrau.

TAGLLI
Effects: Said to induce hallucinations, though it contains andromedotoxin and arbutin as its active ingredients, neither of which is hallucinogenic.

AKA: Brugmansia suaveolens, Datura suaveolens, Datura stramonium, moon nut, snake root, devil nut.

TABA
Effects: The indigenous name for the black bean. It has a mild effect when used as a replacement for coffee.

AKA: Phaseolus vulgaris, black bean.

TAMAHU
Effects: Oral doses of 10 mg can produce hallucinations.

AKA: Trichilia macrobotrya.

TAMARIND
Effects: The fleshy mass is said to be psychoactive.

AKA: Tamarindus indica.

TAMARINDDOODHAM
Effects: The fleshy mass is said to be psychoactive.

AKA: Tamarindus indica.

TAPUY
Effects: The fleshy mass is said to be psychoactive.

AKA: Tamarindus indica.

TAMUX
Effects: The fleshy mass is said to be psychoactive.

AKA: Tamarindus indica.

THABO
Effects: The fleshy mass is said to be psychoactive.

AKA: Tamarindus indica.

THAMAR
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AKA: Tamarindus indica.

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Effects: Used as a folk medicine and narcotic in southern Chile. It is not known whether it induces hallucinations or contains any further psychoactive properties.

AKA: Borrachero de paramo, chapico, Desfontainia hookeri, Desfontainia spinos, michai bianco, trautrau.

TARACÁ
Effects: Bark extracts of this tree contain a hallucinogenic substance. The leaves and stems are boiled in water to make a tea.

AKA: Helicostylis pedunculata, Helicostylis tomentosa.

TAKINI
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AKA: Aricept.

substitutes, or high potassium/low sodium foods can increase blood potassium; Lovastatin may cause kidney damage; potassium-sparing diuretics, Enalapril, Lisinopril, potassium supplements, salt Tacrolimus, Tiopronin, Tobramycin, Trimethoprim-Sulfamethoxazole, or medicines toxic to the

Clarithromycin, Danazol, Diltiazem, potassium-sparing diuretics, Erythromycin, estrogens, and milk may render it unpalatable. It is consumed immediately after mixing, and more juice should

symptoms include wheezing and shortness of breath, seizures, and convulsions. The effects of

pains, visual disturbances, and weight loss. Use of cyclosporine becomes life-threatening if the

difficulties, intestinal bleeding, constipation, pancreas inflammation, night sweats, chest pain, joint

diarrhea, nausea, vomiting, reduction of white blood cells, sinus inflammation, male breasts that are

Common side effects include kidney toxicity, gum inflammation and growth, bloody urine, jaundice,

with adrenal corticosteroid drugs. It should not be taken by anyone with chicken pox or herpes zoster.

Effects: It has been found to cause neurons to grow new fibers that connect to other brain cells, which

An immune-suppressing drug used to prevent transplanted organs from being rejected.

BROMOCRIPTINE


BENACTYZINE

It can lead to a decreased tolerance for alcohol. When taken with cocaine, the effects of

be enhanced by other anti-Parkinson drugs. The effects of both drugs can be enhanced when

There is evidence that bromocriptine may be addictive.

itching, vomiting, irregular heartbeat, flushing of the face, blurred vision, muscle twitches, dark or

months (including dental surgery) requiring general or spinal anesthesia. For those over 60, adverse

The possibility of stomach ulcers and/or bleeding increases when it is taken with adrenal

drugs are enhanced when aspirin is combined with other anti-coagulants, penicillin, or Ticlopidine.

Ethacrynic acid, Furosemide, Para-aminosalicylic acid, Salicylates, and large doses of vitamin C.

Any product containing aspirin that gives off a strong vinegar odor should be discarded immediately,

recovery from injury or illness; experts strongly recommend that this combination be avoided.

Aspirin should be taken with food, milk, or water to reduce the risk of upset stomach or bleeding.

Aspirin is not a substitute for any anti-Parkinson drugs. It may be taken with other anti-Parkinson drugs

in small, non-medicated form. It can cause severe damage in high doses. It can change the way foods

A cold is a viral infection of the upper part of the respiratory tract. It is caused by a variety of viruses.

Acute rhinitis and pharyngitis often accompany the cold and can be relieved with medications.

Sodium salicylate as well as buffered aspirin effervescent tablets should not be taken within thirty

Chapter 11

Medications

Aspirin is an over-the-counter pain reliever. It is sold as a single drug under the name

Acetaminophen can be taken to relieve the pain and fever of a cold. It is used with care to prevent

but should only be used short term for very short-term relief. It can be taken with other cold

Phenacetin is used to relieve pain and reduce fever. It is not used as a single medication, but it is

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A precursor of the neurotransmitter dopamine, L-dopa is an amino acid found naturally in the body, AKA: Larodopa, levodopa, Lopar, L-3,4 dihydroxyphenylalanine.

Dosage: A subcutaneous injection of 8 million units every other day.

There are no known food or drug interactions.

Overdose symptoms are not known, but may be more severe manifestations of the above side effects.

MULBERROIDONE

AKA: Mulberroide.

A compound used in Chinese medicine to treat asthma, bronchitis, coughing, colds, fever, and kidney disorders.

Effects: Mulberroide is a powerful anti-oxidant; and it may act as a sexual aid by increasing the levels of the neurotransmitters norepinephrine and dopamine. It may help in weight loss by suppressing the appetite and stimulating the release of growth hormone; it is a weak muscle relaxant and may be useful in treating spasticity.

Food Sources: Velvet beans.

MUTERCEINE

AKA: Muterceine.

A natural product isolated from the flower heads of Mutera lucida. It is a weak diuretic and may be useful in treating hypertension.

Effects: It may reverse or even prevent the deterioration of the body generally associated with aging (due to its antioxidant properties). It is also known for its ability to stimulate the growth of new blood vessels and to increase the metabolism of fatty acids.

Food Sources: Mutera lucida flowers.

METHYLPHENIDATE

AKA: MPH, Ritalin.

A stimulant drug used to treat ADHD and narcolepsy.

Effects: It increases the availability of acetylcholine in the brain, improving memory in Alzheimer's disease.

Dosage: The dosage range for MPH is 5 to 40 mg per day, with the recommended starting dose being 5 mg once or twice a day. The dosage can be increased by increments of 5 mg every 1 to 2 weeks as tolerated.

Possible side effects include nervousness, insomnia (which are usually controlled by the patient or family), tremors, headache, dizziness, drowsiness, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, insomnia, 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irregular heartbeat, hyperactive reflexes, cold or clammy skin, chest pain, agitation, fainting, seizures, pressure, difficulty in opening the mouth, muscle spasms in the neck and heel, sweating, fast and symptoms (which can occur in doses of more than 10 mg/day) include high (and possibly fatal) blood memory, and uncontrolled body movements. Life-threatening symptoms include severe chest pain, urination. Rare side effects include weight loss, heartburn, jaw clenching or teeth gnashing, impaired constipation, anxiety, tiredness, eyelid spasms, unpleasant tastes, blurred vision, leg pain, ringing in Common side effects include increased sensitivity to ultra-violet rays from the sun, mood changes, undertaken while under the effects of the drug.

Precautions: While some studies show dramatic improvements in those with Alzheimer's, others have Effects: It can help slow the progress of Alzheimer's to a moderate degree by protecting the brain cells from the damaging effects of oxygen. It also benefits memory, attention, and reaction times in

AKA: Cuprimine, Depen. Effects: Removes heavy metals from the body.

Common side effects include trouble with swallowing or speaking, profuse sweating, stiffness or

Precautions: It should not be taken by those who are allergic to it. It may be dangerous for individuals with liver or kidney disease,

Effects: It is believed to improve short-term memory by about 20 percent in patients taking the drug. A drug used in the treatment of schizophrenia and psychotic disorders.

Dosage: For brain-boosting effects, 18.75 to 75 mg/day is said to provide 6 to 12 hours of mental stimulation accompanied by

Common side effects include loss of appetite, depression, drowsiness, dizziness, hallucinations, regular liver function tests are recommended.

Precautions: Releases vasopressin in the body, which could result in a depletion and feelings of

Effects: Increases the level of nor-epinephrine in the synapses of the brain, creating greater nerve enhancement, the recommended dosage is 60 mg in two divided doses.

Precautions: It should not be taken by those who are sensitive or allergic to it, or who have very low

Effects: Prevents the constriction of blood vessels, which increases the flow of blood in the brain and

Precautions: Nimodipine should not be taken concomitantly with any of the following: Phenobarbital, penicillamine (which can be enhanced when combined with alcohol, cocaine, or marijuana, and the effects (and possible toxicity) of Nimodipine can be enhanced by antiarrhythmics, Betaxolol eye drops, and various other drugs that may affect blood pressure or heart rate. It is given in divided doses, 12.5 to 25 mg/day, not to exceed 75 mg/day, with or without food. Common side effects include flushing, dizziness, headache, irritability, nausea, rash, insomnia, and stomachache. Rare symptoms include

Indications: Nimodipine is used to treat severe headache, angina, and high blood pressure. It is used preventively following a stroke, though with irreversible neurological damage, Nimodipine may be of some help after a stroke; however, it is probably the only calcium-channel blocker not used for angina or high

Side effects commonly occur with Nimodipine therapy, including dizziness, headache, sleep disturbances, and

Although some studies claim Nimodipine can lead to dangerously low blood pressure when combined with alcohol, a possible high levels of potassium in the blood; with anti-hypertensives, it can lead to changes in blood

Dosing: Usually, 50 to 75 mg/day is said to provide 6 to 12 hours of mental stimulation. For brain-boosting effects, 18.75 to 75 mg/day is said to provide 6 to 12 hours of mental stimulation accompanied by

Co-Enzyme Q10 is used for energy and in pre-clinical research to prevent cell damage.
coma, vivid dreams, nightmares, insomnia, restlessness, weakness, drowsiness, flushing of the skin,
convulsions, incoherence, confusion, severe headache, high fever, heart attack, shock, excitement,
overstimulation, irritability, anxiety, and muscle spasms in the face.

It should not be taken with any foods that contain the enzyme tyramine — avocados, bananas, figs,
and raisins; cheese; beer (including nonalcoholic beer), wine, and liquors; yeast extracts, bean pods,
bean curd, fava beans, miso soup, or soy sauce; pickled or smoked fish, meat, or poultry; fermented
sausage (summer sausage, salami, pepperoni); bologna; liver; overripe fruit — chocolate, or caffeine,
as it could result in severe toxicity or death. Mark Mayell, however, insists that, since it only inhibits
MAO-B and not MAO-A, it avoids this dangerous interaction. It should not be taken with any over-
the-counter medications such as cough and cold medications, laxatives, antacids, diet pills, nose
drops, or vitamins without consulting a physician first.

There is an increased risk of mental instability and, possibly, death when combined with fluoxetine
(there should be at least a five-week span between the time one drug is stopped and the other is
taken). When taken with levodopa, there is a greater risk of side effects. With Meperidine (Demerol)
and other MAO inhibitors, there could be a severe drop in blood pressure — as well as potentially
fatal reactions — and with narcotics, there could be a toxic interaction that may result in seizures,
coma, or death. With Sertraline, an increased depressive effect may result. With Sinemet (a
combination of Carbidiopa and levodopa), there could be an increase in levodopa's side effects. It
should not be combined with Milacemide, opiates, yohimbe, or yohimbine. The effects when
combined with Sumatriptan are unknown. Combined with marijuana or tobacco, it could result in a
rapid heart rate and, with cocaine, a rapid heart rate and high blood pressure.

Dosage: Smart drug users prefer the liquid form to the pill because it is easier to calibrate into smaller
doses and is more readily absorbed into the body. For Parkinson's, the usual dose is 5 mg with
breakfast and lunch, which may be enough to produce feelings of well-being and increased energy in
the average person. Dr. Jozsef Knoll, who developed selegiline, recommends 10 to 15 mg/week for
the average healthy person age 45 and over. Even less may be effective, especially if taken with
vitamin B-6 and phenylalanine. Ward Dean, M.D., et al., state that some individuals have taken up to
60 mg for three weeks with no significant side effects. Discovery Experimental and Development,
one manufacturer of selegiline, recommends the following dosages:

<table>
<thead>
<tr>
<th>Age</th>
<th>Dosage</th>
</tr>
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<tbody>
<tr>
<td>30-35</td>
<td>1 mg twice a week</td>
</tr>
<tr>
<td>35-40</td>
<td>1 mg every other day</td>
</tr>
<tr>
<td>40-45</td>
<td>1 mg/day</td>
</tr>
<tr>
<td>45-50</td>
<td>2 mg/day</td>
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<tr>
<td>50-55</td>
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<tr>
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<tr>
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<td>9 mg/day</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

Enzyme: That enzyme presents the human form to be a second oxidant in many forms and a more
readily derived into the body. The phosphatase on that element to be Tyrosine with addition of
phenylalanine, the enzyme can be inactivated by blocking with the methyl group of the phenylalanine.
With other MAO inhibitors, the main enzyme is acetylcholinesterase, which is also inhibited by
selegiline. When this enzyme is inhibited, the normal concentration of acetylcholine is reduced, and
its breakdown is increased, leading to a decrease in the concentration of acetylcholine in the
brain. This decrease in acetylcholine concentration is thought to contribute to the cognitive deficits
associated with Alzheimer's disease.
**Nootropics**

Nootropics is a term used by proponents of smart drugs to describe medical drugs and nutritional supplements that have a positive effect on brain function.

**CHAPTER 12**

**Precautions:** Other researchers have been unable to duplicate discoverer Ana Asian’s positive results; composed of choline and acetylcholine, the Gerovital product DEAE is an antidepressant.

**Gerovital**

**GEROVITAL**

**Effects:** May improve memory by promoting better utilization of oxygen in the brain. It is an antidote to the effects of aging and stress in the central nervous system.

**Precautions:** Centrophenoxine may be dangerous to those who suffer from severe hypertension (high blood pressure); convulsions or involuntary movements of the muscles, including the eyes; rapid heartbeat and other symptoms of heart disease; loss of conscience or sleepiness; and those who have low blood pressure.

**BEMEGRIDE**

**Precautions:** Causes convulsions.

**Effects:** May increase learning ability and slow the advance of senility.

**ETIRACETAM**

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**DMSO**

DMSO is a common solvent used in various pharmaceutical preparations and is often used as a treatment for pain and inflammation. It is also a common solvent for many medications, including those used to treat burns, wounds, and infections. It is not approved for use in humans, but is widely used for its pain-relieving and anti-inflammatory properties.

**Precautions:** Causes convulsions.

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**BD**

**Precautions:** Toxicity and side effects seem minimal, but it has not been adequately tested on humans as yet.

**Effects:** Experiences a range of effects, including three deaths. Side effects include dangerously low heart rate and breathing, vomiting, seizures, unconsciousness, and coma.

**POET**

POET is a brand name for a medication that contains pyridostigmine bromide. It is used to treat myasthenia gravis, a rare condition that causes weakness and fatigability in the muscles.

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**DIAZODIMETHANOL**

Diazodimethanol is a chemical compound that is used in various industries as a solvent and as a raw material for the production of other compounds. It has a number of properties that make it useful in these applications, including its ability to dissolve a wide range of substances and its relatively low cost.

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A metabolic brain-enhancer.

**NAFTIDROFURYL**

A compound employed by scientists in the laboratory, brain-derived factor demonstrates potent anti-aggregating properties in normal human platelet aggregation in vitro. It is not combined with any MAO-B inhibitor drug, such as deprenyl, as it may have a negative effect on disorientation.

**Precautions:** Possible side effects include elevated liver enzymes, nausea, diarrhea, and headaches. Research needs to be done.

**AKA:** Methisprinol.

Effects: Assists the brain in certain key functions relating to memory formation and promotes RNA free-radical damage, keeps a proper balance of several major neurotransmitters in the brain, improves the oxygen supply to the brain, increases brain cell metabolism, protects the brain from hypoxia, decreases the development of age pigment (lipofuscin) in the brain, protects brain cells from free-radical damage, improves the blood supply to the brain, improves brain cell metabolism, and promotes RNA synthesis. It may also increase the levels of some transmitters in the brain and may promote the growth of some dendrite nerve fibers. Some obscure French studies done in the 1980s convinced of its efficacy. It is rather expensive.

Dosage: The recommended dosage in the U.S. is 3 mg/day; in Europe, it is 9 mg/day in three divided doses. It could greatly intensify the effect of caffeine, cause an excessive drop in blood pressure when combined with other ergot preparations or sympathomimetics, it may result in a reduced ability of the body to adjust to cold temperatures. Common symptoms are tingling fingers, and blurred vision. Rare symptoms include fainting, rash, nausea, vomiting, stomach cramps, diarrhea, and a drop in blood pressure, blurred vision, weakness, collapse, coma, and amnesia. Many doctors are not convinced of its efficacy. It is rather expensive.

**K.H.3**

A procaine formula similar to Gerovital and Vitacel, it comes in gelatin capsule form, where it is claimed to be an aphrodisiac and to reduce the severity of some AIDS symptoms.

**Effects:** Has been claimed to be an “all-purpose brain booster,” as it improves blood flow to the brain, increases memory, learning, intelligence, and recall. It may also increase the levels of some transmitters in the brain and may promote the growth of some dendrite nerve fibers. Some obscure French studies done in the 1980s convinced of its efficacy. It is rather expensive.

Dosage: It is not taken by individuals who are allergic to ergot or any of its derivatives, who suffer from any kind of psychosis, whose heartbeat is less than 60 beats per minute, or whose systolic blood pressure is below 100 mm Hg. It could greatly intensify the effect of caffeine, cause an excessive drop in blood pressure when combined with other ergot preparations or sympathomimetics, it may result in a reduced ability of the body to adjust to cold temperatures. Common symptoms are tingling fingers, and blurred vision. Rare symptoms include fainting, rash, nausea, vomiting, stomach cramps, diarrhea, and a drop in blood pressure, blurred vision, weakness, collapse, coma, and amnesia. Many doctors are not convinced of its efficacy. It is rather expensive.

**Derivatives**

Hydergine is one of a class of drugs called ergoloid mesylates, which are a combination of three derivatives. It is not combined with any MAO-B inhibitor drug, such as deprenyl, as it may have a negative effect on disorientation.

**Precautions:** It is not taken by those allergic to procaine or who are taking sulfa drugs or MAO inhibitors. The precautions that apply to Gerovital also apply to K.H.3.

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**GABA**

GABA is a neurotransmitter commonly found in the central nervous system, which is known for its inhibitory effects on neural activity, and is thought to play a role in the regulation of movement and balance, as well as in the modulation of pain and anxiety. It is also involved in the regulation of sleep and wakefulness, and has been implicated in the pathophysiology of a wide range of neurological disorders, including epilepsy, movement disorders, and psychiatric conditions such as anxiety and depression.

**White powder/GHB**

Illicit GHB invariably contains dangerous — even toxic — impurities. Pure GHB powder has a salty/tart taste. It is not combined with any MAO-B inhibitor drug, such as deprenyl, as it may have a negative effect on disorientation.

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The growth of more cholinergic receptors in the brain. It has been used in the treatment of dyslexia, within the brain; improves memory, alertness, and some kinds of learning in normal humans.


Precautions: Causes convulsions. Phenacemide, it could result in an increased risk of paranoia; and when taken with Valproic acid, it could also result in an excessive drop in blood pressure; when taken with Omeprazole, there could be a delay in the excretion of phenytoin with a resultant excess remaining in the blood; when taken with Meperidine, it can decrease the absorption of phenytoin from the gastrointestinal tract; when taken with Lithium, it can increase the toxicity of the latter drug; when taken with MAO inhibitors, it can cause an increased risk of hypertension; when taken with gold compounds; and Leucovorin could counteract the effects of phenytoin. When taken with cocaine or oral contraceptives; corticosteroid drugs could hide any symptoms of an infection, while at the same time, there could be a greater chance of bone disease when taken with carbonic anhydrase inhibitors; there could be an increase in arterial pressure when taken with Acetaminophen. The anticonvulsant dose may need to be adjusted when taken with Dopamine, levodopa, Levonorgestrel, Mebendazole, Phenothiazine antipsychotic medicines, or oral Theophylline drugs, and Valproic Acid. Phenytoin can interact unpredictably with Clonazepam, Disopyramide, Doxycycline, Furosemide, Haloperidol, Hypoglycemics, Itraconazole, Methadone, NRLA-426, Phenothiazine antipsychotic medicines, or oral Theophylline, and Valproic Acid. The anticonvulsant effect can be enhanced when taken in combination with Cimetidine, Ibuprofen, Metro-nidazole, Miconazole, Molindone, Nizatidine, Omeprazole, Antacids, salicylate drugs such as aspirin, benzodiazopine tranquilizers and sedatives, Chlorphramine, Nicardipine, Nimodipine, Oxyphenbutazone, Para-aminosalicylic acid (PAS), Phenylalanine, Thalidomide, Theophylline drugs, and Valproic Acid. Phenytoin can amplify the effects of Estrogen, Griseofulvin, Methotrexate, NDD-094, and Valproic Acid. There is an increased drop in blood pressure when taken with alcohol, calcium channel blockers, and beta-blockers. It is used to treat and prevent seizures. It is not known whether this medicine is safe to use during pregnancy. It is necessary to take this medicine correctly and use it as directed. Phenytoin contains phenylhydantoin, and may increase the risk of convulsions.

Some symptoms of this medicine include: slurred speech, and staggering. There have been reports of insomnia, tremors and in some cases, liver damage. If stomach upset occurs, it should be taken with meals. Long-term effects may be jaundice, and sore throat. Other symptoms cited by some sources include anemia, balding, chest pain, dizziness, Dr.Images, hallucinations, headaches, insomnia, muscle twitches, rash, slurred speech, staggering, vision blurred. Common side effects include constipation; mild dizziness; drowsiness; gums that are bleeding, irritation, and may weaken the absorption of other medicines. The side effects may be more severe and frequent for those over age 60. Prolonged use can weaken the body’s ability to fight infections and can cause other effects. Phenytoin is used to treat seizures. It can cause a variety of serious side effects such as: lack of alertness, impotence, abdominal pain, and constipation. There may be side effects, including nausea. Much more research needs to be done.

Effects: Stimulates theta rhythms in the brain, which are associated with periods of creative thinking, and may increase learning ability and slow the advance of senility.

Effects: It apparently stimulates the flow of information between the two hemispheres of the brain in rats and mice.

Effects: It may normalize electrical activity in the cell membranes; it can stabilize behavior by suppressing motor activity. It may be used to treat narcolepsy. There is an increased drop in blood pressure when taken with alcohol, calcium channel blockers, and beta-blockers. It is used to treat and prevent seizures. It is not known whether this medicine is safe to use during pregnancy. It is necessary to take this medicine correctly and use it as directed. Phenytoin contains phenylhydantoin, and may increase the risk of convulsions.

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common side effects include loss of appetite, changes in taste, drowsiness, eyes that are dry or
a tingling in the hands and feet, difficulty urinating, joint pain and inflammation, spasticity,
used as a “smart drug” only by those with Alzheimer’s, and even then it loses its effectiveness after
It could be hepatotoxic (toxic to the liver) and should only be taken under a physician’s guidance. It is
Precautions: It is not taken by those allergic or sensitive to Tacrine or acridine derivatives. A doctor
only drug proven to raise levels of acetylcholine in the brain.
Effects: Has a good track record for improving memory in Alzheimer’s patients, especially when
Back in the 1950’s, rice bran was used to prevent Alzheimer’s disease because it was thought that a
form of Alzheimer’s disease, enabling them to perform normal activities again.
Effects: May enhance memory and learning.
AKA: GM1 ganglioside.
RN-13
AKA: 2-hydroxytriethylammonium ribonucleate.
Developed by Hans J. Kugler, it is a mixture of RNA from twelve organs (placenta, testes, ovaries,
RN-13 can be obtained through mail order from: Europharma, Inc., Dept. BE, 1050 S. Main, Orange,
Effects: Has a good track record for improving memory in Alzheimer’s patients, especially when
Additional precautions: It should not be taken by those with a history of high blood pressure, by
Use is discontinued by decreasing the dosage gradually over a period of two weeks, as abrupt
difficulties, convulsions, fainting, heart failure, a slow or weak pulse, cold and sweaty skin, and
numbness or tingling in the fingers and toes. Less frequent symptoms include abdominal pain, a loss
hands and feet, diarrhea, dizziness, drowsiness, a dryness of the mouth, eyes, and skin, fatigue, and
It is not taken by anyone with an allergy to any beta-adrenergic blocker; by those with hypotension,
Effects: Preliminary evidence indicates that it may prevent Alzheimer’s from progressing, and may
AKA: 2-DEA-190 (Sabeluizole).
SABELUZOLE
Effects: Like piracetam, it is derived from pyrrolidone, which is believed to enhance the nervous
RALZIRACETAM
Effects: Has a good track record for improving memory in Alzheimer’s patients, especially when
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Effects: May enhance memory and learning.
AKA: 2-hydroxytriethylammonium ribonucleate.
RN-13 can be obtained through mail order from: Europharma, Inc., Dept. BE, 1050 S. Main, Orange,
Effects: Promotes alertness, strengthens long-term memory, improves reaction time, fights fatigue,
In use in Italy as a treatment for Alzheimer’s and memory disorders.
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colonic, gallbladder irritation or stones, increased appetite, diabetes, anemia, osteoporosis, tendinitis, bursitis, abnormal dreams, speaking difficulties, loss of memory, twitching, delirium, paralysis, slow muscle movements, nerve inflammation or disease, Parkinson's-type movements, apathy, heightened sex drive, neurosis, paranoia, nosebleeds, chest congestion, asthma, rapid breathing, respiratory infection, acne, hair loss, skin rash, eczema, dry skin, herpes zoster (shingles), psoriasis, skin inflammation, cysts, furuncles, cold sores, herpes infections, blood and pus in the urine, kidney stones and infections, sugar in the urine, frequent urination, urinating at night, cystitis, vaginal bleeding, genital itching, breast pain, impotence, and prostate cancer. Rare side effects include heat exhaustion, blood infection, very abnormal heart rhythms, bowel obstruction, duodenal ulcer, convulsions, lack of coordination, thyroid changes, a reduction in white blood cell and platelet counts, muscle disease, some loss of the senses (particularly touch), severe uncontrolled movements of the face, loss of muscle tone, changes in liver function (resulting in yellow skin or eyes, changes in stool color), inflammation of the brain and possibly the central nervous system, Bell's palsy, suicidal thoughts, hysteria, psychosis, vomiting blood, fluid in the lungs, lung cancer, sudden choking, skin peeling, oily skin, skin ulcers, skin cancer, melanoma, bladder or kidney tumors, kidney failure, urinary obstruction, breast cancer, ovarian cancer, inflammation of the male reproductive tract, blindness, drooping or inflamed eyelids, and disturbances or inflammation of the inner ear. Overdose symptoms include a decrease in blood pressure, collapse, convulsions, decreased heartbeat, muscle weakness (leading to respiratory failure and death), severe nausea and vomiting, increased salivation, and heavy sweating.

Cimetidine can increase the amount of Tacrine in the blood, and tobacco can increase the rate at which it is broken down in the liver. Theophylline could intensify the effect of this drug, and anticholinergics could diminish the effect of this drug. It could also strengthen the effects of muscle relaxants during surgery.

Tacrine is taken at least one hour before or two hours after eating.

Dosage: Subjects with Alzheimer's showed the best improvement when given doses of 120 to 160 mg/day, but improvements in memory and the ability to think and reason lasted for only 24 weeks, after which the decline in mental abilities resumed.

2-MEA
AKA: Cysteamine, 2-mercapto-ethylamine.
Effects: An antioxidant. It bolsters the immune system and may increase life span. It is used as a treatment for radiation sickness in the former Soviet Union, and can remove heavy metals such as cadmium, lead, and mercury from the body.
Precautions: May actually shorten the life span if a very high dosage is combined with a very high dosage of vitamin E.
Dosage: John Mann recommends 200 mg/day for life extension.

VINCAMINE
AKA: Oxicebral.
Made from an extract of the periwinkle plant.
Effects: A vasodilator (improves blood flow to the brain and enhances the brain's utilization of oxygen). Users claim it improves memory and cognition, but sufficient scientific research is lacking for normal, healthy people.
Precautions: It may cause a reduction in white corpuscles and a degeneration of muscle tissue. In rare cases, it causes gastrointestinal problems.
Dosage: 60 mg/day in two divided doses.

VINPOCETINE
AKA: Cavinton.
A close relative of vincamine believed to elicit more benefits and fewer side effects.
Effects: Reportedly a strong enhancer of memory and concentration. It improves the brain's metabolism by increasing the blood flow, speeding up the rate at which ATP is produced by the brain cells, and improving the use of glucose and oxygen in the brain. It is particularly effective for disorders caused by poor or impaired circulation, such as stroke, headaches, recurring dizziness, macular degeneration, and certain ear problems.
Precautions: No toxicity or contraindications. Side effects, which include dry mouth, hypotension, tachycardia, and weakness, are rare.
Dosage: 5 to 10 mg/day. It takes a year for the drug to reach its peak efficiency.

VITACEL 3
The tablet form of GH-3, it has the active PEN ingredient as Gerovital. Vitaeel 4 has the addition of bee propolis for its antibacterial and antiviral qualities, and royal jelly for its high levels of vitamins B-5, B-6, and C. Vitacel 7 has replaced the bisulfite and benzoic acid with vitamin-complexing agents to prevent allergy problems; according to creator Dr. Robert Koch, this last formulation helps the procaine hydrochloride stay active in the body for several hours. Precautions: See the entries under Gerovital and Royal jelly.
**Dosage:** John Mann recommends 200 mg/day. When taken in gelatin form, it may not be fully assimilated by the body and could irritate the stomach. Mann recommends lightly warming 16 ounces of safflower oil in a skillet for several minutes, allowing it to cool for a few minutes, the oil should be put back in the fridge until needed. The oil is used within two weeks or so that it does not become oxidized. It is not used for frying.

**Precautions:** The few studies conducted have yielded contradictory results or have had flaws. It is not to be taken by those with a diseased or damaged liver, or who have had a liver test abnormal. It is considered a possible carcinogen and, for that reason, most nutritionists warn that it should be avoided. It may cause a mild dermatitis resulting from an allergic reaction, which maybe avoided if a quarter gram is taken at bedtime, with the dosage slowly increased over time. It may cause a mild dermatitis due to an allergic reaction, which maybe avoided if nutrition is adequate, particularly vitamins A and C.

**SODIUM BISULFATE**

A food additive that prevents discoloration and inhibits the growth of bacteria.

**Effects:** An anti-oxidant.

**Precautions:** It was banned by the FDA in 1968 when high doses were found to cause kidney damage problems than BHT.

**PROPYL GALLATE**

A resinous substance extracted from a variety of plants (such as the creosote bush and Guaiac gum). It was once used as a preservative in pie crusts, candy, lard, butter, ice cream, and canned whipped cream.

**Effects:** An anti-oxidant.

**Precautions:** It was banned by the FDA in 1968 when high doses were found to cause kidney damage problems than BHT.

**ETHOXYQUIN**

A food preservative.

**AKA:** Santoquin.

**Effects:** An anti-oxidant.

**Precautions:** It was banned by the FDA in 1968 when high doses were found to cause kidney damage problems than BHT.

**DDC**

A food preservative.

**AKA:** Nordihydroguaiaretic acid.

**Effects:** An anti-oxidant.

**Precautions:** Albino rats given 1000 to 4000 mg of ethoxyquin per kg of food showed signs of kidney damage. It is still in the experimental stage.

**BHA**

A food preservative added to prevent oxidation and reduce rancidity in oil-containing foods.

**Effects:** An anti-oxidant. According to Jane Brody, BHA has been proven to protect the body against certain carcinogens, to inactive some viruses, and provide some protection against carbon monoxide poisoning and radiation injury. It is more quickly metabolized by the body and less likely to cause kidney damage problems than BHT.

**Precautions:** It is considered a possible carcinogen and, for that reason, most nutritionists warn that it should be avoided. It is not to be taken by those with a diseased or damaged liver, or who have had a liver test abnormal. It is considered a possible carcinogen and, for that reason, most nutritionists warn that it should be avoided. It may cause a mild dermatitis resulting from an allergic reaction, which maybe avoided if nutrition is adequate, particularly vitamins A and C.

**BHT**

A food preservative.

**AKA:** Butylated hydroxytoluene.

**Effects:** An anti-oxidant. According to Jane Brody, BHT has been proven to protect the body against certain carcinogens, to inactive some viruses, and provide some protection against carbon monoxide poisoning and radiation injury. It works synergistically with most other anti-oxidants, but some research suggests that when both BHA and vitamin E are taken together in very high doses, their life-extension properties are severely curtailed. It can intensify the effects of barbiturates, other downers, or alcohol when combined with these drugs. There may be possible harmful interactions with steroid hormones or oral contraceptives. It may cause a mild dermatitis due to an allergic reaction, which maybe avoided if nutrition is adequate, particularly vitamins A and C.

**Precautions:** It is considered a possible carcinogen and, for that reason, most nutritionists warn that it should be avoided. It may cause a mild dermatitis due to an allergic reaction, which maybe avoided if nutrition is adequate, particularly vitamins A and C.

**STRYCHNINE**

An alkaloid found naturally in various plants, though contrary to popular opinion, not in most trees.

**Effects:** An anti-oxidant.

**Precautions:** It destroys vitamin B-1.

**THIODIPROPIONIC ACID AND DILAURYL THIODIPROPIONATE**

A food preservative.

**Effects:** Both are anti-oxidants. They are highly synergistic with anti-oxidant vitamins, especially in combination with citric acid.

**Precautions:** Precise is a conditional or provisional statement, but the more accurate statement is that certain carcinogens it is more quickly metabolized by the body and less likely to cause kidney damage problems than BHT.
With information on nearly 400 nootropic substances, ranging from ancient plant compounds to the latest pharmaceuticals, this encyclopedia provides information on the foods, vitamins, minerals, spices, and medical drugs that some people believe can improve mental performance and solve all manner of health problems, from common fatigue to insidious and debilitating diseases.

Each entry relates the alternate names and forms, the sources, and the alleged properties, side effects, and precautions of so-called “smart drugs.” A complete index allows for easy reference and help with alternate names, food and drug interactions, and symptoms.

David Group is a writer and researcher living in Buffalo, New York.