2022 Food Supplement

Mazen A. El-Sakka PhD

2021/2022

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Food Supplement

Definitions, Standards, and other Fundamentals

Food supplements are concentrated sources of nutrients or other substances with a **nutritional** or physiological effect, whose purpose is to **supplement** the **normal diet**. **Food supplements** are marketed 'in dose' form, for example as pills, tablets, capsules or liquids in measured doses etc.

FDA **regulates** both finished **dietary supplement products** and **dietary** ingredients. FDA **regulates dietary supplements** under a different set of regulations than those covering "conventional" foods and drug **products**. Under the **Dietary Supplement** Health and Education Act of 1994 (DSHEA):

Is it an Herb? A food? or A drug?

Herbal Medicine & Homeopathy: critical distinctions

Regulation and standards

How countries regulate herbal medicine

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DIETARY Objectives

1. Maintenance of a state of **positive health and optimal** performance in populations at large by maintaining **ideal body weight**.

2. Ensuring adequate **nutritional status** for **pregnant** women and **lactating** mothers.

3. Improvement of birth weights and promotion of **growth** of infants, children and adolescents to achieve their full genetic potential.

4. **Achievement of adequacy in all nutrients** and prevention of deficiency diseases.

5. **Prevention** of chronic diet-related disorders.

6. **Maintenance** of the health of the **elderly** and increasing the life expectancy.

DIETARY GUIDELINES

Right nutritional behavior and dietary choices are needed to achieve dietary goals. The following **15 dietary guidelines** provide a broad framework for appropriate action:

1. **Eat variety** of foods to ensure a balanced diet.
2. **Ensure facility of extra food** and healthcare to pregnant and lactating women.
3. Promote **exclusive breastfeeding** for six months and encourage breastfeeding till two years or as long as one can.
4. **Feed home** based semi solid foods to the infant after six months.
5. **Ensure** adequate and appropriate diets for children and adolescents, both in health and sickness.

6. Eat plenty of **vegetables** and **fruits**.
7. Ensure **moderate use of edible oils** and **animal foods** and very less use of ghee/ butter/ Vanaspati.
8. **Avoid overeating** to prevent overweight and obesity.
9. **Exercise** regularly and be physically active to maintain ideal body weight.
10. **Restrict salt** intake to minimum.
11. **Ensure the use of safe and clean foods.**
12. Adopt right pre-**cooking processes** and appropriate cooking methods.
13. Drink plenty of **water** and take beverages in moderation.
14. Minimize the use of **processed foods** rich in salt, sugar and fats.
15. Include **micronutrient-rich foods in the diets of elderly** people to enable them to be fit and active.

Fasting - The Master Remedy

Fasting refers to complete abstinence from food for a short or long period for a specific purpose. The word is derived from the old English, 'feastan' which means to fast, observe, be strict. Fasting is nature's oldest, most effective and yet least expensive method of treating disease. It is recognized as the cornerstone of natural healing.

Hippocrates, **Galen**, **Paracelsus** and many other great authorities on medicine prescribed it. Many noted modern physicians have successfully employed this system of healing in the treatment of numerous diseases. **The common cause of all diseases is the accumulation of waste and poisonous matter in the body which results from overeating.**

This extra overload the digestive and assimulative organs and clogs up the system with impurities or poisons. Digestion and elimination become slow and the functional activity of the whole system gets deranged.

By depriving the body of food for a time, the organs of elimination such as the bowels, kidneys, skin and lungs are given opportunity to eject, unrestricted, the overload of accumulated waste from the system. Thus, **fasting is just the process of purification and an effective and quick method of cure.**

It assists nature in her continuous effort to expel foreign matter and disease producing waste from the body, thereby correcting the faults of improper diet and wrong living. It also leads to regeneration of the blood as well as the repair and regeneration of the various tissues of the body.

Duration:

The duration of the fast depends upon the:

a. **Age** of the patient,
b. the nature of the **disease** and
c. the amount and type of **drugs** previously used.

The duration is important, because long periods of fasting can be dangerous if undertaken without competent professional guidance. It is, therefore, advisable to undertake a series of short fasts of two to three days and gradually increase the duration of each succeeding fast by a day or so. In Islam we have 3 days (13-14-15), every Hijri calendar or 2 days per week (Monday & Thursday) with the same target.

The period, however, should not exceed a two month of total fasting at a time. This will enable the chronically sick body to gradually and slowly eliminate toxic waste matter without seriously affecting the natural functioning of the body.

A correct mode of living and a balanced diet after the fast will restore vigor and vitality to the individual. Fasting is highly beneficial in practically all kinds of stomach and intestinal disorders and in serious conditions of the kidneys and liver.

It is a miracle cure for eczema and other skin diseases and offers the only hope of permanent cure in many cases. The various nervous disorders also respond favorably to this mode of treatment. Fasting should, however, not be restored to in every illness. In cases of diabetes, advanced stages of tuberculosis, and extreme cases of neurasthenia, long fasts will be harmful. IN most cases, however, no harm will accrue to fasting patients, provided they take rest, and are under proper professional care.

Intermittent fasting

Intermittent fasting, or intermittent calorie restriction, is an umbrella term for various diets that cycle between a period of fasting and non-fasting during a defined period.

Intermittent fasting is an eating pattern that cycles between periods of fasting and eating.
It doesn't specify which foods you should eat but rather when you should eat them. In this respect, it's not a diet in the conventional sense but more accurately described as an eating pattern.
Common intermittent fasting methods involve daily 16-hour fasts or fasting for 24 hours, twice per week.

What is Intermittent Fasting and Why Would You Do It?

Intermittent fasting is not a diet, it's a pattern of eating. It's a way of scheduling your meals so that you get the most out of them. Intermittent fasting doesn't change *what* you eat, it changes *when* you eat.

Why is it worthwhile to change when you're eating?

Well, most notably, it's a great way to get lean without going on a crazy diet or cutting your calories down to nothing. In fact, most of the time you'll try to keep your calories the same when you start intermittent fasting. (Most people eat bigger meals during a shorter time frame.) Additionally, intermittent fasting is a good way to keep muscle mass on while getting lean.

With all that said, the main reason people try intermittent fasting is to lose fat. We'll talk about how intermittent fasting leads to fat loss in a moment.

Perhaps most importantly, intermittent fasting is one of the simplest strategies we have for taking bad weight off while keeping good weight on because it requires

very little behavior change. This is a very good thing because it means intermittent fasting falls into the category of "simple enough that you'll actually do it, but meaningful enough that it will actually make a difference."

How Does Intermittent Fasting Work?

To understand how intermittent fasting leads to fat loss we first need to understand the difference between the fed state and the fasted state.

Your body is in the fed state when it is digesting and absorbing food. Typically, the fed state starts when you begin eating and lasts for three to five hours as your body digests and absorbs the food you just ate. When you are in the fed state, it's very hard for your body to burn fat because your insulin levels are high.

After that timespan, your body goes into what is known as the post–absorptive state, which is just a fancy way of saying that your body isn't processing a meal. The post–absorptive state lasts until 8 to 12 hours after your last meal, which is when you enter the fasted state. It is much easier for you body to burn fat in the fasted state because your insulin levels are low.

When you're in the fasted state your body can burn fat that has been inaccessible during the fed state.

Because we don't enter the fasted state until 12 hours after our last meal, it's rare that our bodies are in this fat burning state. This is one of the reasons why many people who start intermittent fasting will lose fat without changing what they eat, how much they eat, or how often they exercise. Fasting puts your body in a fat burning state that you rarely make it to during a normal eating schedule.

The Benefits of Intermittent Fasting

Fat loss is great, but it isn't the only benefit of fasting.

1. Intermittent fasting makes your day simpler.

I'm big on behavior change, simplicity, and reducing stress. Intermittent fasting provides additional simplicity to my life that I really enjoy. When I wake up, I don't worry about breakfast. I just grab a glass of water and start my day.

I enjoy eating and I don't mind cooking, so eating three meals a day was never a hassle for me. However, intermittent fasting allows me to eat one less meal, which also means planning one less meal, cooking one less meal, and stressing about one less meal. It makes life a bit simpler and I like that.

2. Intermittent fasting helps you live longer.

Scientists have long known that restricting calories is a way of lengthening life. From a logical standpoint, this makes sense. When you're starving, your body finds ways to extend your life.

There's just one problem: who wants to starve themselves in the name of living longer?

I don't know about you, but I'm interested in *enjoying* a long life. Starving myself doesn't sound that appetizing.

The good news is that intermittent fasting activates many of the same mechanisms for extending life as calorie restriction. In other words, you get the benefits of a longer life without the hassle of starving.

3. Intermittent fasting may reduce the risk of cancer.

This one is up for debate because there hasn't been a lot of research and experimentation done on the relationship between cancer and fasting. Early reports, however, look positive.

A study of 10 cancer patients suggests that the side effects of chemotherapy may be diminished by fasting before treatment. This finding is also supported by another study which used alternate day fasting with cancer patients and concluded that fasting before chemotherapy would result in better cure rates and fewer deaths.

Finally, this comprehensive analysis of many studies on fasting and disease has concluded that fasting appears to not only reduce the risk of cancer, but also cardiovascular disease.

4. Intermittent fasting is much easier than dieting.

The reason most diets fail isn't because we switch to the wrong foods, it's because we don't actually follow the diet over the long term. It's not a nutrition problem, it's a behavior change problem.

This is where intermittent fasting shines because it's remarkably easy to implement once you get over the idea that you need to eat all the time. For example, A study found that intermittent fasting was an effective strategy for weight loss in obese adults and concluded that "subjects quickly adapt" to an intermittent fasting routine.

I like the quote below from Dr. Michael Eades, who has tried intermittent fasting himself, on the difference between trying a diet and trying intermittent fasting.

"Diets are easy in the contemplation, difficult in the execution. Intermittent fasting is just the opposite — it's difficult in the contemplation but easy in the execution.

Most of us have contemplated going on a diet. When we find a diet that appeals to us, it seems as if it will be a breeze to do. But when we get into the nitty gritty of it, it becomes tough. For example, I stay on a low–carb diet almost all the time. But if I think about going on a low–fat diet, it looks easy. I think about bagels, whole wheat bread and jelly, mashed potatoes, corn, bananas by the dozen, etc. — all of which sound appealing. But were I to embark on such a low–fat diet I would soon tire of it and wish I could have meat and eggs. So a diet is easy in contemplation, but not so easy in the long–term execution.

Intermittent fasting is hard in the contemplation, of that there is no doubt. "You go without food for 24 hours?" people would ask, incredulously when we explained what we were doing. "I could never do that." But once started, it's a snap. No worries about what and where to eat for one or two out of the three meals per day. It's a great liberation. Your food expenditures plummet. And you're not particularly hungry. ... Although it's tough to overcome the idea of going without food, once you begin the regimen, nothing could be easier."

Methods

The best, safest and most effective method of fasting is **juice fasting**. Although the old classic form of fasting was **a pure water fast**, most of the leading authorities on fasting today agree that juice fasting is far superior to a water fast.

According to Dr. Rangar Berg, "During fasting the body burns up and excretes huge amounts of accumulated wastes. We can help this cleansing process by drinking alkaline juice instead of water while fasting.

Elimination of uric acid and other inorganic acids will be accelerated. And sugars in juices will strengthen the heart ... juice fasting is, therefore, the best form of

fasting. " Vitamins, minerals, enzymes and trace elements in fresh, raw vegetable and fruit juices are extremely beneficial in normalizing all the body processes.

All juices should be prepared from fresh fruit immediately before drinking. **Canned or frozen juices should not be used.**

A precautionary measure which must be observed in all cases of fasting is the complete emptying of the bowels at the beginning of the fast by enema so that the patient is not bothered by gas or decomposing matter formed from the excrements remaining in the body.

Enemas should be administered at least every alternate day during the fasting period.

Fresh juices may be diluted with pure water. The total liquid intake should be approximately six to eight glasses. A lot of energy is spent during the fast in the process of eliminating accumulated poisons and toxic waste materials.

It is, therefore, of utmost importance that the patients get as much physical rest and mental relaxation as possible during the fast.

Important to note that in cases of fasts in which fruit juices are taken, especially when fresh grapes, oranges or grapefruit are used exclusively, the toxic wastes enter the blood -stream rapidly, resulting in an overload of toxic matter, which affects normal bodily functions. This often results in dizzy spells, followed by diarrhoea and vomiting.

If this physical reaction persists, it is advisable to discontinue the fast and take cooked vegetables containing adequate roughage such as spinach and beets until the body functioning returns to normal.

Seriously sick persons have no desire for food and fasting comes naturally to them. The simples rule is to stop eating until the appetite returns or until one feels completely well

Benefits

There are several benefit of fasting. During a long fast, the body feeds upon its reserves. Being poor of needed nutrients, particularly of protein and fats, it will **burn and digest** its own tissues by the process of *autolysis or self-digestion*. But it will not do so indiscriminately.

The body will first decompose and burn those cells and tissues which are diseased, damaged, aged or dead. The essential tissues and vital organs, the glands, the nervous system and the brain are not damaged or digested in fasting. Here lies the secret of the effectiveness of fasting as a curative and rejuvenative method.

During fasting, the **building of new and healthy cells** is speeded up by the amino acids released from the diseased cells. The capacity of the eliminative organs, that is, lungs, liver, kidneys and the skin is greatly increased as they are relieved of the usual burden of digesting food and eliminating the resultant wastes.

They are, therefore, able to quickly eject old accumulated wastes and toxins. Fasting affords **a physiological rest to the digestive**, **assimilative and protective organs.**

As a result, the digestion of food and the utilization of nutrients is greatly improved after fasting. The fast also exerts a normalizing, stabilizing and rejuvenating effect on all the vital physiological, nervous and mental functions.

Favorable Effects of Raw Juices:

The favorable effect of raw juices in the treatment of disease is attributed to the following facts:

1. Raw juices of fruits and vegetables are extremely rich in vitamins, minerals, trace elements, enzymes and natural sugars. They exercise beneficial effect in normalizing all the body functions. They supply needed elements for the body's own healing activity and cell regeneration, thereby speeding the recovery.
2. The juices extracted from raw fruits and vegetables require no digestion and almost all their vital nutrients are assimilated directly in the bloodstream.
3. Raw juices are extremely rich in alkaline elements. This is highly beneficial in normalizing acid-alkaline balance in the blood and tissues as there is over-acidity in most conditions of ill-health.
4. Generous amounts of easily assimilable organic minerals in raw juices especially calcium, potassium and silicon help in restoring biochemical and mineral balance in the tissues and cells, thereby preventing premature ageing of cells and disease.
5. Raw juices contain certain natural medicines, vegetal hormones and antibiotics. For instance, string beans are said to contain insulin-like substance. Certain hormones needed by the pancreas to produce insulin are present in cucumber and onion juices. Fresh juices of garlic, onions, radish and tomatoes contain antibiotic substances.

Precautions

Certain precautions are, however, necessary in adopting an exclusive diet of raw juices. **Firstly**, all juices should be made **fresh immediately** before drinking. Canned and frozen juices should not be used. It will be advisable that one should have one's own juicer for extracting fresh juices. **Secondly**, only **fresh ripe** fruits and vegetables, preferably organically grown, should be used for extraction of juices. **Thirdly**, only as much juice as needed for **immediate consumption** should be extracted. Raw juices oxidize rapidly and lose their medicinal value in storage, even under refrigeration. **Fourthly**, the quality of the juices has a distinct bearing on the results obtained. In case of incomplete extraction of juices, their effective power is proportionately reduced due to the absence of the vitamins and enzymes which are left behind in fibre and the pulp. **Finally**, if juices are too sweat they should be diluted in water on 50: 50 basis or mixed with other less sweet juices. This is especially important in some specific conditions such as diabetes, hypoglycemia, arthritis and high blood pressure.

Fruit and vegetable juices may be divided into six main types; these are:

(i) Juices from **sweet fruits** such as prunes and grapes.

(ii) Juices from **sub-acid fruits** like apple, plum, pear, peach, apricot and cherry,

(iii) Juices from **acid fruits** like orange, lemon, grapefruit, strawberry and pineapple.

(iv) Juices from **vegetable fruits**, namely, tomato and cucumber.

(v) Juices from **green leafy vegetables** like cabbage, celery, lettuce, spinach, parsley and watercress.

(vi) Juices from **root vegetables** like beetroot, carrot, onion, potato and radish. Generally speaking, fruit juices stir up toxins and acids in the body, thereby stimulating the eliminative processes. Vegetable juices, on the other hand, soothe the jaded nerves and work in a much milder manner. They carry away toxic matter in a gentle way. Owing to their differing actions fruit and vegetable juices should not be used at the same time or mixed together. It is desirable to use juices individually. In any case not more than three juices should be used in any one mixture.

Rules for Apply

The following broad **rules apply when using mixtures of juices:**

1. Juices from sweet fruits may be combined with juices of sub-acid fruits, **but not** with those of acid fruits, vegetable fruits or vegetables.
2. Juices from sub-acid fruits may be combined with juices of sweet fruits, or acid fruits, **but not** with other juices.
3. Juices from acid fruits may be combined with those of sub-acid fruits or vegetable fruits, **but not** with other juices.
4. Juices from vegetable fruits may be combined with those of acid fruits or of green leafy vegetables, **but not** with other juices.
5. Juices from green leafy vegetables may be combined with those of vegetable fruits or of the root vegetable, **but not** with other juices.
6. Juices from root vegetables may be combined with those of green leafy vegetables**, but not** with other juices.

A proper selection of juices in treating a particular ailment is very essential. Thus, for instance, juices of carrot, cucumber, cabbage and other vegetables are

very valuable in asthma, arthritis and skin disease, but juice of orange aggravate their symptoms by increasing the amount of mucus.

Treatment of Diseases

Some common ailments and fruit and vegetable juices found **beneficial** in their treatment are mentioned below:

Acidity: Grapes, orange, carrot and spinach.

Acne: Grapes, pear, plum, tomato, cucumber, carrot, potato and spinach.

Allergies: Apricot, grapes, carrot, beet and spinach.

Arteriosclerosis: Grapefruit, pineapple, lemon, celery, carrot, lettuce, and spinach.

Anaemia: Apricot, prune, strawberry, red grape, beet, celery, carrot and spinach.

Arthritis: Sour cherry, pineapple, sour apple, lemon, grapefruit, cucumber, beet, carrot, lettuce and spinach.

Asthma: Apricot, lemon, pineapple, peach, carrot, radish and celery.

Bronchitis: Apricot, lemon, pineapple, peach, tomato, carrot, onion and spinach.

Bladder Ailments: Apple, apricot, lemon, cucumber, carrot, celery, parsley and watercress.

Colds: Lemon, orange, grapefruit, pineapple, carrot, onion, celery and spinach.

Constipation: Apple, pear, grapes, lemon, carrot, beet, spinach and watercress.

Colitis: Apple, apricot, pear, peach, pineapple, papaya, carrot, beet, cucumber and spinach.

Diabetes: Citrus fruits, carrot, celery, lettuce and spinach.

Diarrhea: Papaya, lemon, pineapple, carrot and celery.

Eczema: Red grapes, carrot, spinach, cucumber and beet.

Epilepsy: Red grapes, figs, carrot, celery and spinach.

Eye Disorders: Apricot, tomato, carrot, celery, parsley and spinach.

Gout: Red sour cherries, pineapple, tomato, cucumber, beet, carrot, celery and spinach.

Halitosis: Apple, grapefruit, lemon, pineapple, tomato, carrot, celery and spinach.

Headache: Grapes, lemon, carrot, lettuce and spinach.

Heart Disease: Red grapes, lemon, cucumber, carrot, beet and spinach.

High blood pressure: Grapes, orange, cucumber, carrot and beet.

Influenza: Apricot, orange, lemon, grapefruit, pineapple, carrot, onion and spinach.

Insomnia: Apple, grapes, lemon, lettuce, carrot and celery.

Jaundice: Lemon, grapes, pear, carrot, celery, spinach, beet and cucumber.

Kidney Disorders: Apple, orange, lemon, cucumber, cucumber, carrot, celery, parsley and beet.

Liver ailments: Lemon, papaya, grapes, carrot, tomato, beet and cucumber.

Menstrual Disorders: Grapes, prunes, cherry, spinach, lettuce turnips and beet.

Menopausal Symptoms: Fruits and Vegetables in season.

Neuritis: Orange, pineapple, apple, carrot and beet.

Obesity: Lemon, grapefruit, orange, cherry, pineapple, papaya, tomato, beet, cabbage, lettuce, spinach and carrot.

Piles: Lemon, orange, papaya, pineapple, carrot, spinach, turnip and watercress.

Prostate Troubles: All fruit juices in season, carrot, asparagus, lettuce and spinach.

Psoriasis: Grapes, carrot, beet, and cucumber.

Rheumatism: Grapes, orange, lemon, grapefruit, tomato, cucumber, beet, carrot and spinach.

Stomach Ulcers: Apricot, grapes, cabbage and carrot.

Sinus Trouble: Apricot, lemon, tomato, carrot, onion and radish.

Sore Throat: Apricot, grapes, lemon, pineapple, prune, tomato, carrot and parsley.

Tonsillitis: Apricot, lemon, orange, grapefruit, pineapple, carrot, spinach and radish.

Varicose Veins: Grapes, orange, plum, tomato, beetroot carrot and watercress.

When on a raw juice therapy, the prescribed juice should be drunk every three hours. One can thus take juices five to six times a day. A glass of water mixed with lemon juice and 20 to 30 grams of honey may be taken first thing in the morning on arising. Thereafter, the prescribed juice may be taken at three-hourly intervals.

The quantity of juice on each occasion may be 250 ml on the first day. This quantity may be increased by 50 ml each succeeding day till one takes 600 ml on each occasion.

The juice diet can be continued for 30 to 40 days without any ill-effects.

They will cease when the body is able to expel all toxins. After the raw juice therapy, the return to normal balanced diet should be gradual, and in stages. In the beginning, two juice meals may be replaced by milk and fruits. Then gradually juice meals may be substituted by a balanced-diet.

Breaking of Fast

The success of the fast depends largely on hos it is broken. This is the most significant phase. **The main rules** for breaking the fast are:

1. do not overeat,
2. eat slowly,
3. chew your food thoroughly; and
4. take several days for the gradual change to the normal diet.

If the transition to eating solid foods is carefully planned, there will be no discomfort or damage. The patient should also continue to take rest during the transition period. **The right food after a fast is as important and decisive for proper results as the fast itself.**

Healing Power of Colors

Chromotherapy is a method of treatment of diseases by color. It is best used as a supportive therapy along with other natural methods of preserving health such as correct diet, adequate rest and relaxation, exercise, yogic asanas and so on. According to practitioners of Chromotherapy, the cause of any disease can be traced to the lack of a particular color in the human system.

Color therapy is a technique of restoring imbalance by means of applying colored light to the body.

It was a popular method of cure even in ancient times. Some 2,500 years ago, Pythagoras applied color light therapeutically and 'color halls' were used for healing in ancient Egypt, China and India.

The pioneer of modern color therapy was Niels Finsen of Denmark. Following the discovery, in 1877, of the bactericidal action of solar ultra-violet energy, Finsen studied the possibility of assisting the healing of wounds with visible light. He subsequently used red light to inhibit the formation of smallpox scars and, in 1896, founded a Light Institute (now the Finsen Institute of Copenhagen) for the photo treatment of tuberculosis.

In 1932, Gerrard and Hessay, two Californian psychologists, scientifically established that blue light had a calming effect and red a stimulating power on human beings.

Blue and red colors are considered at the two extremes with yellow representing the midpoint. These are also the three principal colors in a rainbow.

A patient is first subjected to an examination to ascertain which color he lacks.

The deficiency is determined by observing the color of the eyeballs, nails, urine and excrement.

In cases of the **lack of red** the eyes and nails will be bluish, and the urine and excrement white or bluish. If there is a **deficiency of the blue** color, the eyes and nails will be reddish and urine and excrement yellowish or red.

Every substance on earth contains color. Even the rays cast on earth by celestial bodies contain color in the form of white light. The rays of the sun contain seven different colors violet, indigo, blue, green, yellow, orange and red.

These are natural colors which are highly beneficial to the maintenance of health and for healing diseases.

According to Dr. Babbit, a well-known authority on Chromotherapy, "sunlight is the principal curative agent in nature's laboratory and where light cannot enter, disease does. Chlorosis, anaemia, leukaemia, emaciation, muscular debility, degeneration of heart and liver, dropsical effusion, softening of bones, nervous excitability, physical deformity, stunted growth and consumption are the result of excluding oneself from the beneficial effects of sunlight. " Sunlight plays an important role in the recovery from chronic diseases.

The rays of the sun improve digestion and nutrition, quicken blood and lymph circulation and increase the elimination of impurities through the skin.

The action and effect of various colors on the body and their healing qualities are as follows:

Red: Symbolic of heat, fire and anger. It is a stimulating and energizing color. It stimulates arterial blood and brings warmth to cool extremities. Used as a general tonic, it is very valuable in the treatment of diseases like low blood pressure, rheumatism, paralysis, anaemia and advanced cases of tuberculosis.

Orange: Symbolic of prosperity and pride, orange is useful for stimulating blood supply and energizing the nerves. It is beneficial in the treatment of kidney and gall stones, hernia and appendicitis. It is also used to stimulate the milk producing action of breasts after childbirth.

Violet: Violet is beneficial in the treatment of nervous and emotional disturbances, arthritis, acute cases of consumption and insomnia.

Yellow: Associated with pleasure and happiness, yellow is laxative and diuretic. It is a stimulant to the brain, the liver and the spleen. It is also effective in the treatment of diabetes, indigestion, kidney and liver disorders, constipation, eye and throat infections, syphilis and impotence.

Purple: Purple or indigo combines the blood-warming red and the cooling antiseptic blue. It is an excellent stimulant without being an irritant. It is beneficial in the treatment of advanced stages of constipation, hydrocle, leucorrhoea, many disorders of the stomach and womb, cataract, migraine and skin disorders. It exerts a soothing effect on the eyes, ears and the nervous system.

Green: Made up of the blue and yellow, green is regarded as a color of harmony. It is a mild sedative. It is useful in the treatment of nervous conditions, hay fever, ulcers, influenza, malaria, colds, sexual disorders and cancer. It preserves and strengthens eyesight. Being highly medicinal and depressive, it is of great help in the treatment of inflammatory conditions.

Blue: Cool, soothing and sedative, blue alleviates pain, reducing bleeding and heals burns. It is beneficial in the treatment of dysentery, colic, asthma, respiratory disorders, high blood pressure and skin aberrations. IN a study at the New England State Hospital in the United States, 25 members of staff with normal blood pressure were bathed in blue light for half an hour. It resulted in universal fall in blood pressure. The blood pressure rose when red light was applied.

Methods of Treatment

There are two methods of treating diseases by color: By the application of light through different colored glasses; and by external or internal use of color-charged water.

In the first method, sheets of glass, 30 cms. X 36 cms. of the required colors are needed. These are placed at the window frames or any other convenient place in such a way that the sun's rays can pass through them and fall directly on the patient's body. The usual duration of the color treatment is 30 minutes.

In case of local application, a pane of glass can be placed in front of the diseased part so that the light passing through the glass falls on the afflicted area. At night lanterns can be used for the purpose. A single lantern can have glass panes of four different colors and the required color can be focussed on the patient or the affected parts.

In the second method, colored bottles are needed. These bottles should be cleaned and filled up to three-fourths level with fresh water, distilled water or rain water. The bottles should be corked and then placed in bright sunlight for three to four hours. After this exposure, the water is said to acquire medicinal properties and this color-charged water can be used both internally and for external applications. Wounds and ulcers can be washed with this water and it can also be used to massage the affected parts or applied as compress on them. For internal use, an adult can take 30 ml. of color-charged water as a single dose. The dose can be repeated as required.

Contraindications

There are some important contraindications to color treatment which should be borne in mind while adopting this mode of cure. For instance, the **red color** would be injurious in a naturally inflammatory condition of the system, and in case of persons with feverish and excitable temperament. If the red light is employed for too long and frequently, it may **produce dangerous fevers**. The danger can be removed by using the red light for a few minutes at a time or by placing a wet bandage over the head.

Similarly, **yellow** should not be used when the nerves are very active or irritable. Yellow or orange reddish tones may prove injurious in fevers, acute inflammations, delirium, diarrhoea, neuralgia, palpitation of the heart and any condition of over- excitement.

In cases of paralysis, chronic rheumatism, gout, consumption and in all cold, pale and inactive conditions of the system, **blue, indigo and violet** may prove too cooling and constricting and should be avoided.

Optimum Nutrition for Vigor and Vitality

Your food shall be your medicine. - Hippocrates

Diet plays a vital role in the maintenance of good health and in the prevention and cure of disease. In the words of Sir Robert McCarrison, one of the best known nutritionists, ‘The right kind of food is the most important single factor in the promotion of health; and the wrong kind of food is the most important single factor in the promotion of disease. "The human body builds up and maintains healthy cells, tissues, glands and organs only with the help of various nutrients.

The body **cannot perform any of its functions**, be they metabolic, hormonal, mental, physical or chemical, **without specific nutrients**.

The food which provides these nutrients is thus one of the most essential factors in building and maintaining health. **Nutrition, which depends on food, is also of greatest importance in the cure of disease**.

The primary cause of disease is a weakened organism or lowered resistance in the body, **arising from the adoption of a faulty nutritional pattern**. There is an elaborate healing mechanism within the body but it can perform its function only if it is abundantly supplied with all the essential nutritional factors.

It is believed that at least **45 chemical components and elements** are needed by human cells. Each of these 45 substances, called essential nutrients, must be present in adequate diets. The list of these nutrients, include **oxygen**.

The other 44 essential nutrients are classified into **six main groups**, namely **carbohydrates**, **fats**, **proteins**, **minerals**, **vitamins** and **water.**

All 45 of these nutrients are vitally important and they work together. Therefore, the absence of any of them will result in disease and eventually in death.

Research has shown that almost all varieties of disease can be produced by an under-supply of various nutrients. These nutritional deficiencies occur on account of various factors, including the intense processing and refining of foods, the time lag between the harvesting and consumption of vegetables and fruits, the chemicals used in bleaching, flavoring, coloring and preserving foods and the chemical fertilizers, fungicides insecticides and sprays used for treating the soil.

A well-balanced and correct diet is thus of utmost importance for the maintenance of good health and the healing of diseases. Such a diet, obviously should be made up of foods, which in combination would supply all the essential nutrients. I

t has been found that a diet which contains liberal quantities **of (I) seeds, nuts, and grains, (ii) vegetables and (iii) fruits**, would provide adequate amounts of all the essential nutrients.

Daily Menu

Based on what has been stated above, the daily menu of a health-building and vitalising diet should be on the following lines:

Upon arising: A glass of water mixed with the juice of a half a lemon and a teaspoon of honey, or a glass of freshly squeezed juice of any available seasonable fruit such as apple, pineapple, orange, sweet lime and grapes.

Breakfast: Fresh fruits such as apple, orange, banana, grapes, or any available seasonal fruits, a cup of butter-milk or unpasteurized milk and a handful of raw nuts or a couple of tablespoons of sunflower and pumpkin seeds.

Mid-morning snack: One apple or a banana or any other fruit.

Lunch: A bowl of freshly prepared steamed vegetables using salt, vegetable oil and butter for seasoning, one or two slices of whole grain bread or chappatis and a glass of butter-milk.

Mid-afternoon: A glass of fresh fruit or vegetable juice or any available fruit.

Dinner: A large bowl of fresh salad made up of green vegetables, such as tomatoes, carrot, cabbage, cucumber, red beet and onion with lime juice dressing, any available sprouts such as alfalfa seeds, and mung beans, a warm vegetable course, if desired, one tablespoon of fresh butter, cottage cheese or a glass of butter-milk.

The above menu is a general outline around which an individual diet can be built. It can be modified and changed to adopt to specific requirements and conditions. The menu for lunch and dinner is interchangeable. Do not drink liquids with meals. The water should be taken half an hour before meals or an hour after meals. Milk, buttermilk, and vegetable soups are foods and can be taken with meals.

Miracles of Alkalizing Diet

The human body is composed of various organs and parts, which are made up of tissues and cells. These tissues and cells are composed of **16 chemical elements**. **The balance of these chemical elements in the body is an essential factor in the maintenance of health and healing of disease.** The acid-alkaline balance plays a vital role in this balanced body chemistry.

All foods, after digestion and absorption leave either an acid or alkaline ash in the body depending on their mineral composition. The normal body chemistry is approximately **20% acid and 80% alkaline**. **This is the acid-alkaline balance.**

In normal health, the reaction of the blood is alkaline and that is essential for our physical and mental well-being.

The preponderence of alkalis in the blood is due to the fact that the products of the vital combustions taking place in the body are mostly acid in character. **Carbohydrates and fats form about nine-tenths of the normal fuel of the body.**

In normal health, this great mass of material is **converted into carbon dioxide gas and water.** Half of the remaining one-tenth fuel is **also converted into the same gas and water. This huge amount of acid is transported by the blood to the various points of discharge**, **mainly the lungs**. **By asset of alkalinity, the blood is able to transport the acid from the tissues to the discharge points**.

Acidosis: Whenever the alkalinity of the blood is reduced, even slightly, its ability to transport the carbon dioxide gets reduced. This results in the **accumulation of acid in the tissues**.

This condition is known as acidosis or **hypo-alkalinity of the blood**. Its symptoms are **hunger**, **indigestion**, **burning sensation** and **pain** in the **pharynx**, **nausea**, **vomiting**, **headache**, various **nervous disorders** and **drowsiness**.

Acidosis is the background for most diseases: Nepthritis or Bright's disease, **rheumatism**, premature old age, **arteriosclerosis**, **high blood pressure**, **skin disorders** and various degenerative diseases are traceable to this condition.

It seriously interferes with the functions of the glands and organs of the body.

It also lowers the vitality of the system, thereby increasing the danger of infectious diseases. **The main cause of acidosis or hypo-alkalinity of the blood is faulty diet**, **in which too many acid forming foods have been consumed.**

Other causes of acidosis are:

1. **Depletion of alkali reserve** due to diarrhoea, dysentery, cholera etc.,
2. **Accumulation of carbon dioxide** in asphyxia and anoxia as in circulatory and pulmonary diseases and
3. **Accumulation of acetone bodies** resulting from starvation, vomiting and diabetes millitus.

Acidosis can be prevented by maintaining a proper ratio between acid and alkaline foods in the diet. **Certain foods leave alkaline ash** and help in **maintaining the alkalinity of the food**, while others leave highly acid ash and lower the alkali reserve of the blood and tissue fluids to a very large extent.

Eggs do the same but less strongly than meats. **Cereals** of all kinds, including all sorts of breads are also acid-forming foods, though much less than meats. All **fruits**, with exceptions like plums and prunes and all green and root vegetables are highly alkaline foods and help to alkalinize the blood and other tissue fluids.

Thus, our daily diet should consist of four-fifth of alkaline-forming foods such as juicy fruits, tubers, legumes, ripe fruits, leafy and root vegetables and one fifty of acid-forming foods containing concentrated proteins and starches such as meat, fish, bread and cereals. Eating sensibly in this manner will ensure the necessary alkalinity of the food which will keep the body in perfect health. Whenever a person has acidosis, the higher the ratio of alkaline forming foods in his diet, the quicker will be the recovery.

Acids are neutralized by alkalies. It is, therefore, imperative that persons suffering from various ailments are given adequate alkaline ash foods to offset the effects of acid-forming foods and leave a safe margin of alkalinity.

The most agreeable and convenient means of alkalizing the blood are citrus fruits and fruit juices. The alkalizing value of citrus fruits are due to large percentage of alkaline salts, mainly potash, which they contain. Each pint of orange juice contains 12 grains of potassium, one of the most potent of alkalis. Lemon juice contains nine grains of the alkali to the pint and grape seven grains.

Diet in Disease

In the diet during disease, breakfast may consist of fresh fruits, lunch may comprise raw vegetables with acid and sub-acid fruits, and for dinner raw and cooked vegetables, or light starchy vegetables like beet, carrot, cauliflower, egg-plant and squashes may be taken. Sweet fruits may be added to this diet after seven days.

Foods are classified as acid-producing or alkaline-producing depending on their reaction on the urine. Calcium, magnesium, sodium and potassium present in foods contribute to the alkaline effect, while sulphur, phosphorous and chlorine

contribute to the acidic effect. Depending on the pre-dominating constituents in a particular food, it is classified as acid-forming or alkaline-forming.

The effect of food stuffs upon the alkalinity of the blood depends upon their residue which they leave behind after undergoing oxidation in the body.

It is an error to presume that because a food tastes acid, it has an acidic reaction in the blood. For instance, fruits and vegetables have organic acids in combination with soda and potash in the form of acid salts. When the acids are burnt or utilised in the body, the alkaline soda or potash is left behind. Hence the effect of the natural fruit acids is to increase the alkalinity of the blood rather than reduce it. Based on the above observations, the following charts show the common foods with acid and alkaline ash:

A - Foods Leaving an <u>Acid</u> Ash (One-Fifth Class) Barley Eggs Bananas (unripe) Grain Foods Beans Lentils Bread Meats Cereals Nuts except almonds Cakes Oatmeal Chicken Peas Confections Rice Corn Sugar Chorolate Sea Foods Coffee Tea

B - Foods Leaving an <u>Alkaline</u> Ash (Four-fifths class) Almonds Melons Apples Milk Apricots Onions Banana (ripe) Oranges Beets Parsley Cabbage Peaches Carrots Pears Cauliflower Pineapple Celery Potatoes Coconuts Pumpkins Cottage Cheese Radishes Cucumbers Raisins Dates Spinach Figs (Fresh and Dry) Soyabeans Grapes Tomatoes Lemons Turnips Lettuce.

PROBIOTICS

The history of probiotics, or 'good bacteria', lies in the**1900s** when probiotics were discovered by Russian scientist and Nobel Prize winner, Elie Metchnikoff of the Pasteur Institute in Paris.

Probiotics are live bacteria and yeasts that are good for your health, especially your digestive system. We usually think of bacteria as something that causes diseases. But your body is full of bacteria, both good and bad. **Probiotics** are often called "good" or "helpful" bacteria because they help keep your gut healthy.

Probiotics are bacteria that line your digestive tract and support your body's **ability to absorb nutrients and fight infection**.

Prebiotics are nondigestible carbohydrates that act as food for probiotics. When probiotics and prebiotics are combined, they form a **synbiotic**. Fermented dairy products, such as yogurt, are considered synbiotic because they contain live bacteria and the fuel they need to grow.

Probiotics are live microorganisms that may be able to help prevent and treat some illnesses. Promoting a healthy digestive tract and a healthy immune system are their most widely studied benefits at this time. These are also commonly known as friendly, good, or healthy bacteria.

Yogurt is a creamy, fermented dairy product. **Probiotic yogurt** is any **yogurt** that contains live, active bacterial cultures. Most natural or regular **yogurt** is **probiotic**.

A normal serving of **yogurt** contains billions of bacteria, which many people believe to be beneficial to the body.

Mechanism of action

Your gut contains both beneficial and harmful bacteria. Digestive experts agree that the balance of gut flora should be approximately **85 percent good bacteria and 15 percent bad bacteria.**

If this ratio gets out of balance, the condition is known as ***dysbiosis,*** which means there is an imbalance of too much of a certain type of fungus, yeast or bacteria that is affecting the body in a negative way. By consuming certain types of probiotics foods and supplements you can help bring these **ratios back into balance**.

Researchers are trying to figure out exactly how probiotics work. Here are some of the ways they may keep you healthy:

- When you lose "good" bacteria in your body (like after you take antibiotics, for example), probiotics can help replace them.
- They can help balance your "good" and "bad" bacteria to keep your body working like it should.

Types of Probiotics

Many types of bacteria are classified as probiotics. They all have different benefits, but most come from two groups:

Lactobacillus: This may be the most common probiotic. It's the one you'll find in yogurt and other fermented foods. Different strains can help with diarrhea and may help with people who can't digest lactose, the sugar in milk.

Bifidobacterium: found in some dairy products. It may help ease the symptoms of irritable bowel syndrome (IBS) and some other conditions.

Other types of probiotics are mention below:

Bifidobacterium bifidum — the most dominant probiotic in infants and in the large intestine. Supports production of vitamins in gut, inhibits harmful bacteria, supports immune system response and prevent diarrhea.

Bifidobacterium longum — supports liver function, reduces inflammation, removes lead and heavy metals.

Bifidobacterium breve — helps colonize healthy gut community and crowd out bad bacteria.

Bifidobacterium infantis — alleviates IBS symptoms, diarrhea and constipation.

Lactobacillus casei — supports immunity, inhibits h. pylori and helps fight infections.

Lactobacillus acidophilus — relieves gas, bloating, improves lactose intolerance. Shown 61 percent reduction in e. coli, lower cholesterol levels [12] and creation of vitamin K. Also, important in GALT immune strength.

Lactobacillus bulgaricus — a powerful probiotic strain that has been shown to fight harmful bacteria that invades your digestive system and is stable enough to withstand the acidic digestive juices of the stomach. It also neutralizes toxins and naturally produces its own antibiotics.

Lactobacillus brevis — shown to survive the GI tract, boost cellular immunity, enhanced natural T-killer cells and kill h. pylori bacteria.

Lactobacillus rhamnosus — supports bacterial balance and supports healthy skin. Helps fight urinary tract infections, respiratory infections, and reduce anxiety by reducing stress hormones and GABA neurotransmitter receptors. Also, survives GI tract.

Bacillus subtilis — an endospore probiotic that is heat-resistant. Elicits a potent immune response and supports GALT. Suppresses growth of bad bacteria like salmonella and other pathogens.

Bacillus coagulans — an endospore probiotic that is heat-resistant and improves nutrient absorption. Also has been shown to reduce inflammation and symptoms of arthritis.

Saccharomyces boulardii — a yeast probiotic strain that restores natural flora in the large and small intestine and improves intestinal cell growth. It has proved effective in treating inflammatory bowel disease like Crohn's disease. It's been shown to have anti-toxin effects, be antimicrobial, and reduce inflammation.

What do we know about the usefulness of probiotics?

Probiotics are actively used for treatment of diarrhoea, respiratory infections, and prevention of infectious gastrointestinal diseases. The efficacy of probiotics is due to strain-specific features and the number of viable cells. They may also help with symptoms of irritable bowel syndrome. However, benefits have not been conclusively demonstrated, and not all probiotics have the same effects.

Probiotics hold the key not just for better health and a stronger immune system, but also for healing digestive issues, mental health illness, and neurological disorders.

Skin and digestive system by themselves host about 2,000 different types of bacteria. Probiotic benefits have been proven effective in supporting immune function and healthy digestion, as well as beautiful skin.

The good gut bacteria are also responsible for:

- Producing vitamin B-12, butyrate and vitamin K2
- Crowding out bad bacteria, yeast and fungi
- Creating enzymes that destroy harmful bacteria
- Stimulating secretion of IgA and regulatory T Cells

Probiotics have been in our systems right from the moment that we stepped into the world. When a newborn is in the birth canal of the mother during delivery, that's when the baby is exposed to the bacteria of his or her mother for the first time. This event starts a chain of events inside the baby's GI tract, and the infant's GI tract starts to produce good bacteria.

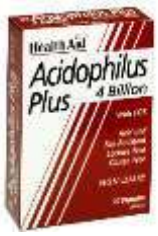
Most people, including children, are in need of a probiotic boost due to the use of prescription medication particularly antibiotics as well as high carbohydrate diets, the consumption of chlorinated and fluoridated water, and conventional foods such as non-organic meat and dairy that contain antibiotic residues. These chemicals kill off probiotics in your system, which over time will damage your digestive tract.

Researchers have studied probiotics to find out whether they might help prevent or treat a variety of health problems, including:

- Digestive disorders such as diarrhea caused by infections, antibiotic-associated diarrhea, irritable bowel syndrome, and inflammatory bowel disease
- Allergic disorders such as atopic dermatitis (eczema) and allergic rhinitis (hay fever)
- Tooth decay, periodontal disease, and other oral health problems
- Colic in infants

- Liver disease
- The common cold
- Prevention of necrotizing enterocolitis in very low birth weight infants.

New studies underway may soon prove that probiotics can:



- reduce flu and colds
- reduce overuse of antibiotics
- treat kidney stones
- treat colic

- prevent cavities and gum disease
- treat colitis and Crohn's disease
- combat antibiotic-resistant bacteria
- treat liver disease

- battle cancer
- manage autism

- lower cholesterol
- fight bacteria that causes ulcers

- improve acne
- vaginal health
- urogenital health
- lose weight

Recent studies show that three pre–post studies and six randomized controlled trials met the inclusion criteria. Overall studies showed a positive effect of probiotics on reducing the number of pulmonary exacerbations and decreasing gastrointestinal inflammation. There was limited effect of probiotics on other outcomes and inadequate evidence for the effects of specific probiotic species and strains (Jacqueline, 2016).

Probiotics are not all alike. For example, if a specific kind of *Lactobacillus* helps prevent an illness, that doesn't necessarily mean that another kind of *Lactobacillus* would have the same effect or that any of the *Bifidobacterium* probiotics would do the same things.

The Top 7 Probiotic Killers include:

1. Prescription Antibiotics
2. Sugar
3. Tap Water
4. Genetically Modified Organisms (GMO) Foods *(Genetically modified (GM) foods are foods derived from organisms whose genetic material (DNA) has been modified in a way that does not occur naturally (WHO definition)).*
5. Grains
6. Emotional Stress
7. Chemicals and medications

Many probiotics are sold as dietary supplements, which do not require FDA approval before they are marketed.

Antioxidants

All living organisms utilize oxygen to metabolize and use the dietary nutrients in order to produce energy for survival. Oxygen thus is a vital component for living. Oxygen meditates chemical reactions that metabolize fats, proteins, and carbohydrates to produce energy.

While oxygen is one of the most essential components for living, it is also a double edged sword. Oxygen is a highly reactive atom that is capable of becoming part of potentially damaging molecules commonly called "**free radicals**."

> These free radicals are capable of attacking the healthy cells of the body. This may lead to **damage, disease and severe disorders**. Cell damage caused by free radicals appears to be a major contributor to aging and diseases like:

- cancer
- heart disease
- decline in brain function
- decline in immune system etc.

Overall, free radicals have been implicated in the pathogenesis of at least 50 diseases.

Since **free radicals** contain an unpaired electron they are **unstable** and reach out and capture electrons from other substances in order to neutralize themselves. **This initially stabilizes the free radical but generates another in the process.** Soon a chain reaction begins and thousands of free radical reactions can occur within a **few seconds** on the primary reaction.

An **antioxidant** is a molecule that inhibits the oxidation of other molecules. Oxidation is a chemical reaction that can produce free radicals, leading to chain reactions that may damage cells.

Antioxidants are one of the first lines of defense that the **body** employs to keep free radicals in check and prevent them from causing a domino effect of damage on other cells. **Antioxidant** compounds can "donate" electrons to unstable free radicals so they don't have to snatch electrons from unsuspecting nearby cells.

Diets high in vegetables and fruits, which are good sources of antioxidants, have been found to be healthy; however, research has not shown antioxidant supplements to be beneficial in preventing diseases. Examples of antioxidants include vitamins C and E, selenium, and carotenoids, such as beta-carotene, lycopene, lutein, and zeaxanthin.

Free radicals are highly unstable molecules that are naturally **formed** when you **exercise** and when your body **converts food into energy.** Your body can also be exposed to free radicals from a variety of **environmental sources**, such as cigarette smoke, air pollution, and sunlight. **Free radicals can cause "oxidative stress," a process that can trigger cell damage.** Oxidative stress is thought to play a role in a variety of diseases including cancer, cardiovascular diseases, diabetes, Alzheimer's disease, Parkinson's disease, and eye diseases such as cataracts and age-related macular degeneration.

Concerns have not been raised about the safety of antioxidants in food. However, **high-dose supplements of antioxidants may be linked to health risks** in some cases. Supplementing with **high doses of beta-carotene** may increase the risk of **lung cancer in smokers**. Supplementing with **high doses of vitamin E** may increase **risks of prostate cancer** and increased risks of **hemorrhagic stroke**

(a type of stroke caused by bleeding in the brain). Antioxidant supplements may **interact** with some medicines.

Why Don't Antioxidant Supplements Work?

Most clinical studies of antioxidant supplements have not found them to provide substantial health benefits. Researchers have suggested several reasons for this, including the following:

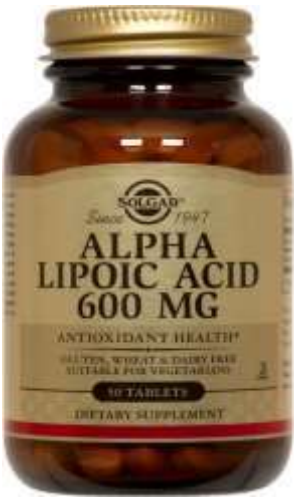
- The beneficial health effects of a diet high in vegetables and fruits or other antioxidant-rich foods may actually be caused by other substances present in the same foods, other dietary factors, or other lifestyle choices rather than antioxidants.
- The effects of the large doses of antioxidants used in supplementation studies may be different from those of the smaller amounts of antioxidants consumed in foods.
- Differences in the chemical composition of antioxidants in foods versus those in supplements may influence their effects. For example, eight chemical forms of vitamin E are present in foods. Vitamin E supplements, on the other hand, typically include only one of these forms—alpha-tocopherol. Alpha-tocopherol also has been used in almost all research studies on vitamin E.
- For some diseases, specific antioxidants might be more effective than the ones that have been tested. For example, to prevent eye diseases, antioxidants that are present in the eye, such as lutein, might be more beneficial than those that are not found in the eye, such as beta-carotene.

- The relationship between free radicals and health may be more complex than has previously been thought. Under some circumstances, free radicals actually may be beneficial rather than harmful, and removing them may be undesirable.
- The antioxidant supplements may not have been given for a long enough time to prevent chronic diseases, such as cardiovascular diseases or cancer, which develop over decades.
- The participants in the clinical trials discussed above were either members of the general population or people who were at high risk for particular diseases. They were not necessarily under increased oxidative stress. Antioxidants might help to prevent diseases in people who are under increased oxidative stress even if they don't prevent them in other people.

Therefore, do not use antioxidant supplements **to replace a healthy diet or conventional medical care**, or as a reason to postpone seeing a health care provider about a medical problem.

Antioxidants as food supplements in Pharmacy

Alpha lipoic acid (ALA)



Alpha lipoic acid (ALA) is a fatty acid that exists in the mitochondria and is involved in energy metabolism. Commonly taken with L-Carnitine supplements as they are related in mechanisms. ALA gives a short but potent reduction of oxidation by increasing anti-oxidant enzymes, and may decrease Blood Glucose acutely.

It is synthesized in the body and can be consumed through eating meats and minimally in some fruits/vegetables.

In supplement form, it has shown benefit against various forms of oxidation and inflammation. These effects carry on to benefits that protect one from heart diseases, liver diseases, diabetes, and neurological decline with age.

It is a potent anti-oxidant compound. It works with mitochondria and the body's natural anti-oxidant defenses. It is also seen as an anti-aging compound since it can reverse some of the oxidant damage related effects of aging.

Alpha-Lipoic Acid, despite being a fatty acid, appears to be water soluble in the gut and is absorbed by transporters. Coingestion with fatty acids in the diet does not appear to be required.

Can be bound by avidin, and thus coingestion with raw egg whites can possibly negate the benefits of supplementation. -One study has indicated that long-term, relatively high-dose ALA treatment is liver toxic in mice. Although ALA has been well-studied and found to be safe at standard doses in humans (typically 300-

600mg), it is not known whether similar negative effects could occur with long term high-dosage supplementation. High-dose ALA supplementation is therefore not recommended.

Standard dosages of Alpha-lipoic acid (ALA) tend to be in the range of 300-600mg; ALA supplementation can be taken in a fasted state.

Indication:

- Symptoms of Diabetic Neuropathy
- Blood Glucose
- HbA1c
- Glycemic Control
- Insulin Sensitivity
- General Oxidation
- Blood Pressure
- Symptoms of Intermittent Claudication ***(Intermittent claudication is a disorder of blood flow that limits mobility)***
- Blood Flow
- Inflammation
- Symptoms of Rheumatoid Arthritis
- Lipid Peroxidation
- Nerve Repair ***(May increase nerve regeneration rates and be of aid to nervous system injury)***
- C-Reactive Protein
- Motion Sickness
- Treatment of Dementia (significant rehabilitative effect of ALA on cognitive decline has been noted)
- Skin Quality

Selenium

Selenium is **a trace element** that is naturally present in many foods, added to others, and available as a dietary supplement ***(Brazil nuts, Seafood's and organ meats are the richest food sources of selenium)***. Selenium, which is nutritionally essential for humans, is a constituent of more than two dozen selenoproteins that **play critical roles in reproduction, thyroid hormone metabolism, DNA synthesis, and protection from oxidative damage and infection.**

Selenium is a powerful trace mineral that everyone needs. Along with iodine, **selenium is great for the thyroid**. It supports the immune system and it's a powerful antioxidant. Adults need at least 55 micrograms a day and some people consume more, depending on their needs (it's best to stay under 400mcg/day).

Selenium exists in two forms: **inorganic** (**selenate** and **selenite**) and **organic** (**selenomethionine** and **selenocysteine**). **Both forms can be good dietary sources of selenium.** Soils contain inorganic selenites and selenates that plants accumulate and convert to organic forms, mostly selenocysteine and selenomethionine and their methylated derivatives.

Skeletal muscle is the major site of **selenium storage**, accounting for approximately 28% to 46% of the total selenium pool. Both selenocysteine and selenite are reduced to generate hydrogen selenide, which in turn is converted to selenophosphate for selenoprotein biosynthesis.

The most commonly used measures of selenium status are plasma and serum selenium concentrations. Concentrations in blood and urine reflect recent selenium

intake. Analyses of hair or nail selenium content can be used to monitor longer-term intakes over months or years. **Quantification of one or more selenoproteins (such as glutathione peroxidase and selenoprotein P)** is also used as a functional measure of selenium status. Plasma or serum selenium concentrations of 8 micrograms (mcg)/dL or higher in healthy people typically meet needs for selenoprotein synthesis

Food Supplements

Selenium is available in multivitamin/multimineral supplements and as a stand-alone supplement, often in the forms of selenomethionine or of selenium-enriched yeast (grown in a high-selenium medium) or as sodium selenite or sodium selenate. The human body absorbs more than 90% of selenomethionine but only about 50% of selenium from selenite. Nt-ox, Frelox, Neurazan plus.

Selenium Deficiency

- selenium deficiency in combination with a second stress (possibly a viral infection) leads to Keshan disease,
- Selenium deficiency is also associated with male infertility and might play a role in Kashin-Beck disease, a type of osteoarthritis.
- HIV
- Cancer, cardiovascular disease, cognitive decline, and thyroid disease.

Interactions with Medications

Cisplatin

Cisplatin, an inorganic platinum chemotherapy agent, is used to treat ovarian, bladder, lung, and other cancers. Cisplatin can reduce selenium levels in hair and serum but whether these reductions have a clinically significant impact is not known.

Omega-3 fatty acid

Omega-3 fatty acids are considered essential fatty acids. They are necessary for human health, but the body can't make them. You have to get them through food. Omega-3 fatty acids are found in fish, such as salmon, tuna, and halibut, other seafood's including algae, some plants, and nut oils. Also known as polyunsaturated fatty acids (PUFAs), omega-3 fatty acids play a crucial role in brain function, as well as normal growth and development. They have also become popular because they may reduce the risk of heart disease. The American Heart Association (AHA) recommends eating fish (particularly fatty fish such as mackerel, lake trout, herring, sardines, albacore tuna, and salmon) at least 2 times a week.

Research shows that omega-3 fatty acids reduce inflammation and may help lower risk of chronic diseases such as heart disease, cancer, and arthritis. Omega-3 fatty acids are highly concentrated in the brain and appear to be important for cognitive (brain memory and performance) and behavioral function. In fact, infants who do not get enough omega-3 fatty acids from their mothers during pregnancy are at risk for developing vision and nerve problems. Symptoms of omega-3 fatty acid

deficiency include fatigue, poor memory, dry skin, heart problems, mood swings or depression, and poor circulation.

It is important to have the proper ratio of omega-3 and omega-6 (another essential fatty acid) in the diet. Omega-3 fatty acids help reduce inflammation, and most omega-6 fatty acids tend to promote inflammation. The typical American diet contains 14 to 25 times more omega-6 fatty acids than omega-3 fatty acids, which many nutritionally-oriented physicians consider to be way too high on the omega-6 side. Indeed, studies suggest that higher dietary omega-6 to omega-3 ratios appear to be associated with worsening inflammation over time and a higher risk of death among hemodialysis patients.

The Mediterranean diet, on the other hand, has a healthier balance between omega-3 and omega-6 fatty acids. Many studies have shown that people who follow this diet are less likely to develop heart disease. The Mediterranean diet emphasizes foods that are rich in omega-3 fatty acids, including whole grains, fresh fruits and vegetables, fish, olive oil, garlic, and moderate wine consumption.

Indications:

- Omega-3s Can Promote Brain Health During Pregnancy and Early Life
- High cholesterol
- High blood pressure
- Heart disease
- Diabetes
- Osteoporosis

- Rheumatoid arthritis
- Systemic lupus erythematosus (SLE)
- Anxiety & Depression
- Bipolar disorder
- Schizophrenia
- Attention deficit/hyperactivity disorder (ADHD)
- Cognitive decline
- Skin disorders
- Inflammatory bowel disease (IBD)
- Omega-3s Can Reduce Fat in The Liver
- Asthma
- Macular degeneration
- Colon cancer
- Menstrual pain
- Breast cancer
- Prostate cancer

Precautions

- Omega-3 fatty acids should be used cautiously by people who bruise easily, have a bleeding disorder, or take blood-thinning medications, including warfarin (Coumadin), clopidogrel (Plavix), or aspirin. High doses of omega-

3 fatty acids may increase the risk of bleeding, even in people without a history of bleeding disorders, and even in those who are not taking other medications.

- People with either diabetes or schizophrenia may lack the ability to convert alpha-linolenic acid (ALA) to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), the forms more readily absorbed by the body. People with these conditions should be sure to get enough EPA and DHA from their diets. Also, people with type 2 diabetes may experience increases in fasting blood sugar levels while taking fish oil supplements.
- Risk of potentially harmful contaminants, such as heavy metals (including mercury), dioxins, and polychlorinated biphenyls

Possible Interactions:

Blood-thinning medications: Omega-3 fatty acids may increase the effects of blood-thinning medications, including aspirin, warfarin (Coumadin), and clopedigrel (Plavix).

Diabetes medications: Taking omega-3 fatty acid supplements may increase fasting blood sugar levels.

Cyclosporine: Cyclosporine is a medication given to people with organ transplants. Taking omega-3 fatty acids during cyclosporine (Sandimmune) therapy may reduce toxic side effects, such as high blood pressure and kidney damage, associated with this medication.

Cyclosporine: Cyclosporine is a medication given to people with organ transplants. Taking omega-3 fatty acids during cyclosporine (Sandimmune) therapy may

reduce toxic side effects, such as high blood pressure and kidney damage, associated with this medication.

Nonsteroidal anti-inflammatory drugs (NSAIDs): In an animal study, treatment with omega-3 fatty acids reduced the risk of ulcers from NSAIDs. NSAIDs include ibuprofen (Motrin or Advil) and naproxen (Aleve or Naprosyn). More research is needed to see whether omega-3 fatty acids would have the same effects in people.

CO-Q-10

Coenzyme Q_{10}, also known as ubiquinone, ubidecarenone, coenzyme Q, Coenzyme Q10 (CoQ10).

Coenzyme Q10 (CoQ10) is a substance that helps convert food into energy. CoQ10 is found in almost every cell in the body, and it is a powerful antioxidant. CoQ10 levels decrease with age.

Coenzyme Q10 (CoQ10) is a substance like a vitamin. It is found in every cell of the body. cells use it to produce energy your body needs for cell growth and maintenance. It also functions as an antioxidant, which protects the body from damage caused by harmful molecules. CoQ10 is naturally present in small amounts in a wide variety of foods, but levels are particularly high in organ meats such as heart, liver, and kidney, as well as beef, soy oil, sardines, mackerel, and peanuts. Coenzymes help enzymes work to digest food and perform other body processes, and they help protect the heart and skeletal muscles. CoQ10 in the body can be increased by taking CoQ10 supplements.

Promising uses of CoQ10 include eye disease, chest pain caused by exercise, asthma, chronic fatigue, and high cholesterol, as well as the treatment of chemotherapy side effects in children.

Some researchers believe that CoQ10 may help with heart-related conditions, because it can improve energy production in cells, prevent blood clot formation.

What are the signs of a Coenzyme Q10 deficiency?

Studies in both animals and humans have associated significantly decreased levels of CoQ10 with a wide variety of diseases. Since this enzyme is found in high concentration in heart muscle cells, deficiency has been associated with cardiovascular problems including angina, arrhythmia, heart failure and high blood pressure. Problems with blood sugar regulation, gingival (gum) health, and stomach ulcers have also been associated with CoQ10 deficiency. Those who are taking statins to lower cholesterol are at risk for deficiency, because not only do statins reduce cholesterol levels, but they also block CoQ10 synthesis in the body. Low CoQ10 levels in patients on statins can contribute to the common side effects of statin therapy such as fatigue and aching joints and muscles.

Indication

- After heart attack
- Heart failure & Heart surgery
- High blood pressure
- High cholesterol
- Diabetes
- Heart damage result from chemotherapy
- Periodontal disease (Gum)
- Improve immune function in people with HIV or AIDS

- Increase sperm motility, improving male fertility
- Be used as part of the treatment for Parkinson disease
- Improve exercise ability in people with angina
- Help prevent migraines

Precautions

Because of the potential for side effects and interactions with medications, you should take dietary supplements only under the supervision of a knowledgeable health care provider.

CoQ10 appears to be safe with no major side effects, except occasional stomach upset. However, researchers have not done studies and do not know if CoQ10 supplements are safe during pregnancy and breastfeeding.

CoQ10 may lower blood sugar, so people with diabetes should talk with their provider before taking it to avoid the risk of low blood sugar. Some suggest that it may also lower blood pressure.

Contraindication

DO NOT give CoQ10 to a child under 18 except under the supervision of a health care provider.

Recommended dose

For adults 19 years and older: The recommended dose for CoQ10 supplementation is 30 to 200 mg daily. Soft gels tend to be better absorbed than capsules or other preparations. Higher doses may be recommended for specific conditions.

CoQ10 is fat soluble, so it should be taken with a meal containing fat so your body can absorb it. Also, taking CoQ10 at night may help with the body's ability to use it.

Possible Interactions

If you are being treated with any of the following medications, you should not use CoQ10 without first talking to your health care provider.

Chemotherapy medications: Researchers are not sure whether CoQ10's antioxidant effect might make some chemotherapy drugs less effective. Ask your oncologist before taking antioxidants or any supplement along with chemotherapy.

Daunorubicin and doxorubicin: CoQ10 may help reduce the toxic effects on the heart caused by daunorubicin (Cerubidin) and doxorubicin (Adriamycin), two chemotherapy medications that are used to treat several kinds of cancer. Ask your oncologist before taking antioxidants or any supplement along with chemotherapy.

Blood pressure medications: CoQ10 may work with blood pressure medications to lower blood pressure. In a clinical study of people taking blood pressure medications, adding CoQ10 supplements allowed them to reduce the doses of these medications. More research is needed, however. If you take medication for high blood pressure, talk to your provider before taking CoQ10, and DO NOT stop taking your regular medication.

Blood-thinning medications: There have been reports that CoQ10 may make medications such as warfarin (Coumadin) or clopidigrel (Plavix) less effective at thinning the blood. If you take blood thinners, ask your provider before taking CoQ10.

Betaxolol (Betoptic): CoQ10 supplements may reduce the heart-related side effects of betaxolol drops (Betoptic), a beta-blocker medication used to treat glaucoma, without making the medication any less effective.

Other: Medications that can lower the levels of CoQ10 in the body include:

Statins for cholesterol, including atorvastatin (Lipitor), lovastatin (Mevacor), pravastatin (Pravachol), and simvastatin (Zocor)

Fibric acid derivatives for cholesterol, including gemfibrozil (Lopid)

Beta-blockers for high blood pressure, such as atenolol (Tenormin), labetolol (Normodyne), metoprolol (Lopressor or Toprol), and propranolol (Inderal)

Tricyclic antidepressant medications, including amitriptyline (Elavil), doxepin (Sinequan), and imipramine (Tofranil).

Aromatherapy

Aromatherapy is the practice of using the natural oils extracted from flowers, bark, stems, leaves, roots or other parts of a plant to enhance psychological and physical well-being and naturally enhance the benefits of massage.

The inhaled aroma from these "essential" oils is widely believed to stimulate brain function. Essential oils can also be absorbed through the skin, where they travel through the bloodstream and can promote whole-body healing. It is used for a variety of applications, including pain relief, mood enhancement and increased cognitive function.

It is believed that the inhalation of essential oils stimulates the part of the brain connected to smell - the olfactory system; a signal is sent to the limbic system of the brain that controls emotions and retrieves learned memories. This causes chemicals to be released which make the person feel relaxed, calm, or even stimulated. If the aromatherapy includes massage the effect is to further relax the person.

The following table present various types of essential oils with significant effect in therapy:

No.	Essential oil	Effect
1	Bergamot	Studies will confirm the benefit of bergamot in dyslipidemic and other cardiometabolic disorders, potentially leading to reduced overall Cardiovascular risk & reducing cardiometabolic risk.
2	Clove	Researcher demonstrated for the first time that clove and its major active ingredient, eugenol, exhibited a significant immunosuppressive effect on dendritic cell functions (act as messengers between the innate and the adaptive immune systems)., revealing that clove is a functional food that can ameliorate chronic inflammation and autoimmunity (Ching-Hsiung Lin, 2016).
3	Chamomile	Chamomile tea significantly decreased concentration of glycosylated hemoglobin, serum insulin levels, homeostatic model assessment for insulin resistance, and serum malondialdehyde (Zemestani,2016).
4	Lemon	Alkaline medium (spasm, factor P)
5	Peppermint	Hepatoprotector, against Escherichia coli (Gram-negative) and Staphylococcus aureus (Gram-positive), Peppermint capsules appear to can reduce the severity of primary dysmenorrhea through certain analgesic mechanisms

6	Rosemary	Rich in polyphenols, strongest antimicrobial effect on digestive system.
7	Cinnamon	In activate Listeria monocytogenes in ground beef at freezing and refrigeration temperatures.
8	Lavender	Aromatherapy massage with lavender essential oil was found effective in relieving pain in patients with knee osteoarthritis Lavender aromatherapy had beneficial effects on peripheral venous cannulation pain, anxiety, and satisfaction level of patients undergoing surgery.
9	Eucalyptus	excellent antimicrobial and antioxidant activities against Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Candida albicans and Candida parapsilosis.
10	Jojoba	Jojoba oil can be an excellent source of fatty acid alkyl esters or biodiesel after the transesterification process and the purification steps. Rich in minerals & vitamins, support very high temperatures, strong anti-inflammatory agent & fat burner.

The Essential Oil Charts conform disease

No.	Disease	Essential oil
1	Acne & Oily Skin	Bergamot, grapefruit, jasmine, lemon, orange, peppermint, sandalwood, tea tree.
2	Addictions	lavender, orange, Roman chamomile, sandalwood
3	Anxiety & Chronic Fatigue	Bergamot, chamomile, sage, grapefruit, jasmine, lavender, lemon, lemongrass, orange, vanilla,
4	Arthritis	Camphor, frankincense, German & Roman chamomile, peppermint, rosemary.
5	Bloating	Caraway, coriander, fennel, ginger, peppermint.
6	Blood Pressure	High: Lavender, Low: Rosemary
7	Bronchitis	Basil, eucalyptus, peppermint, rosemary & thyme
8	Burns & Sunburns	Lavender
9	Cellulite	Basil, bergamot, cedarwood, cinnamon, grapefruit, juniper, lavender, lemon, orange, pine
10	Dandruff	Jojoba, lavender, rosemary, tea tree
11	Diabetes	Lavender
12	Diarrhea	Basil, peppermint
13	Dry skin	Chamomile, rose oil, sandalwood
14	Fever	Peppermint, Lemon, lavender
15	Food poisoning	Rosemary

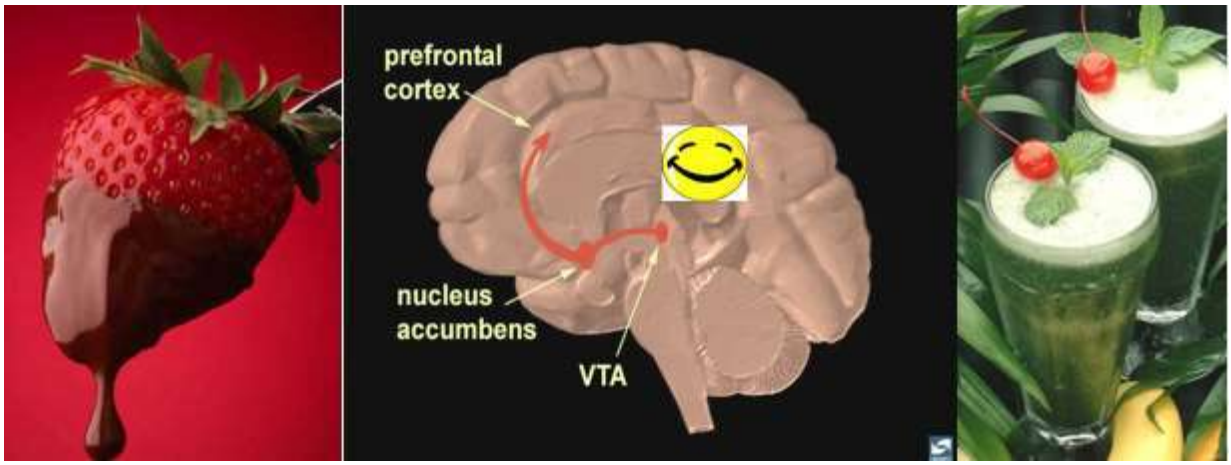
Brain Tonic

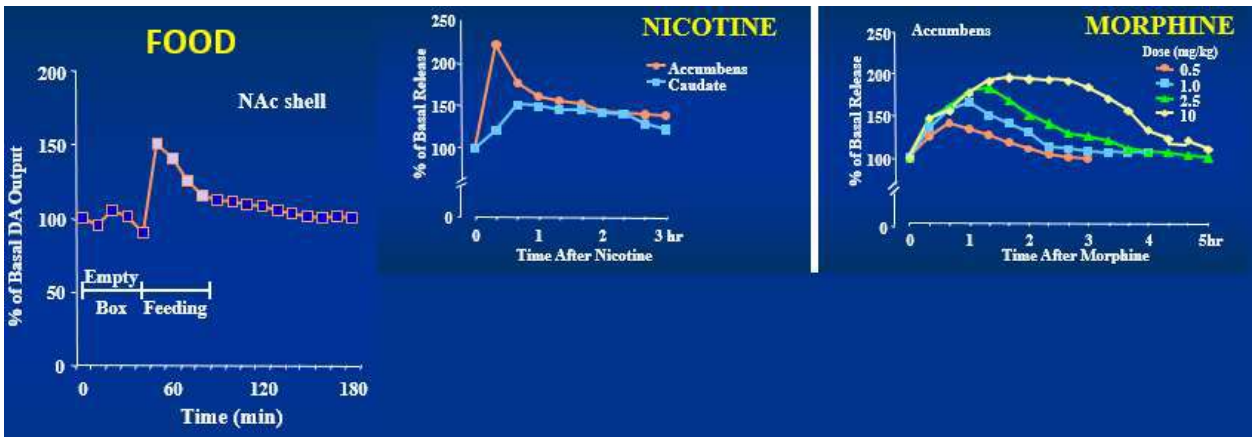
Both drug addiction and obesity can be defined as disorders in which the important value of one type of reward (drugs and food, respectively) becomes abnormally enhanced relative to, and at the expense of others.

The reward system is a group of neural structures responsible for incentive salience (i.e., "wanting" or desire), pleasure (i.e., "liking" or hedonic value), and positive reinforcement (i.e., learning).

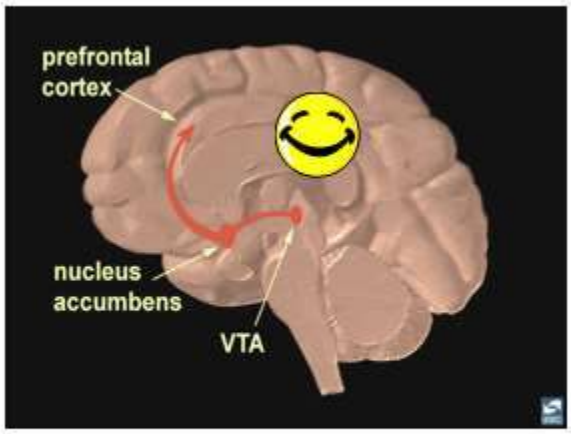
A reward can be defined as reinforcer only if its delivery increases the probability of a behavior. Reward or reinforcement is an objective way to describe the positive value that an individual ascribes to an object, behavioral act or an internal physical state.

Natural events activate these reward systems

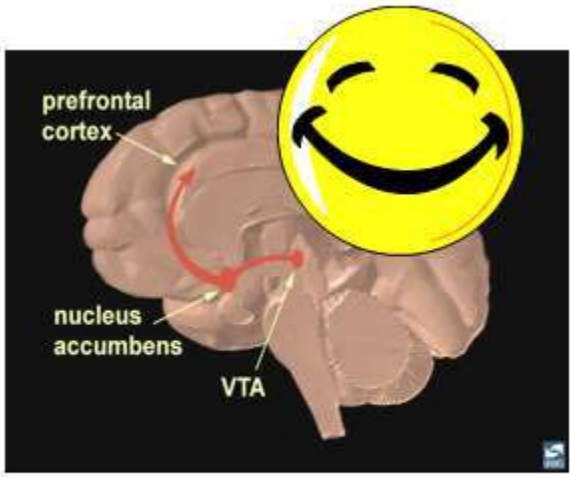




Drugs make your brain really happy; but only when your brain is on drugs.

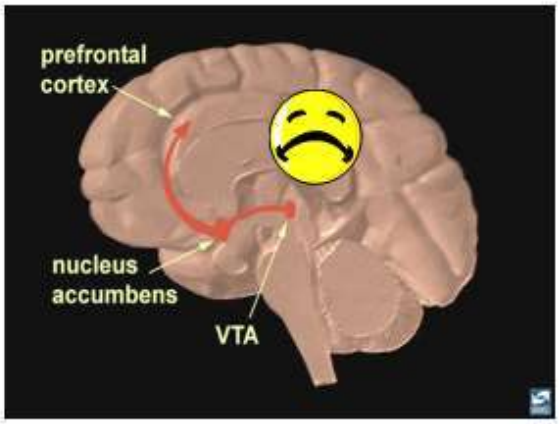


Normal Brain

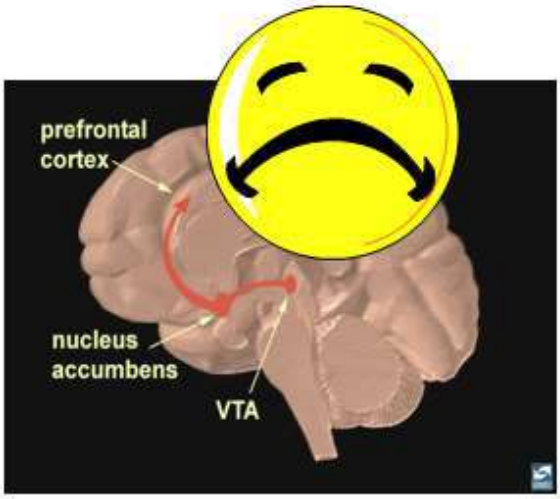


Brain on Drugs

After tolerance



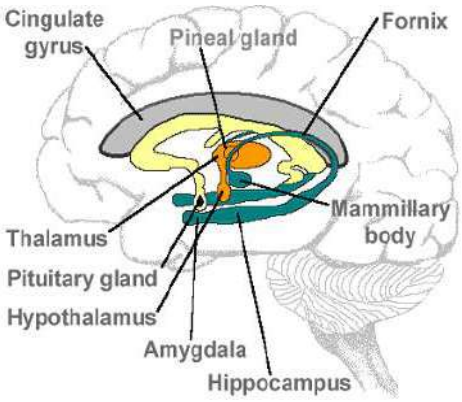
Brain on drugs after tolerance



Brain on drugs for an extended period

Cognitive Load Should Increase Discounting

Memory system



Hippocampal system is necessary for associative learning even if no component of the association relies on spatial information.

Memory without episodic recall: feeling of knowing

The following techniques can improve mental ability:

1. Travel new routes to inspire different thoughts;
2. Visit new locations and experience the flavors of various cultures;
3. Socialize with intelligent people. Have in depth discussions;
4. Ask questions and get answers;
5. Sharpen your senses by noticing as many details as possible;
6. “Be Here Now,” (Forgetfulness);
7. Exercise increases the body’s intake of oxygen;
8. Read challenging things;
9. Use Chromotherapy (yellow is cerebrally stimulating);
10. Observe Nature;
11. When wanting to remember something, repeat it aloud to yourself. Visualize it being imprinted upon your brain;
12. To remember names, associate the name with a picture;
13. When learning something important, with your mind’s eye, see yourself registering the information and filing it;
14. Think positively. You’ll do better if you affirm “I can pass this exam” rather than “I’ll never make it.”;
15. Do your best to avoid emotional stress;
16. Avoid damaging substances such as cigarettes/Shisha/extra fats/ acid foods;
17. Be creative, role play methods;
18. Visualization practices mental gymnastics;
19. Exercises to improve memory are called mnemonics where one makes up interesting information to help remember something;
20. Learn things of value for your entire life. Keep an open heart and mind. Be open to the possibilities;

Supplements to Improve Brain Function

Ginkgo **(Ginkgo *biloba)***

Helps improve the brain's ability to utilize oxygen and glucose by improving peripheral blood flow. Ginkgo improves nerve transmission, activates ATP (Adenosine triphosphate), an organic compound that aids metabolic reactions. Ginkgo is one of the most prescribed herbs in Europe and recommended in treating dementia, memory loss, senility and promoting recovery from stroke. It is an antioxidant and cerebral tonic.

Gotu Kola **(Centella *asiatica)***

Is used in India as a cerebral tonic. Containing calcium, pangamic acid (***helps in the formation of specific amino acids such as methionine. It plays a role in the oxidation of glucose in cell respiration, known also B15***), phosphorus and the amino acid glutamine, gotu kola has been used to treat amnesia, dementia, fatigue and senility. It has a revitalizing effect on the brain cells and nerves.

Ginseng ***(Panax ginseng)***

As a tonic ginseng is a treatment of several diseases, including difficulty in concentration, anaemia, diabetes, gastritis, insomnia, impotence, and as a general healing, promoting health and longevity. Ginseng is classified as an „adaptogen", an agent that helps the body to adapt to stress, improving stamina and concentration, and providing a normalizing and healing effect.

Oatstraw **(Avena *sativa)***

Is a cerebral and nerve tonic, nutritive and rejuvenative.

Rosemary oil **(*Rosemarinus officinalis),***

Due to 8 cineol due to increase brain activity.

Acetyl-L-Carnitine

Acetyl-L-carnitine is similar in form to the amino acid carnitine and has some similar functions, such as being involved in the metabolism of food into energy. The acetyl group that is part of acetyl-L-carnitine contributes to the production of the neurotransmitter acetylcholine. Acetyl-L-carnitine is a molecule that occurs naturally in the brain and other tissues. It is also available as a supplement.

Vitamin B6

Vitamin B6 is the master vitamin in the processing of amino acids—the building blocks of all proteins and some hormones. Vitamin B6 helps to make and take apart many amino acids and is also needed to make serotonin, melatonin, and dopamine. Vitamin B6 also aids in the formation of several neurotransmitters and is therefore an essential nutrient in the regulation of mental processes and possibly mood. Potatoes, bananas, raisin bran cereal, lentils, liver, turkey, and tuna are all good sources of vitamin B6.

Diabetes

Diabetes mellitus is a nutritional disorder, characterized by an abnormally elevated level of blood glucose and by the excretion of the excess glucose in the urine. It results from an absolute or relative lack of insulin which leads to abnormalities in carbohydrate metabolism as well as in the metabolism of protein and fat.

The normal fasting blood sugar content is 80 to 120 mg. per 100 ml. of blood and this can go up to a level of 180 mg. per 100 ml. of blood two hours after meals. Anything above these norms can be termed diabetic levels. Diabetes occurs in all age groups, from young infants to the elderly.

Causes Diabetes has been described by most biological doctors as a "prosperity" disease, primarily caused by systematic overeating and consequent obesity. Not only the overeating of sugar and refined carbohydrate but also of proteins and fats, which are transformed into sugar if taken in excess, is harmful and may result in diabetes. Too much food taxes the pancreas and eventually paralyses its normal activity. It has been estimated that the incidence of diabetes is four times higher in persons of moderate obesity and 30 times higher in persons of severe obesity. Grief, worry and anxiety also have a deep influence on the metabolism and may cause sugar to appear in the urine. The disease may be associated with some other grave organic disorders like cancer, tuberculosis and cerebral disease. Heredity is also a major factor in the development of the disease. It has been rightly said, " Heredity is like a cannon and obesity pulls the trigger."

The diabetic should not be afraid to eat fresh fruits and vegetables which contain sugar and starch. Fresh fruits contain sugar fructose, which does not need insulin for its metabolism and is well tolerated by diabetics. Fats and oils should be taken sparingly, for they are apt to lower the tolerance for proteins and starches.

Emphasis should be on raw foods as they stimulate and increase insulin production. For protein, home- made cottage cheese, various forms of soured milks and nuts are best. The patient should avoid overeating and take four or five small meals a day rather than three large ones.

Glycemic Index & Glycemic Load:

The glycemic index (GI) is a numerical system of measuring how much of a rise in circulating blood sugar a carbohydrate triggers–the higher the number, the greater the blood sugar response. So a low GI food will cause a small rise, while a high GI food will trigger a dramatic spike. A list of carbohydrates with their glycemic values is shown below. A GI of 70 or more is high, a GI of 56 to 69 inclusive is medium, and a GI of 55 or less is low.

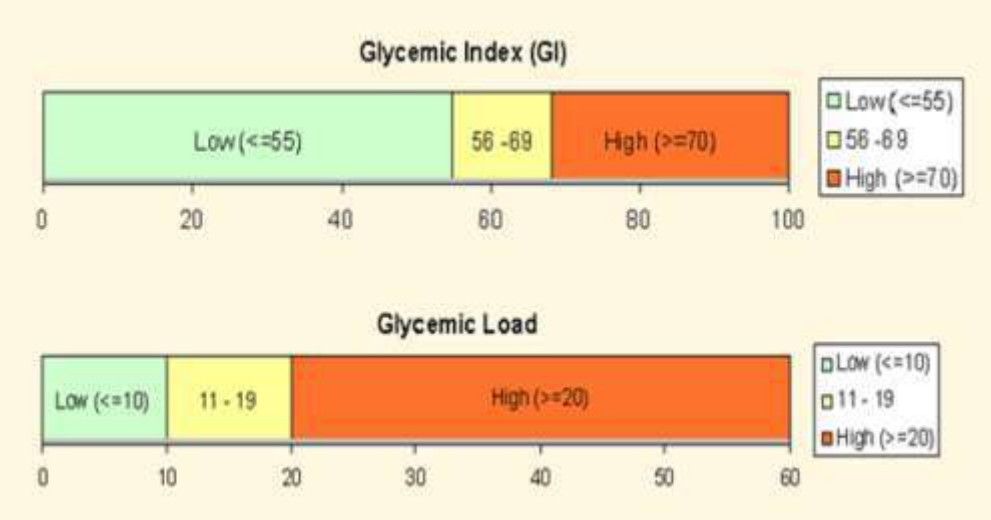
Consumption of high-GI foods cause a sharp increase in postprandial blood glucose concentration that declines rapidly, whereas consumption of low-GI foods results in a lower blood glucose concentration that declines gradually.

The glycemic load (GL) is a relatively new way to assess the impact of carbohydrate consumption that takes the glycemic index into account, but gives a fuller picture than does glycemic index alone. A GI value tells you only how rapidly a carbohydrate turns into sugar. It doesn't tell you how much of that carbohydrate is in a serving of a food. In other words glycemic load is a number that estimates how much the food will raise a person's blood glucose level after eating it.

The Glycemic Load is the most practical way to apply the Glycemic Index to dieting, and is easily calculated by multiplying a food's Glycemic Index (as a percentage) by the number of net carbohydrates in each serving. Glycemic Load gives a relative indication of how much that serving of food is likely to increase your blood-sugar levels.

GL = GI/100 x Net Carbs

(Net Carbs are equal to the Total Carbohydrates minus Dietary Fiber)



Example:

Watermelon has a high GI, but a typical serving of watermelon does not contain much carbohydrate, so the glycemic load of eating it is low.

watermelon has a GI of 80.

A 100-g serving of watermelon has 5g of available carbohydrates making the calculation:

5x 80/100=4 so the GL of watermelon is 4

Be careful

A food with a GI of 100 and 10 g of available carbohydrates has a GL of 10 (10 x 100/100=10),

While a food with GI of 10 and 100 g of available carbohydrates also has a GL of 10 (100 x 10/100=10).

The GI/GL of carbohydrate foods may modify cardiometabolic markers associated with CVD risk. High dietary GLs have been associated with increased concentrations of markers of systemic inflammation, such as C-reactive protein (CRP), interleukin-6, and tumor necrosis factor-α (TNF-α).

Food	Glycemic Index	Serving size	Carbohydrates / serving (g)	Glycemic Load/serving
Russet potato, baked	111	1 medium	30	33
Cornflakes	79	1 cup	26	20
Watermelon	76	1 cup	11	8
Bread, white-wheat	71	1 pita	14	10
Rice, white, boiled	66	1 cup	53	35
Table sugar (sucrose)	63	2tsp	10	6
Dates, dried	62	58g	40	25
Spaghetti, white, boiled (20 min)	58	1 cup	44	25

Honey, pure	58	1Tbsp	17	10
Banana, raw	55	1 cup	24	13
Orange, raw	42	1 medium	11	5
Apple, raw	39		15	6
Skim milk	33	250ml	13	4
Lentils, dried, boiled	29	1 cup	24	7
Cashews	25	28g	9	2

Food Supplements for diabetic patients type 1 & type 2

- Alpha lipoic acid
- Cinnamon
- Trigonella (Fenugreek)
- Chromium
- Vitamin B-complex
- Vitamin D
- Omega 3
- Ginseng
- Olive leaf extract
- Alpha D Dal (D3-α-lipoic acid-B-comp)

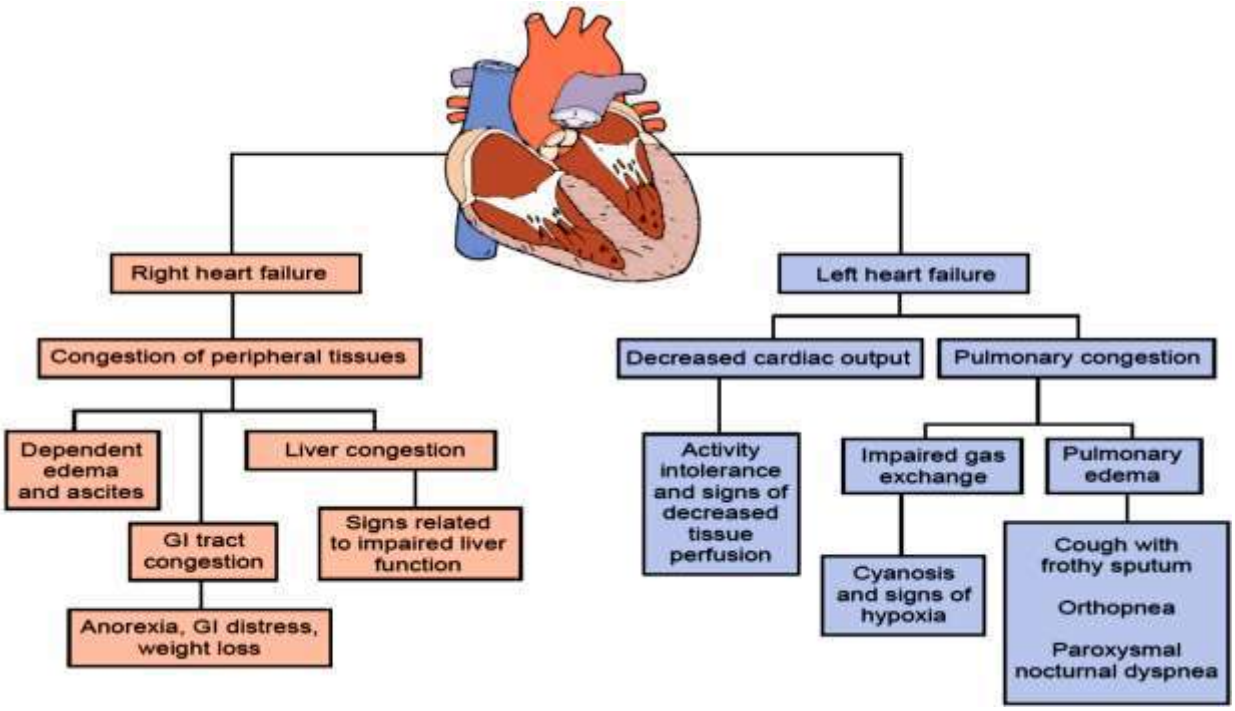
Heart Disease

The term coronary heart disease covers a group of clinical syndromes arising particularly from failure of the coronary arteries to supply sufficient blood to the heart. They include angina peactoris, coronary thrombosis or heart attack and sudden death without infarction. There has been a marked increase in the incidence of heart disease in recent years. Heart attacks have become the number one killer in most of countries even Palestine.

Heart failure (HF) is a syndrome characterized by high mortality, frequent hospitalization, reduced quality of life, and a complex therapeutic regimen.

Heart failure, which is a syndrome characterized by left ventricular dilation or hypertrophy, is caused by cardiac dysfunction that results from myocardial muscle dysfunction or loss.

Heart failure leads to neurohormonal and circulatory abnormalities that cause fluid retention, shortness of breath, and fatigue.



Causes

The basic causes of heart diseases are wrong dietary habits, faulty style of living and various stresses. The famous Framingham Heart Study of the National Heart and Lung Institute identified seven major risk factors in coronary heart disease. These are:

- elevated blood levels of cholesterol, triglycerides and other fatty substances
- elevated blood pressure
- elevated blood uric acid levels (mainly caused by high protein diet),
- certain metabolic disorders, notably diabetes,
- obesity,
- smoking, and
- lack of physical exercise.

Each or a combination of these risk factors can contribute to heart disease. Most of them are of dietary origin. These risk factors can be controlled by changing one's life style and readjusting the diet. Constant worry and tension stimulates the adrenal glands to produce more adrenaline and cortisones. This also contributes to constricted arteries, high blood pressure and increased work for the heart.

Symptoms

A common symptom of heart disease is shortness of breath which is caused by the blood being deprived of the proper amount of oxygen. Another common symptom is chest pain or pain down either arm. Other symptoms are palpitation, fainting, emotional instability, cold hands and feet, frequent perspiration and fatigue. All these symptoms may be caused by many other disorders. Appropriate tests and studies are, therefore, essential to establish the true nature of these symptoms.

Management

The fundamental conditioning factor in all heart diseases is the diet. A corrective diet designed to alter body chemistry and improve the quality of general nutritional intake can, in many cases, reverse the degenerative changes which have occurred in the heart and blood vessels. The diet should be lacto-vegetarian, low in sodium and calories. It should consist of high quality, natural organic foods, with emphasis on whole grains, seeds, fresh fruits and vegetables. Foods which should be eliminated are all white flour products, sweets, chocolates, canned foods in syrup, soft drinks, squashes, all hard fats of animal origin such as butter, cream and fatty meats. Salt and sugar should be reduced substantially. The patient should also avoid tea, coffee, alcohol and tobacco. The essential fatty acids which reduce serum cholesterol levels and minimize the risk of arteriosclerosis can be obtained

from sunflower seed oil, corn oil or safflower oil. Several studies have indicated that garlic can reduce the cholesterol level in persons whose body normally cannot regulate the cholesterol fractions. Other important cholesterol lowering foods are alfalfa and yogurt. Lecithin helps prevent fatty deposits in arteries. Best food sources are unrefined, raw, crude vegetable oils, seeds and grains. Fruits and vegetables in general are highly beneficial in the treatment of heart disease. Seasonal fruits are quite effective heart tonics.

Food Supplements

Fiber

Found naturally in fruits, grains, vegetables, and legumes, fiber cuts down the amount of cholesterol your body soaks up from food.

Plant sterols (phytosterols)

They have a structure that is similar to cholesterol, causing it to decrease gut absorption and to enhance elimination of dietary cholesterol. A comprehensive review of 41 trials comparing plant sterols to placebo concluded that intake of 2 grams per day of sterols reduced “bad” LDL cholesterol by 10% with the effects independent of diet.

Hawthorn Extract

Flowers and berries of the hawthorn plant contain several bioactive compounds and have been used in traditional medicine to treat a variety of cardiovascular conditions. The most well-documented effect of hawthorn is to cause vasodilation and increased blood flow. A recent randomized study showed that 1,200 mg per

day of hawthorn extract for 16 weeks significantly reduced blood pressure in patients with diabetes compared to placebo.

Coenzyme Q10 (CoQ10).

The body naturally makes small amounts of this enzyme, also known as ubiquinone and ubiquinol. As a supplement, CoQ10 may help lower blood pressure, either on its own or along with medications. Other studies have found that adding it to heart failure drugs may help people feel better day to day.

L-Carnitine

Similar to CoQ10, carnitine levels are depleted in patients with various heart conditions and therefore supplementation may be beneficial. Carnitine assists in transporting fat into the mitochondria to be burned as fuel in the heart. The most promising research with carnitine supplementation is in conditions of reduced oxygen like ischemia. Carnitine supplementation may have positive effects on symptoms of heart failure and may improve exercise tolerance and oxygen consumption in moderate to severe heart failure. Effective doses are around 2 grams per day.

Magnesium and Potassium

One study shows that taking magnesium supplements may reduce blood pressure and that they are good for overall heart function and heart disease. Also, dietary intake of potassium to improve heart function as well by helping to offset the rise in blood pressure from a high-salt diet.

Fish oil

Full of omega-3 fatty acids, it can slash levels of triglycerides by up to 30%. It may also improve blood pressure. But it's not clear if non-prescription fish oil supplements lower your risk of heart attack and stroke.

Garlic.

Not only does it make just about anything taste delicious, it could also slightly lower blood pressure. It may slow the buildup of plaque in your arteries, lowering your risk of blood clots.

Lecithin

Lecithin is an excellent and inexpensive source of beneficial phospholipids and a rich source of choline. Lecithin or choline supplementation has been shown to result in a slight decrease in cholesterol. Choline may also reduce the risk for heart disease though another mechanism involving lowering homocysteine levels. Choline is also the precursor for a very important neurotransmitter called acetylcholine. Studies indicate that choline can help improve memory and cognitive function.

Vitamin D:

More positive studies on the cardiovascular benefits of vitamin D have been turning up,

Turmeric:

Turmeric contains a polyphenol called curcumin, which has been shown to have antioxidant and anti-inflammatory properties in animal studies. Inflammation has

been linked to cardiovascular disease, as well as other health problems such as Alzheimer's disease, from which my father suffered.

Arthritis

Metabolic Bone Diseases

A. Mineralization; osteomalacia/rickets
B. Low bone mineral content; osteoporosis; Osteogenesis imperfecta (Oi)
C. High bone mineral content; osteopetrosis; bisphosphonate; benign high bone mass
D. High bone turnover *(Osteitis fibrosa)*; pagets; hyperparathyroidism
E. Low bone turnover *(Osteomalacia);* adynamic disease
F. Fractures

Disease	**Biochemical indicators**
Vitamin D deficiency	D low; 25D low; 1,25D low to normal (border line); Ca low; PTH high; Alk Ph high; P low
Dietary phosphate depletion Fanconi syndrome	P low; Ca high; PTH low; Alk Ph normal; D normal; 25D normal; 1,25D high
Calcium deficiency	Ca low ; PTH high; Alk ph high; P low; D normal; 25-D normal; 1,25 D high
Acidosis from renal damage	HCO3 low; D normal; 25D normal; 1,25 D low to normal; Ca low; PTH high; Alk ph high; P low

Aluminum toxicity	Alk ph normal ; D normal; 25D normal; 1,25 D normal; Ca normal; PTH normal; P normal

Osteoporosis

- Decreased volume of mineralized bone tissue per unit of bone
- Cortical thinning and increased porosity
- Decreased number and thickness of trabecular
- Decreased bone strength
- Increased risk of fracture
- Age-related
- Hypogonadism: estrogen and testosterone
- Calcium deficiency and insufficiency
- Vitamin D deficiency and insufficiency
- Corticosteroid
- Antiepileptic Drugs
- Immobilization
- Myeloma
- Thyrotoxicosis
- Idiopathic

No.	Test	Normal Range
1.	T. Calcium	8.5-10.2 mg/dL
2.	Calcium ionized	4.5-5.6 mg/dL
3.	PTH	10-65 ng/L
4.	Phosphorus	2.5 to 4.5 mg/dL
5.	Alkaline Phosphatase	Adults: 25-100 (U/L) Children: Less than 350 U/L
6.	25-OH-D	20 to 50 ng/mL 12 to 20 ng/ml at risk Less 20 ng/ml vitamin D deficiency
7.	1,25 OH-D	<16 years: 24-86 pg/mL > or =16 years: 18-64 pg/mL (female: 18-78 pg/mL)
8.	HCO3	22–26 mmol/L

Osteoarthritis

Osteoarthritis is a joint inflammation that results from cartilage degeneration, mainly a non-inflammatory disease of synovial joints.

There is no blood test for the diagnosis of osteoarthritis.

Structure of Joint Cartilage:

1. Glucosamine
2. Chondroitin
3. Hyaluronic acid
4. Collagen
5. Water

Chondroitin is a naturally occurring substance formed of sugar chains. Chondroitin help the body maintain fluid and flexibility in the joints. While Glucosamine is sugar protein that help develop and renew cartilage (the hard connective tissue mainly located on bones near joints in the body), and keep it lubricated for better joint movement and flexibility.

Clinic of Osteoarthritis Signs & Symptoms

- Joint pain - degenerative
- Stiffness following inactivity – 30 min
- Crepitus (crackling or popping sounds)
- Limitation of Range of Motion (ROM) – later stages (Restricted movement)
- Deformity
- Muscle weakness or wasting

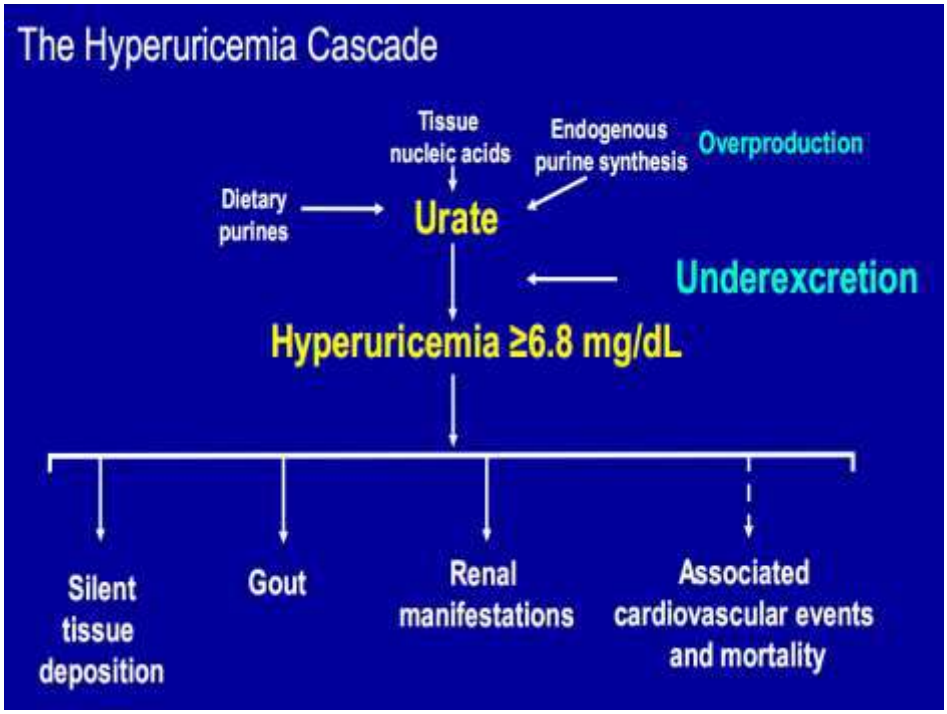
- Joint effusion (an increased amount of fluid within the synovial compartment of a joint).
- Joint enlargement and instability

Primary Prevention of Osteoarthritis

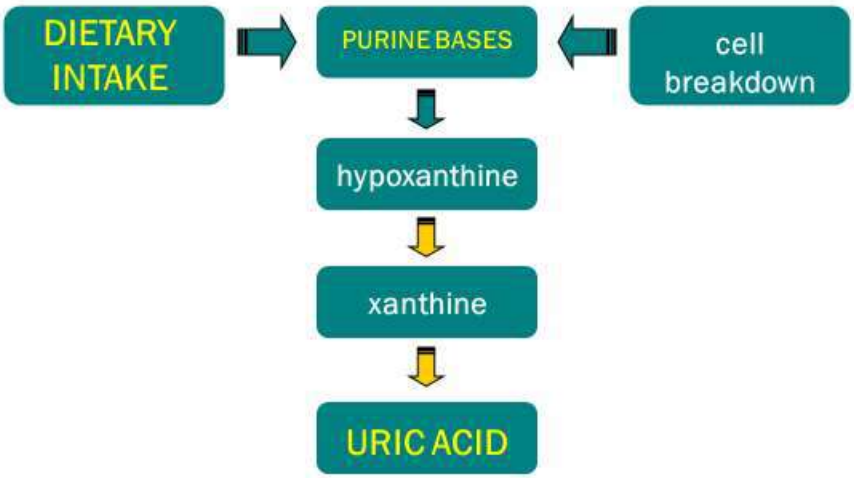
- Regular exercises
- Weight control
- Prevention of trauma

GOUT

In the 5th century BC: Hippocrates referred to gout as “unwalkable disease” and noted links between gout & lifestyle, demographics & other variables. Gout is heterogeneous disorder of urate metabolism.



Uric Acid Metabolism



High Purine Diet	Moderate Purine Diet	Low Purine Diet
Yeast	Meat	Eggs
Fish	Chicken	Cheese
Internal organs (Liver/spleen)	Vegetables	Milk/Tea
Duck	Legumes	Beverages
pigeon	AVOCADO Coffee	Fruits

Supplements

SAM-e (S-adenosylmethionine)

SAM-e acts as an analgesic (pain reliever) and has anti-inflammatory properties. It may stimulate cartilage growth and also affects neurotransmitters, such as serotonin, which reduce pain perception.

Boswellia Serrate

The active components (Boswellic acids) have anti-inflammatory and analgesic (pain-relieving) properties. It also may help prevent cartilage loss and inhibit the autoimmune process.

Capsaicin (Capsicum frutescens)

Capsaicin temporarily reduces substance P, a pain transmitter. Its pain-relieving properties.

Tumeric/Curcumin (Curcuma longa)

Curcumin is the chemical in turmeric that can reduce joint pain and swelling by blocking inflammatory cytokines and enzymes.

Avocado-soybean Unsaponifiables (ASU)

ASU blocks pro-inflammatory chemicals, prevents deterioration of synovial cells, which line joints, and may help regenerate normal connective tissue

Cat's Claw

Cat's claw is an anti-inflammatory that inhibits tumor necrosis factor (TNF), a target of powerful RA drugs. It also contains compounds that may benefit the immune system.

Case Study

Somaya, an active 58-year old woman, former teacher, presents to discuss her risk of osteoporosis, because her mother, aged 80 years, has just sustained a fracture to her neck of femur and has been diagnosed with osteoporosis.

She is not taking hormone replacement or any other medication. She has been using a soy herbal supplement and vitamin E 400 IU daily

There is no family history of breast cancer, she is nervous in general, she smokes five to ten cigarettes a day to maintain her healthy weight, she drinks two glasses of milk a day and is not on regular medications.

Her main sources of dietary calcium are milk on her breakfast cereal and some eggs & cheese about three times a week. Her lunch resume on vegetables and salad without bread, fear from weight gain, no sweet or nuts, also no dinner for the same reason. Somaya is 161 cm height and weight 50 kg. Somaya has a son and 4 daughters.

Questions

1. What risk factors for osteoporosis does Somaya have?
2. Would you order any investigations? □ No □ Yes (please specify for each selection)
3. What lifestyle changes would you suggest?
4. Would you start medication including minerals and/or vitamins? □ No □ Yes (please specify for each selection)
5. What other information would you ask to Somaya?
6. Is Somaya candidate for osteoarthritis? □ No □ Yes (please specify for each selection)

Liver Disease

The liver is the second largest organ in the body. It works hard, performing hundreds of complex functions, including:

- fighting infections and illness
- removing toxins (poisons), such as alcohol, from the body
- controlling cholesterol levels
- helping blood to clot (thicken)
- releasing bile, a liquid that breaks down fats and aids digestion

Liver disease doesn't usually cause any obvious signs or symptoms until it's advanced and the liver is damaged.

At this stage, possible symptoms can include loss of appetite, weight loss and jaundice.

The liver plays an important role in many bodily functions from protein production and blood clotting to cholesterol, glucose, and iron metabolism.

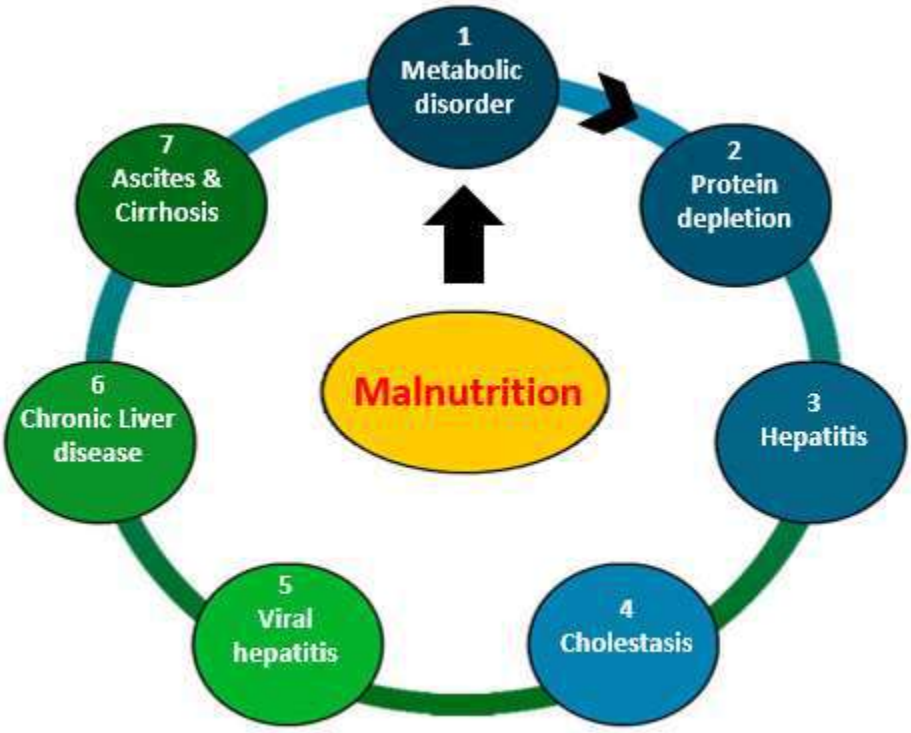
Types of liver disease

- **Alcohol-related liver disease** – where the liver is damaged after years of alcohol misuse, this can lead to cirrhosis (scarring of the liver)
- **Non-alcoholic fatty liver disease** – a build-up of fat within liver cells, usually seen in overweight people or those who are obese
- **Hepatitis** – which is inflammation (swelling) of the liver caused by a viral infection or exposure to harmful substances such as alcohol
- **Haemochromatosis** – an inherited disorder where there's a gradual build-up of iron in the body, usually around the liver
- **Primary biliary cirrhosis** – a rare, long-term type of liver disease that damages the bile ducts in the liver

It’s important to note that all types of liver disease can cause cirrhosis

In the Gaza Strip, liver disease is on the increase. Three of the main causes of liver disease are:

- **obesity**
- **undiagnosed hepatitis infection**



Role of the Liver in Nutrient Metabolism

Minerals

- Storage site for copper iron and zinc

Vitamins

- Site of the enzymatic steps in the activation of vitamins:
  - **thiamine**
  - **pyridoxine**
  - **folic acid**
  - **vitamin D (25 hydroxycholecalciferol)**
- Site of the synthesis of carrier proteins for vitamins: A, B12, & E
- Storage site for fat soluble vitamins A, D, E, & K

Hepatitis

Inflammation of liver, resulting from damage to liver tissue

- **Causes**
  - **Infection** with specific viruses (A, B, C)
  - *Usual* ***transmission***
    - Blood contact with infected persons
    - Ingestion of contaminated food or water
    - Excessive alcohol intake or exposure to certain drugs & toxic chemicals

- ***Symptoms***
  - Effects depend on cause & severity of disease
  - Fatigue
  - Nausea, anorexia
  - Pain in liver area
  - Liver enlargement
  - Jaundice
  - Fever
  - Headache, muscle weakness
  - Skin rashes
  - Elevation of liver enzymes (ALT, AST)
  - weight loss
  - loss of appetite
  - weakness
  - confusion
  - trouble concentrating
  - pain in the center or right upper part of belly
  - bloating and gas
  - dark urine
  - excessive sweat
  - constipation
  - dry and dark patches on neck and under arms

- **Viral Infection:**

Hepatitis A, Hepatitis B, and Hepatitis C are diseases caused by three different viruses. Although each can cause similar symptoms, they have different modes of transmission and can affect the liver differently. **Hepatitis A** appears only as an acute or newly occurring infection and does not become chronic. People with Hepatitis A usually improve without treatment.

Hepatitis B and Hepatitis C can also begin as acute infections, but in some people, the virus remains in the body, resulting in chronic disease and long-term liver problems. There are **vaccines** to prevent Hepatitis A and B; however, **there is not one for Hepatitis C.**

If a person has had one type of viral hepatitis in the past, it is still possible to get the other types.

Hepatitis B and Hepatitis C NOT spread by

- **Sharing eating utensils,**
- **Breastfeeding, (unless nipples are cracked and bleeding)**
- **Hugging,**
- **Kissing,**
- **Holding hands,**
- **Coughing, or sneezing.**
- **It is also not spread through food or water.**

Supplements:

- **Milk thistle:**

Silymarin, the active ingredient in milk thistle, researchers found the herb rejuvenates and repairs damage to the liver. Dose 600-800mg/day

- **Curcumin:**

The active ingredient in the spice turmeric, curcumin has a long list of benefits, including heart health and fewer signs of aging. A recent study has found that curcumin protects liver cells from the type of damage commonly found in fatty liver and related conditions. Suggested dose 500 mg daily.

- **Digestive enzymes**

These enzymes target specific types of foods. For example:

  - **Proteolytic enzymes** help digest protein.
  - **Amylases** target carbohydrates.
  - **Lipases** help with fats.

Combination products include all three types, so these are a good place to begin.

- **Artichoke**

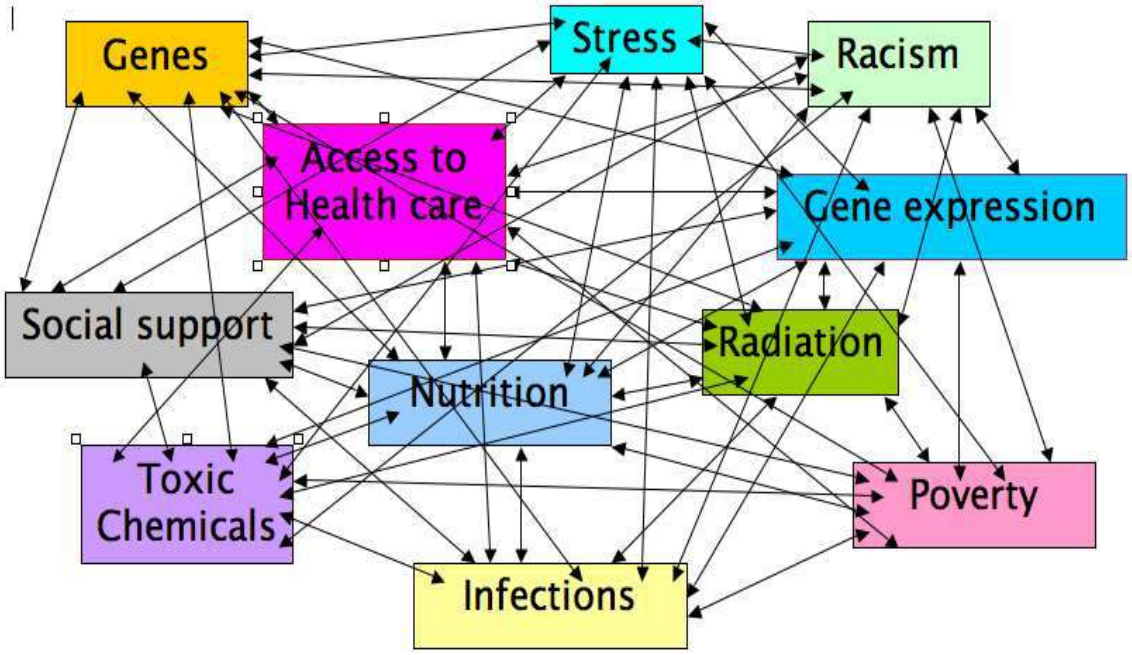
Artichoke, also known as Cynara scolymus

- **Probiotics**
- **Multivitamins & Minerals**

Gynecological Diseases

Women's health refers to the health of women, which differs from that of men in many unique ways.

Being a man or a woman has a significant impact on health, because of both biological and gender-related differences. The health of women and girls is of concern because, in many societies, they are disadvantaged by discrimination rooted in sociocultural factors.



Psychosocial Health

Factors That Influence Women's Health

- Hormonal Influences.
- Social Factors.
- Morbidity and Mortality in Women.
- Women's Health across the Lifespan.
    - Birth to Young Adulthood.
    - 15 to 44 Years.
    - 45 to 64 Years.
    - 65 Years and Older.
- History.
- Physical Examination.

• Laboratory Tests.

Estrogen vs Progesterone

Estrogen	Progesterone
• A steroid hormone, Produced by the adrenal glands. • Secreted by the ovary prior to ovulation. • Secretion controlled by FSH. • Controls and regulates all female characters and reproductive functions. • In pregnancy, induce enlargement of uterus and breast.	• A steroid hormone, Produced by the *corpus luteum* , the placenta and the adrenal glands. • Secretion controlled by LH. • It controls growth and maintenance of endometrium of uterus. • In pregnancy, reduce the contractility of uterus, and stimulate the mammary glands.

Vaginitis

Vaginal Environment:

- Normal vaginal discharge is clear to white, odorless, and of high viscosity.
- Normal bacterial flora is dominated by lactobacilli – other potential pathogens present.
- Acidic environment (pH 3.8-4.2) inhibits the overgrowth of bacteria
- Some lactobacilli also produce H_2O_2, a potential microbicide

Usually characterized by:

- Vaginal discharge
- Vulvar itching
- Irritation
- Odor

Common types

- Trichomoniasis (15%-20%)
- **Bacterial vaginosis (40%-45%)**
- Vulvovaginal candidiasis (20%-25%)

Causes:

- Mucopurulent cervicitis
- Herpes simplex virus
- Atrophic vaginitis
- Allergic reactions
- Vulvar vestibulitis
- Foreign bodies

Supplements:

- Black cohosh (*Cimicifuga racemosa*)
- Dong Qui *(Angelica sinensis)*
- Red Clover *(Trifolium pretense)*
- Chasteberry (Vitexagnus-castus)

- Wild yam(Dioscoreavillosa)
- Milk thistle (Silybummarianum)
- American ginseng (Panax ginseng)
- Yarrow (Achilleamillefolium)
- Ginkgo biloba
- Vitamin B6
- Vitamin E
- Magnesium

Urogenital System

- The urinary system consists of the kidneys, ureters, bladder and urethra.
- Infections of the urinary tract (UTIs) are the second most common type of infection in the body. You may have a UTI if you notice:
    - Pain or burning when you use the bathroom
    - Fever, tiredness or shakiness
    - An urge to use the bathroom often
    - Pressure in your lower belly
    - Urine that smells bad or looks cloudy or reddish.
    - Acute and chronic infections of the urogenital tract and bladder are more common in women than in men owing to differences in the pelvic anatomy.
    - As in irritable bladder, increased urinary frequency and painful urination are the typical presenting symptoms. (Bladder infections are the most common)
    - Urine tests for identification of the bacterial pathogen facilitate the differential diagnosis and selection of an appropriate antibiotic.

Possible signs of a bladder infection

- A burning sensation when you urinate.
- Feeling like you need to urinate more often than usual.
- Feeling the urge to urinate but not being able to, leaking a little urine.
- Urine that smells bad.
- Cloudy, dark or bloody urine.

Dysuria

- Dysuria is a generic term referring to all conditions associated with painful or difficult urination.
- This includes mild to moderate urinary tract infection and stone-related urinary retention.

Bladder Control

- The body stores urine in the bladder.
- **During urination**, **muscles** in the wall of the bladder contract, **forcing** urine out of the bladder and into the urethra.
- At the same time, **sphinctermuscles** surrounding the urethra **relax**, letting urine pass out of the body.
- Incontinence will occur if the bladder muscles suddenly contract or muscles surrounding the urethra suddenly relax.
- Spinal nerves control how these muscles move.

Supplements:

- **Cranberry**

- ❑ Cranberry contain: **Acids** (citric & benzoic acid), **Carbohydrates** (Fructose), **Phenolics**(Anthocyanins and proanthocyanidins) and **Vitamin C**
- ❑ The effectiveness of cranberry juice in treating UTI results not from its acidifying properties **but as a result of its ability to prevent the microorganisms from adhering to the epithelial cells that line the urinary tract.**
- ❑ Initially it was thought that the antibacterial effect of cranberry juice was due to its ability to acidify urine and, therefore, to inhibit bacterial growth.

Precaution:

A significant rise in urinary oxalate levels, prompting a caution that regular use of cranberry may increase the risk of kidney stone formation in patients with a history of oxalate calculi.

Interactions:

Warfarin

- **Nettle**

The primary use of nettles is in the management of symptoms of UTI even symptoms due to benign prostatic hyperplasia (BPH). Nettles are also used in arthritis and allergic rhinitis. A role in diabetes is being investigated in animals.

Contraindications

Due to the effects on hormone metabolism, nettle preparations should not be used in pregnancy and lactation or in children younger than 12 years.

Side Effects

Nettles are known primarily for their ability to induce skin irritation following contact. The short-term itching is caused by the release of histamine, serotonin, and choline from the hairs and spines of the leaves and stem and generally goes away spontaneously. *Radix urticae* extracts and other nettle preparations are generally well tolerated, with minor, short-term stomach effects, including diarrhea, stomach pain, and nausea.

Urinary Incontinence

- Urinary incontinence is **loss** of bladder control.
- In other words **unintentional** loss of urine.
- Symptoms can range from mild leaking to uncontrollable wetting.
- It can happen to anyone, but it becomes more common with age. ***BUT Aging does not cause incontinence***
- Caused by the altered mental state.
- Sterilizing urine **did not help**.
- Most bladder control problems happen when **muscles** are too weak or too active.
- If the muscles that keep your bladder closed are weak, you may have accidents when you sneeze, laugh or lift a heavy object.
- This is **stress** incontinence.
- If bladder muscles become too active, you may feel a strong urge to go to the bathroom when you have little urine in your bladder.

- This is urge incontinence or overactive bladder.
- There are other causes of incontinence, such as prostate problems **(blockage from an enlarged prostate)** and **nerve damage**.
- High **calcium** levels & Low **Magnesium** levels.

Incontinence occurs if the bladder muscles contract or the muscles surrounding the urethra relax without warning.

Bedwetting/sleep wetting/Enuresis

- Bedwetting, which is also called nocturnal enuresis, is the involuntary passage of urine while asleep.
- Two types of bedwetting occur:
    - *Primary Nocturnal Enuresis* (PNE) is when a child has not yet stayed dry on a regular basis.
    - *Secondary* Nocturnal Enuresis is wetting developed after being continually dry for a minimum of six months.

Causes of Bedwetting

- Heredity.
- Their bladder hasn't grown as fast as the rest of their body and everything just needs to catch up.
- Others might not be producing enough of an important hormone (AntiDiuretic Hormone) at night. (In the absence of antidiuretic hormone, the collecting ducts are virtually impermiable to water, and it flows out as urine).
- Polyurea. Aldosteron, botamania

- Some are going through a stage where they just sleep too soundly.
- Lazy !! (Negative/positive)??

What is the basic problem in primary bedwetting?

- The fundamental problem faced by children with primary bedwetting rests in the inability while asleep to recognize neurologic messages sent by the full bladder to the sleep arousal centers of the brain.
- In addition, bladder capacity is often smaller in bedwetting children than in their peers.

What causes secondary bedwetting?

- Urinary tract infections,
- metabolic disorders (e.g. various types of diabetes),
- external pressure on the bladder (e.g. extreme constipation by a large rectal stool mass)
- as well as neurologic disorders of the spinal cord must be considered among the causes of secondary bedwetting.

Treatment of Bedwetting

Lifestyle

- One of the simplest bedwetting treatments is to **limit fluids beforebedtime especially caffeinated or carbonated drinks.**
- Self-esteem or social events

Supplements

- **Honey** before bedtime.
- Calcium
- **Magnesium**.

Prostatitis & Benign Prostatic Hyperplasia (BPH)

BPH Causes

The First Theory

The cause of BPH is not well understood.

One theory says that the testosterone, a male hormone and small amounts of estrogen, a female hormone are produced in men throughout life.

As age advances, the amount of active testosterone in the blood decreases, leaving a higher proportion of estrogen.

The Second Theory

- This theory focuses on dihydrotestosterone (DHT), a substance converts from testosterone.
- The result of increase in DHT is an excessive overgrowth of prostate cells, resulting in an enlarged prostate gland that constricts the urethra and interferes with normal urinary functioning.

Prostatitis

There are two kinds:

- Prostatitis is prostate inflammation (pain and swelling) that usually occurs in younger to middle-aged men and does not necessary include the symptoms of enlargement.

    1. Nonbacterial (more common) 75% ;

    2. Bacterial 25%

Lifestyle Recommendation

- Follow a basically healthy diet and increase zinc containing foods such as seafood , pumpkin seeds, eggs and brewers yeast.
- Reduce cholesterol (fried foods and most vegetable oils).
- Eat oily fish such as wild salmon, mackerel, sardine and herring at least three times a week.
- Cut out sugar and caffeine (coffee, tea, coca-cola).
- Drink at least 1½ litres of clean water per day. At first symptoms may worsen, as the bladder has to adjust, but this will improve.
- Eat ¼ - ½ cup of pumpkin seeds a day.

Supplements:

- Zinc.
- L-Carnitine
- β-Sitosterol
- Curcubitapepo (Pumpkin).
- Serenoarepens (Saw palmetto).
- Prunusafricanum (Pygeum).
- Urticadioica (Nettle).

Saw Palmetto

- Inhibits the conversion of testosterone to DHT in the prostate, has an antiestrogenic effect, and helps improve all symptoms of BPH. Recommended dosage is 320 mg of extract daily.

"similar with proscar mechanism"

Label Info

Product Information

Each softgel capsule contains:

Saw Palmetto Berry Extract	80mg
(Serenoa repens) (berries) (Standardised to contain 85-95% Free Fatty Acids and Sterols)	
Pygeum Africanum Extract	10mg
(Pygeum africanum) (bark) (Standardised to contain 12% Total Sterols)	
Bearberry	Extract 5mg
(Arctostaphylos uva ursi) (leaf) (Standardised to contain 10% Arbutin)	
Pumpkin Seed Oil Extract	40mg
(Curcurbita pepo)	

Directions:

Take one or two capsules daily, preferably with a meal.

Do not exceed stated dose.

Other Ingredients:

Capsule Shell (Gelatine, Glycerine, Colours (Caramel, Titanium Dioxide)), Saw Palmetto Berry Extract, Soya Bean Oil, Pumpkin Seed Oil Extract, Emulsifier (Soya Lecithin), Pygeum Africanum Extract, Anti-Caking Agent(Silicon Dioxide), Bearberry Extract, Maltodextrin, Vitamin E (as Mixed Tocopherols).

Contains (or contains an ingredient/s derived from) nuts, soya and sulphites.

Cancer

“Good cells … Gone bad” …. “Cancer is multiple disease”

WHY NATURAL COMPOUNDS?

- There are three main reasons why natural compounds are worth studying:
    - **First**, natural compounds that show anticancer potential fit into the mechanism-based approach as perfectly as a hand fits into a glove.
    - **Second**, as a science, the field of natural compound research can contribute to a greater understanding of cancer and a faster development of successful therapies.
    - **Third**, we must study natural compounds because they are already being used in cancer treatment (vincristine, taxol, etoposide)(and in the treatment of other diseases).

Causes:

- Environment medium.
- working conditions (occupational exposure).
- Attributable to lifestyle (Smoking).
- cytostatic agents drugs
- Diet
- Food
- Food storage/conservation / additives
- Viral Infection
- Bacterial infection
- Chemicals (cigarette, polycyclic aromatic, aflatoxins)

- Radioactivity & Electromagnetic Radiation

Q. What can be done to reduce the risk of nutrition-associated cancer?

Answer: "A Varied Diet"

Treatment Measures

- The basic goal of therapy is to strengthen the immune defenses through prophylactic measures through:
    - eating healthy foods, getting enough sleep, learning to relax, avoiding stress, and building up one's resistance to disease (e. g., through cold baths or showers, temperature stimulation, alternating hot-and-cold showers, regular sauna use).
    - Supplements providing vitamin E, vitamin C, and trace elements can also be recommended.
    - Immunomodulators can stimulate or diminish immune responses, independently of the mode of administration and concentrations used.
    - Plant-derived immunomodulators work unspecifically; that is, they activate specific immune system function via the release of mediators and cytokines through their polysaccharide or lectin constituents.

  As a result, from the above, this lead to increase the readiness of the immune system.

Supplements

Antioxidants	**Ginger**	**Ginseng** (INHIBIT MAST CELL GRANULATION)
Probiotics	**Curcuma**	**Flavonoids** (INHIBIT PROTEIN TYROSINE KINASES)
Vitamin D	**Ephedra**	**White tea** (INDUCE p21 OR p27activity)
Odorless Garlic	**Silymarin**	**Omega 3 (**INHIBIT PROTEIN KINASE C)

GOOD LUCK!