



# UNIT-14 Anti-Aging Formulas

## Learning Outcomes

**By the end of this unit the learner will be able to:**

- ✓ Discuss how healthy nutrition can help making people look younger in the long run.
- ✓ Describe healthy life style practices for maintaining good health and healthy skin.

## Unit 14

### Anti-Aging Formulas

The best way to continue looking younger is to aim to incorporate healthy nutrition and lifestyle practices and to back up these with natural skin care.

#### The Science of Nutrition

The onset of senescence brings about several non-communicable diseases, most of which are directly related to the shortage of certain nutrients in the ageing bodies. Some older people are at a risk of developing nutrient deficiencies, which can result in chronic diseases, which decreases the life expectancy or quality of living.

Up until now, there were several misconceptions about the nutrient requirements for elderly citizens, mostly because health data required for nutrient estimation, which was not directly derived from the senile generation, but was extrapolated from the studies performed on younger people. However, recent studies have revealed some new information about the nutritional requirements of the elderly. Scientific studies now aim to estimate, not only the amount of nutrients required for preventing a deficiency, but also, the nutrition necessary for preventing a chronic non-communicable disease or its symptoms.

The elderly usually have lower energy expenditure and slower metabolic rates, which means that they consume less amounts of food than the younger generation. A healthy, balanced diet is, therefore, necessary in order to incorporate a variety of minerals, vitamins, proteins and carbohydrates.

They should try to integrate the following foods in their daily diet:

- 1) It is vital to consume food, which is rich with a variety of vitamins and minerals. Nutrients, such as, riboflavin and vitamin B6 are particularly important to fight diseases such as oesophageal cancer, immune dysfunction, infectious diseases, and other chronic disorders.
- 2) Since the elderly prefer soft easy chewable foods such as bread, cereal and pasta, they should consume products made from whole grain, additionally enriched/ fortified with vitamins and minerals, instead of refined flour, which does not contain adequate amounts of Vitamin B.
- 3) Dairy products provide sufficient amounts of calcium and vitamin D, essential for maintaining strong bones. The elderly should prefer consuming low fat dairy products within the milk, butter, yoghurt and cheese categories, since these are easier to digest and also, non-fattening.
- 4) Fresh fruits and vegetables provide a rich source of nutrients. Hence, they must be consumed four to five times a day. Fruits, which are hard to chew, can be consumed in a liquid shake form. Vegetables can be lightly sautéed, boiled or eaten raw as a salad. The elderly people should prefer dark coloured fruits and vegetables, since they are rich in antioxidant nutrients and Vitamin B folate.

- 5) Dietary fibre is an essential constituent present in beans, whole grains, fruits, nuts, and vegetables. It aids the process of digestion and prevents constipation. The elderly should add fibre to their diet, but in moderate proportions, in order to avoid problems, such as, bloating, gas, and cramps.
- 6) Foods, which are rich in nutrients such as, dried beans, nuts, eggs, fish, meat, and poultry should be consumed as per the individual requirements. The method of preparation should be customized as per taste, preference and easy of chewing.
- 7) The last but most important part of the daily nutritional requirements for the elderly is water in any fluid form. With age, the sensation of thirst decreases, so it is vital to take in fluids in the form of juice, shakes, green tea, or plain water. This will keep all the body processes functioning properly.

Adequate, balanced, nutrient rich foods should therefore be the highest priority for the elderly citizens to ensure long, healthy, disease-free life

### **Diseases Associated with Senescence**

The advent of senescence is the time to ponder upon the changes the ageing body is going through, and understand the types of probable old age diseases in order to cope with them gracefully. The primary cause for the abundance of old age diseases is the deterioration of body cells and their inability to heal and multiply. The ageing cells are unable to generate disease-fighting antibodies, which is why elderly people are more prone to a plethora of infectious diseases. There are several markers pronouncing the arrival of old age, most common of them are wrinkled skin, reduced muscle strength, stooping posture, loss of teeth, salt-and-pepper hair or baldness, brittle and weak bones, joint stiffness and pain, hardened arteries, vision errors, hearing impairment and incontinence (reduced control over bodily functions).

Some mental symptoms can also occur, including absentmindedness, amnesia, poor judgment, and child-like behaviour. While the physical indicators of old age are quite prevalent, the psychological changes depend on the ageing of cortical brain cells, which can vary from person – to - person.

Elderly people are also more prone to diseases such as diabetes, arthritis, osteoporosis, pressure sores, cancer, high blood pressure, stroke, COPD - or Chronic Obstructive Pulmonary Disease, dementia, Alzheimer's disease, and amnesia. Depending on the severity of these diseases, an elderly person can experience biological deterioration, physical or mental disabilities, permanent handicaps or impairments, increased dependency on others, or reduced life expectancy.

It is, therefore, vital to understand the causes of old age diseases, and defer their occurrence through nutritious diet, regular exercise and positive mental attitude. A few old age diseases, causes and prevention techniques are mentioned below:

- Diabetes - Diabetes is caused when the pancreas cannot make sufficient amounts of insulin and whatever small amount is produced is ineffective as body cells develop insulin resistance. Heredity is the most common cause of diabetes. Diabetes is not directly caused by excessive sugar intake or increased stress, but factors such as imbalanced diet, smoking and drinking, obesity, high blood

pressure, and age make the body prone to increased virus infections and pancreatic dysfunction. The best way to prevent diabetes is embracing an active lifestyle with healthy balanced diets, regular exercise, and weight control.

- Osteoporosis - When the body's bone forming cells are unable to generate new bone as fast as it is removed, there is a reduction in bone density, resulting in osteoporosis. Women especially have a higher risk of osteoporosis after menopause, due to the reduction in the oestrogen hormone, which protects the bones and keeps the bone forming cells functioning properly. The best way to prevent bone deficiency is to remain active and mobile, incorporate strength-training exercises, consume foods rich in calcium, magnesium, Vitamin D, and essential fats; also, we must increase intake of soy and flax.
- Cancer - Cancer has multiple causes, similar to its manifestations in the different tissues of the human body. Several factors can cause cancer including carcinogens or cancer inducing substances, genetic predisposition, age, environment, viruses, immunity levels and diet. The best way to avoid different types of cancer is to maintain a healthy weight and increase dietary consumption of foods, such as, fruits, vegetables, fibre, soy, and other natural phytonutrients.

## **Healthy Eating**

No individual food contains everything that we need to stay healthy, so the golden rule is eat a variety of foods each day. Eating healthily does not mean cutting out foods one enjoys however, a person can even do well to eat some foods less often and/or in smaller portions.

### **Eating Five Portions of Fruits and Vegetables each Day**

Research suggests people who eat plenty of fruit and vegetables are less likely to develop heart disease, certain cancers and eye diseases. To help us reach our target of five, we should think of all the fresh, frozen, canned, or dried fruits and vegetables that we like and can afford. Five different coloured ones should be chosen to have with or in-between meals.

### **Eating Fish at least Twice a Week**

One should aim to have one portion of white fish such as haddock and another of oily fish such as salmon, mackerel, or sardines. Oily fish are rich in Vitamin D and a type of fat shown to reduce the risk of a heart attack.

### **Eating Fewer Salty Foods**

Salt is essential for our health but eating too much of it increases the risk of high blood pressure and strokes. Checking the labels on foods is also important, especially in processed meats, savoury snacks, biscuits, cheese, bacon, some soups, and ready meals – 75% of the salt we eat is in food when we buy it.

### **Drinking Plenty of Fluid, around 6–8 Cups each Day**

This does not only have to be water. Tea, coffee, fruit juice, or squash will do. It is especially important to drink plenty in hot weather.

### **Preventing Constipation**

Taking enough wholegrain cereals and fruit in the diet can help with this problem. Physical activity helps keep bowels moving properly.

### **Vitamin Supplements**

A person eating healthy diet gets all the vitamins he needs. But some people may need extra Vitamin D, if they are rarely out in the sun or cover their skin for cultural reasons because Vitamin D comes mainly from sunshine rather than from food

### **Staying Active**

Keeping active helps us to feel more energetic. Specific benefits include helping us to:

- manage high blood pressure and angina;
- keep weight under control;
- maintain regular bowel movements;
- stimulate a poor appetite;
- strengthen muscles and bones; and
- alleviate discomfort, especially if you have arthritis or Parkinson's.

Regular exercise increases production of brain chemicals that lift our mood and make us feel happy so it can also be a good way to deal with stress and anxiety. Developing and maintaining stamina, strength, flexibility, and balance are particularly important as one gets older:

- stamina helps us walk any distance, swim, and mow the lawn;
- strength helps us climb stairs, carry shopping bags, rise from a chair, and open a container;
- flexibility helps us bend down, get in and out of a car, wash our hair, and remove a sweater; and
- balance helps us walk and climb steps confidently and stand up from a sitting position.

One should aim to build up to 30 minutes of moderate activity on five or more days a week. It does not have to be down all at once – two sessions of 15 minutes or three sessions of 10 minutes are just as good. Moderate activity will leave the person feeling warm and a little breathless.

### **Skin**

The skin is the largest organ of our body. The liver is the main organ for detoxification, but our skin also plays a major role in the process of detoxification. Some toxicity can be released from the skin through

sweat or skin eruptions. So, enhancing our overall internal health by reducing exposure to toxicity will also enhance the health and appearance of the skin. Our skin's acid mantle performs an important function as part of our immune system. The health of our skin reflects our overall health. Infect our skin tell a story about our current state of health. It goes through changes: it can be dry, moist, pale, dark or inflamed. It might develop a rash, turn yellowish in colour, break out in spots, itch, burn, or become prematurely wrinkled. All of these signs are of what is going on inside the body.

### **Free Radicals**

The skin cells are always dying off and are being replaced by the new cells. This means that we have an opportunity to enhance the character of our skin by enhancing the general health, so that as the old cells are replaced with new cells the new cells will be healthy cells. One of the skin's greatest enemies is the inflammation caused by free radical damage. Free radicals age our body faster than anything else.

Free radicals are molecules that are incomplete because they are missing an electron. They roam our body, seeking to be complete. Electrons are tiny particles that are negatively charged. Free radicals are usually created through the process of burning oxygen. Our own metabolism naturally does this, so we make our own free radicals just by living, breathing and metabolising. A free radical's mission is to find an electron it can steal and make its own. Unfortunately, it will steal electrons from places, such as, our own DNA, red blood cells, or cell membranes. Because free radicals are produced as a by-product of normal metabolism, our body has the ability to deal with them.

### **Inflammation and Oxidative Stress**

We are not only exposed to the free radicals that our body makes as a by-product of our own metabolism. Inflammation in our body also causes the production of free radicals. Exposure to toxicity such as environmental pollution and radiation also creates free radicals. Radiation exposure includes when the body gets too much sun exposure. Because oxygen is initially involved in the process of free radical creation, the damage that the free radicals do is called oxidative stress. A better description of oxidative stress is: it is a form of rusting inside. Think of something that is left outside in the rain and weather. It looks old. In the same way we can understand that exposure to oxidative stress is ageing. One of the worst sources of chemicals that generate free radicals is cigarette smoke. We can see the damage in the faces of people who smoke a lot. Their skin is usually prematurely aged and wrinkled. This is because the free radicals damage the collagen in the skin.

### **Antioxidants**

Now the question is how can we counteract the damage done by oxidative stress? Apart from reducing our exposure to pollutants, such as, cigarette smoke, we can include foods in our diet that contain the antioxidant nutrients. The best known antioxidant nutrients are vitamin A and betacarotene, vitamin C, vitamin E and the mineral selenium. All these antioxidants work together so it is best to include all of them.

Antioxidants travel throughout our body and donate one of their electrons to each free radical that is seeking one. When they do this, the free radicals stop damaging the tissues.

Antioxidants regenerate each other and that is why it is best to include all of them in the diet. Various plant chemicals also contain antioxidants, even though they are not vitamins or minerals. These chemicals are called phytochemicals. Phytochemicals give us a powerful protection against oxidative stress. Their protection is so powerful that it is believed that phytochemicals are the reason a plant-based diet is so good for our health. These phytochemicals are protective against cancer and other degenerative diseases. There are many different phytochemicals and these are related to the pigment in fruits and vegetables. Therefore it is a good idea to think of a rainbow when choosing fruits and vegetables. Include lots of different colours of these foods in the diet. A diet rich with foods containing antioxidants will help us have a healthy glow to our skin.

### **Essential Fats**

We know that there are some fats which are considered good for our health and we need them in our body. A good balance of these fats is essential for the skin's health. Eating a diet that is extremely low in fat or that contains no fat at all will result in our skin becoming more dry and wrinkled. This is because it is deficient in essential fats.

We need an array of healthy fats in our diet to keep our skin moist and supple. At the same time it is also important to keep the unhealthy fats away. These include hydrogenated fats and trans fats. Polyunsaturated fats, such as vegetable oils, are subject to becoming damaged and rancid. These fats are especially damaging when used in frying. When this happens and we consume these fats, we are actually getting a lot of free radicals in our diet. It is best to avoid any fat that has been damaged.

### **Dehydration**

Dehydration is also a reason for skin damage. Our body contains about 70% of water. Since, we lose water through urine, sweat and also through our breath, it is very important for us to replenish this lost water. Water not only rehydrates our skin it also helps to flush our toxicity.

### **Ageing and Sugar**

Sugar and refined processed foods also contribute towards pre-mature ageing because they can lead to unbalanced blood-sugar levels. Processed foods often contain chemicals such as artificial colouring and preservatives. Our body needs to detoxify these chemicals. Refined foods also lead to insulin resistance. Insulin resistance is an inflammatory condition which results in the creation of many free radicals. Sugar and refined carbohydrates can cause another problem. Glucose that is not used for energy or stored as fat, can attach itself to proteins in our body. This process is called glycation and these sugary proteins are called advanced glycated end products, or more appropriately, 'AGES', which is that they do. These sugary proteins are very inflammatory. Food allergies and sensitivities are also a cause of inflammation. Avoiding the foods one has the problem with can help to reduce the formation of free radicals.

## The Lymphatic System and Health

The Lymphatic System is a network of vessels and, like our Circulatory System, it flows throughout the whole body. Lymph is the fluid that flows through these vessels. Lymph-nodes consists of fluids which come from the spaces between the cells. It collects any waste products from metabolic activities that have taken place within our cells. It parallels the circulatory system through most of our body: fluid is exchanged between the two systems and dotted along these lymph vessels are the lymph nodes.

Lymph nodes contain cells of our immune system that monitor the lymph that flows through them, seeking out and destroying any pathogens that are contained in the lymph. Unlike our Circulatory System, which uses our pumping heart for assistance, the Lymph System does not have an organ to help the lymphs move around our body. The only way the lymphs can move is when our muscles push it through the body. The primary muscle that does this is our diaphragm, which expands when we breathe and squeezes the major lymph vessels to push lymph through.

Exercise is another way through which we can enhance our lymph flow. By doing regular exercise we allow our contracted muscles to squeeze and push lymph through the body. One of the best exercises is rebounding. A rebounded makes us jump as if we were skipping the rope, but to do so without putting any stress on our joints. Walking is another beneficial exercise that is not stressful to our body. Manual lymph drainage is a form of massage therapy where the therapist helps us to move our lymph by using specific massage strokes.

### Dry Skin Brushing

Dry Skin Brushing is very beneficial for the lymphs and it also helps to keep the skin fresh and glowing, as it removes dead cells and helps new ones to breathe. It can be done in the morning before shower or bath. It stimulates both blood and lymph circulation and also helps removing old dead cells. Daily brushing can lead to soft, glowing, and fresh looking skin. To Dry Skin Brush, one can start from the sole of the feet and then, can gradually move up to the toes, feet, and ankles. The front and back of the legs should also be brushed.

Dry Skin Brushing is always done upwards towards the heart, making upward sweeping strokes. The brush strokes should be strong enough to encourage circulation to the areas leaving it healthy and pink, but not so strong that the skin is left damaged anyway. At the abdomen area the movements should be circular done in anti clock wise, are done by brushing in the direction of the colon's natural movements. Movements at the back and chest should be upwards towards the heart. Fingers, hands, arms, and elbows are also brushed in the direction of the heart.

Finally, the neck, upper back, and upper chest are brushed downwards towards the heart. A natural bristle or plant fibre long handled brush is used for this purpose, which is not shared with anyone else. Most health food stores carry dry skin brushes. The entire skin brushing process should take about 3-5 minutes. Skin brushing should never be done on an open wound or over large raised moles. If the person has any rash, he should not do Dry Skin Brushing. The face, large varicose veins, the genital area, and nipples are

sensitive areas of the body that should always be avoided while Dry Skin Brushing. After the brushing, one can should take a shower to wash off the exfoliated cells.

### **The Skin Conditions that Proper Nutrition can Help - Cellulite**

Cellulite is the bumpy skin which occurs when the supportive tissues in the skin become weak and allow fat cells to move around. Having healthy skin can help to better control cellulite. Vitamin C is an important nutrient for the skin, as are all antioxidants.

### **Eczema**

Eczema is skin inflammation which is linked to food allergies. Identifying problem foods and eliminating them from the diet can help with this problem. Gluten, dairy, peanuts, and eggs are the most common problem foods.

### **Acne**

There can be several causes for acne. Hormonal imbalance is one of them. Since sugary and refined foods can lead to insulin resistance or high levels of insulin in the blood, eliminating these foods and focusing on a whole food diet can be helpful. However, acne can also be related to the imbalance of fats or a deficiency of the essential fats the body.

### **Further Reading:**

- ✓ *The Green Pharmacy Anti-Aging Prescriptions: Herbs, Foods, and Natural, (2001), By James A. Duke, PhD, Michael Castleman*
- ✓ *The Anti-Aging Solution: 5 Simple Steps to Looking and Feeling Young (2004), By Vincent Giampapa, Ronald Pero, Marcia Zimmerman*