

Minimising Nutrient Losses

Cooking is not only a culinary art but also a source of nutrition, taste and good health. Becoming aware of what happens to food when it is cooked or overhandled will enable us to know how to retain nutrients. All foods which undergo processing are subject to some degree of loss of nutrients. The loss may be due to trimming and removing the skins of fruits and vegetables. Nutrients, particularly vitamins, present in seed coats and germ of cereals are lost during milling. High temp. used for processing and added chemicals have detrimental effect on the vitamins.

The most easily destroyed nutrients are the water- soluble ones e.g. Vitamin B- complex and Vitamin C are lost by exposure to excess water, air, heat and light.

Fat soluble Vitamins on the other hand are more stable. Cooking in acid medium has a protective effect against Vitamins.

Proteins are not lost much in daily cooking. They may get denatured if overcooked.

Minerals leach out from boiled legumes but their loss is less than vitamins.

It is important that all efforts should be made to retain the nutritive value of foods during preparation. Another important objective in food preparation is to make the food palatable. It is important to ensure that while retaining the nutritive value of foods, palatability is not sacrificed e.g. some loss of thiamin occurs when beans are cooked. As we do not relish uncooked beans, we do cook beans and try to take care in the preparation to ensure that the loss is minimal. Thus we cook beans in just enough water to avoid loss of nutrients in the cooking water. We should cook food for the minimum time required. We can decrease cooking time by using a pressure cooker or even a microwave, if possible. We can prepare the food just before serving so that reheating before serving is avoided.

Important points for retention of nutrients:

- When peeling the skin of vegetables, do peel as thinly as possible. Nutrients in fruits and vegetables are concentrated just below the skin, so peeling before boiling increases the loss of vitamin C, Folic acid and other B-vitamins. The peels of carrots, radish and ginger can be scraped instead of peeling. Peel only when absolutely necessary.
- Do not cut vegetables into very small cubes as each small part comes in contact with oxygen destroying vitamins.
- Do not soak vegetables in water for long time to prevent discolouration. Almost 40% of the water soluble vitamins and minerals are lost in the soaking water. If you must soak, use up the soaking water to knead dough, prepare soups and gravies.
- Root vegetables should be boiled with skins on and then peeled after boiling. This helps the nutrients to migrate in the centre of the vegetables helping better retention of its nutrients.
- Salads should be prepared just before serving and should be served in closed dishes to avoid excessive exposure to air.
- Do not throw away the excess water drained after boiling foods. When preparing cottage cheese, the water leftover after curdling is called whey. It is extremely rich in good quality proteins and vitamins and should be used up in preparing gravies, kneading or simply can be had as a refreshing drink after flavouring with lemon juice, salt and pepper.

- Do not keep milk open or exposed to light as considerable destruction of riboflavin can occur.
- Baking soda makes cooking water alkaline and thus helps retain the colour of the vegetables as well as speeds up the cooking process but it destroys thiamin and vitamin C and hence should not be used.
- Cooking vegetables when exposed to atmosphere before serving may also result in loss of vitamin C. It is preferable to cook vegetables in minimum amount of water, keeping the vessel covered and to consume it as soon as possible. Reheating cooked food further destroys vitamins.
- Do not use copper utensils for cooking. Copper destroys vitamin C.
- Cook foods for the minimum required time because longer we cook the foods, more are the nutrients lost.
- Wash vegetables before cooking.
- Salads should be prepared just before serving.
- Use of acid foods such as lime juices, tomatoes, vinegar or yoghurt as dressings in salads prevents loss of vitamin C as it is stable in acid medium.
- Use lids while cooking foods as it saves fuel as well as volatile flavours and nutrients.
- Cut the foods e.g. potatoes after boiling as less portions of the foods will be exposed to heat and water.
- When cooking meat, poultry and fish, use shortest cooking time needed. Cooking proteins at high temp. or for a longer time can cause decrease in digestibility of proteins and denaturation.
- During barbequing, add back the juices that drip from the meats as these juices often contain a lot of B- vitamins.
- Try to finish cooked foods within a day or two because nutrient content like vitamin C may continue to destroy when the cooked food is exposed to air.

Ultimately it can be said that there is no perfect method of cooking that retains all the nutrients. Each has its own pros and cons. For best results, cook:

- For shorter periods of time
- At lower temperatures
- With less or just enough water
- With minimum waste of by-products