

Meal Planning

- 1 (a) Use fresh pineapples instead of canned pineapples.
Use herbs and spices to replace soya sauce and ketchup.
Add more vegetables such as tomatoes and onions.
- 1 (b) Remove the skin from the chicken breast meat.
Reduce the amount of butter used for basting.
- 2 (a) a male teenager : 80g
a pregnant mother : 67g
- 2 (b) Males have bigger muscle mass hence they need more protein.
- 2 (c) The extra protein is needed for the development of the fetus.
- 3 (a) Religious beliefs. For example, Hindus cannot eat beef.
Believe in animal rights , therefore they object to the slaughter of animals
Meat is more expensive than plant proteins like pulses and legumes
- 3 (b) Vegans do not eat any food that is of animal origin. This means that meat, seafood, poultry, butter, milk, cheese and eggs cannot be used in cooking for them while lacto-vegetarians do not eat meat, seafood or poultry but can eat animal products such as butter, milk and cheese except eggs.
- 3 (c) HBV protein is found mostly in animal products and protein is needed for growth of new cells and repair of worn-out cells. Lack of protein can lead to wasting of muscles. Hence protein should be obtained from a varied source of nuts, seeds, legumes, grains to ensure that all essential amino acids are provided. Complementary protein is the other solution to provide all essential amino acids needed by the body.
Vitamin D is found in few plant foods in useful amounts, so the action of the sunlight on the skin is an important source. Vitamin D is added to margarine and fortified breakfast cereals. Lack of vitamin D may lead to rickets in vegetarians.
Calcium is found mostly in dairy products. Lack of calcium may contribute to brittle and soft bones and consequently osteoporosis. Calcium should be obtained from soya beans and dark green leafy vegetable.
B-group vitamins are found mostly in meat. Lack of B-group vitamins can lead to deficiency diseases such as beri-beri, pellagra, etc. B-group vitamins should be obtained from wholegrain cereals, nuts and some fruits.
Vitamin B12 is only found in meat products. Lack of Vitamin B12 can lead to megaloblastic anaemia. Hence for vegans, they must take vitamin B12 supplements.
Iron is mostly found in red meat. Lack of iron can lead to anaemia. Hence, iron should be obtained from dark green leafy vegetable.
- 4 (a) The appetite is likely to be poor, so the food must contain a good balance of nutrients so that it is useful to the body.
Small portions should be served as they have smaller appetites.
Food should be easy to eat and digest.
Greasy food should be avoided as they may be indigestible.
The patient will generally be using less energy while in bed, so the energy value of the food should be lowered than normal.
- 4 (b) The food should contain sufficient essential fatty acids as it is needed for brain growth and cell division in foetus
Vitamin D rich food should be given as deficiency can lead to low birth weight baby and oostomalacia in mothers.
There must be sufficient Vitamin K as deficiency can lead to haemorrhage in infants during the first month after birth
Folate is very important for correct development of the brain and nervous system in the foetus

and deficiency can lead to miscarriage, slow growth, malformations in the foetus (e.g. spina bifida) or premature birth

Calcium intake must be met as it is needed for the foetus's skeleton growth and to prevent mother from suffering from osteoporosis as mother will use her body's calcium to provide for the foetus

- 5 (a) Increasing percentage of Singaporeans is suffering from obesity, coronary heart disease and hypertension.
- Asking for less oil and for skin to be removed helps to reduce our fat intake which prevents coronary heart disease. Asking for less gravy/sauce helps to reduce our salt intake which reduces the risk of having hypertension. Asking for less sugar/syrup helps to reduce our sugar intake which prevents obesity and diabetes. Many Singaporeans do not eat sufficient fruits and vegetables hence they are encouraged to meet the recommended intake to prevent constipation and vitamins and minerals deficiency disease.
- 5 (b) Ask for plain rice instead of the flavoured rice.
Ask for steamed chicken instead of roasted chicken to reduce fat intake.
Ask for a serving of vegetables with the chicken rice.
- 6 (a) Include sufficient carbohydrate food to provide good energy source as children are very active and they are growing rapidly.
Include large amounts of high biological value protein food like milk, chicken and fish for growth and development.
Ensure that there is sufficient amount of Vitamin A and D from dairy products to help in child's growth.
Ensure that there is sufficient amount of Vitamin C. Orange juice can be prepared for the child for the general health of the child.
Be sure that a child has at least 500ml of milk each day or include high calcium food such as cheese and yoghurt in their diet to build strong bones and teeth.
- 6 (b) Food should be served at regular times to encourage unnecessary snacking and other bad eating habits which may lead to health problems.
Snack on healthy food like fruits, cereal bars to supply energy as teenagers are very active.
To include a variety of food to provide sufficient nutrients to the teenager.
Diet must contain good supplies of all essential nutrients to ensure proper growth and development.
More fruits, vegetables and water should be included daily to prevent skin disturbances which are common during teen years.
- 6 (c) Include sufficient amount of proteins from chicken, fish and tofu to replace and repair worn out cells
Include sufficient amount of calcium and phosphorus in their diet to maintain bone density as a shortage of these will lead to the weakening of the bone structure resulting in bones becoming brittle and fracture easily.
Ensure sufficient amount of carbohydrate as some elderly are less active hence will require less energy.
Include iron-rich food, such as egg yolk, in their diet to allow a continued supply for the manufacture of red blood cells.
Include sufficient dietary fibres from fruits and vegetables to aid bowel removal and maintain healthy digestive system
- 7 Eat a Variety of Foods using the Healthy Diet Pyramid as a Guide.
No single food can supply all the nutrients in the amounts an individual needs each day.
To get all the nutrients and other substances needed for optimal health, use the Healthy Diet Pyramid to guide food choices.
Achieve and Maintain Body Weight Within the Normal Range.

Under-nutrition can lead to marasmus when there is lack of carbohydrate or Kwashiorkor when there is lack of protein in the diet.

Over-nutrition may lead to obesity which can lead to many diet-related diseases such as heart diseases, stroke and diabetes.

Eat Sufficient Amounts of Grains, especially Whole Grains.

Grains provide carbohydrate which provides energy for the physical activities.

Whole grains are unpolished grains containing bran and germ, such as rolled oats, brown rice, whole flour and bread which contains more fibre, vitamins and minerals.

Eat More Fruit and Vegetables Every Day

Vegetables and most fruit are fat-free, and they provide essential vitamins, minerals and dietary fibre.

Choose and Prepare Food with Less Fat, especially Saturated Fat

Fat is a concentrated source of energy - a diet high in fat can provide excess calories and lead to overweight and obesity.

Saturated fat increases the risk of coronary heart disease while unsaturated fat helps to reduce the risk of coronary heart disease and stroke

Choose and Prepare Food with Less Salt and Sauces.

Excessive sodium intake lead to high blood pressure.

Sauces often contain high amount of salt and hence should be taken in moderation.

Choose Beverages and Food with Less Sugar.

Excess sugar intake can lead to obesity and diabetes.

Frequent consumption of sweet foods can lead to dental decay.

If You Drink Alcoholic Beverages, Do So in Moderation.

Alcoholic beverages supply calories, but provide little or no nutrients.

Drinking alcohol excessively is also the cause of health problems such as liver and pancreas damage, hypertension and certain cancers.

Meat

- 1 Meat is a very good source of high biological value protein which is essential for growth and repair in our body.
As compared to other protein food, meat is expensive and it contains a considerable amount of saturated fat which may have harmful effects on the body when consumed in high amounts.
- 2 Slender, small fibres are associated with tender meat while large and long fibres are associated with tougher meat.
- 3 We can slice the meat against the grains/mince/grind the meat as this shortens the muscle fibres.
We can use papain (enzymes found in papaya) to break down the connective tissues and to tenderize the meat.
- 4 Collagen is insoluble but it can be converted to soluble gelatin by moist cooking.
Elastin is very tough and insoluble and it cannot be changed by cooking; but can be broken down mechanically
- 5 Offals are edible internal parts of an animal.
Examples are kidney and liver.
- 6 (a) Store meat in the refrigerator or the freezer as soon as possible as the low temperature in the refrigerator inhibits the growth of bacteria which causes meat to deteriorate quickly.
Store meat in a plastic bag or air-tight container to reduce the exposure of the meat to micro-organisms and prevents the loss of moisture and the absorption of smells.
Trim away the visible fat from meat before storage as the fat present may turn rancid over time.
Remove the offal of poultry and fish and wash the food thoroughly before storage as offal often contain enzymes and bacteria that can cause food spoilage

Pack the meat into meal-sized portions to prevent repeat freezing and thawing which increases the chances of contamination and consequently bacteria growth.

6 (b) For fresh meat:

No strong unpleasant smell.

Flesh is firm, moist and elastic

Meat should contain fine and even grains

For frozen meat:

Check the expiry date on the packaging

Check that there are no ice crystals in the packaging.

Check that the packaging is not torn or damaged.

6 (c) As meat is boiled, muscle proteins coagulate and shrink.

The insoluble proteins (collagen and elastin) are converted into gelatin, which makes meat more tender and digestible.

Soluble nutrients (mineral elements, B-vitamins) are lost as it dissolves into the cooking water.

Meat extractives are lost in the water causing the loss of flavour in meat.

When meat is cooked too long, the connective tissues might be completely destroyed and the meat becomes stringy and dry.

Fruits and Vegetables

1 Carbohydrate, found in the form of starch and sugar in both fruits and vegetable, helps to provide energy for the body.

Vitamin C: helps healing of cuts and wounds, enables the body to resist infections and keeps gums and teeth healthy

Vitamin A: needed for healthy skin and the formation of visual purple which helps us to see better in dim lights.

B-group Vitamins: helps in the release of energy from food.

Iron: helps in the formation of red blood cells in the blood

Dietary Fibre: aids in the easier removal of bowels.

2 A fruit that is just ripe is firm to the touch and has a good colour.

The skin of a just-ripe fruit is smooth and not wrinkled.

No bruises or blemishes on the fruit.

May buy unripe fruit and let it ripen in a day or two before eating. E.g. bananas

3 Leafy vegetables should be crisp, firm and has a good colour

Root vegetables should be firm and free of spade marks.

Insect- or mould-infected vegetables should be avoided.

4 Peel vegetables very thinly when necessary as there are vitamins and minerals under the skin which could be easily washed away.

Prepare the vegetables just before cooking to prevent destruction of vitamins by enzymes

Place vegetables in a plastic bag in a cool place to prevent the oxidation of vitamins and hence the loss of vitamins.

Wash the vegetables but do not soak them in water as soaking will cause the water-soluble vitamins and minerals to be lost.

Cook the vegetables in the minimum amount of boiling water. They should be cooked for the minimum time, with a lid on the pan as placing them in boiling water destroys the enzymes which help to preserve the vitamins.

When the vegetables are just tender, they should be drained and served immediately as prolonged heating will result in further loss of vitamin C.

5 Vegetables should be stored in a refrigerator to slow the deterioration of vegetables due to the continued respiration of vegetables after harvest.

Vegetables should be stored for the minimum time in a cool place in a plastic bag in the in the crisper compartment.

- 6 (a) There is an increase of Singaporeans consuming more fruits and vegetables from 1998 to 2004. The increase for consumption of vegetables is more significant than of fruits. The general low proportion of Singaporeans meeting the dietary guidelines for fruits and vegetables means they have high risks of suffering from many vitamins deficiency diseases. A low fruits and vegetables intake also means a low fibre intake and this increases the risks of having constipation and consequently colon cancer over a long period of time.
- 6 (b) Many Singaporeans are lazy to buy fruits. It is easier to incorporate vegetables in their main meals during lunch and dinner.
- 6 (c) Include fruits in their breakfast. E.g. add strawberries into the bowl of cereal. Add fruits into cakes or muffins when bakin Dried fruits such as raisins and dried mangoes can be eaten as snacks.
- 7 (a) Vegetables are important because they contain:
Small amount of LBV protein, except for soya bean - for growth of new cells and repair of worn out cells
Unsaturated fats found in nuts and beans – good source of energy
starch found in roots and tubers, sugar found in young vegetables, peas, beans and onions – good source of energy
Vitamin A (tomatoes, carrots and dark leafy vegetables) - to prevent night blindness
B group vitamins in legumes such as peas and beans – to release energy from food
Vitamin C in most vegetables, dark leafy vegetables – for good immune system
Trace of calcium found in green leafy vegetables - calcium build strong bone and teeth
Spinach is rich in iron - needed to form haemoglobin in red blood cells
High percentage of water – to lubricate joints
Excellent source of dietary fibre - to promote a healthy digestive system.
- Possible consequences when there is a lack of vegetables in our diet are:
Calcium - Osteoporosis
Vitamin A - Night blindness
Vitamin B1- Beri beri
Vitamin B2 - Dermatitis
Vitamin B3- Pellagra
Fibre - Constipation/diverticular disease/ colon cancer
- 7 (b) Vegetables can be eaten raw as a salad.
Vegetable juice e.g. celery juice
vegetable soup – cream of broccoli
Leafy vegetable e.g. spinach – stirred fried
Root vegetable e.g. potatoes - baked, roasted
Soft vegetable e.g. tomatoes – grilled