



The Republic of Malawi  
OFFICE OF THE PRESIDENT AND CABINET

## NUTRITION GUIDELINES FOR PREVENTION AND MANAGEMENT OF DIETARY RELATED NON-COMMUNICABLE DISEASES



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**NUTRITION GUIDELINES FOR PREVENTION AND MANAGEMENT OF  
DIETARY RELATED NON-COMMUNICABLE DISEASES**



## **FOREWORD**

The prevalence of dietary related non communicable diseases (DRNCDs) in Malawi is an emerging problem which requires immediate attention because it is the main cause of mortality among adults. Further, the need to provide guidelines on prevention and management of the DRNCD has been an outcry from various population groups. Bearing in mind the mandate of the Department of Nutrition, HIV and AIDS in line with its mission, goal and vision as outlined below:

The Department of Nutrition, HIV and AIDS is the rallying point for the greater realisation of the Government's Leadership and commitment in the fight against nutrition disorders

### **Overall Mandate**

To provide visionary guidance and strategic direction for the implementation of the national response to nutrition disorders, HIV and AIDS in the country.

### **Vision**

Malawi with adequate nutrition and reduced prevalence of HIV by 2015

### **Mission Statement**

Provide policy direction, guidance, oversight and coordination of nutrition, HIV and AIDS in Malawi

It is therefore imperative that the guidelines were produced and it is the Department's hope that they will assist in preventing and managing the situation at all levels.



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**SECRETARY FOR NUTRITION, HIV AND AIDS**



**Open for suggestions and comments**



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## LIST OF ACRONYMS

<b>Tsp</b>	:	Tea spoon
<b>Tbs</b>	:	Table spoon
<b>MJ</b>	:	Mega Joules
<b>Kcal</b>	:	Kilocalories
<b>Mmols</b>	:	Millimoles
<b>CHO</b>	:	Carbohydrate
<b>BMR</b>	:	Basal Metabolic Rate
<b>BMI</b>	:	Body Mass Index
<b>C</b>	:	Cup
<b>NIDDM</b>	:	Non-Insulin Dependent Diabetes Mellitus
<b>IDDM</b>	:	Insulin-Dependent Diabetes Mellitus
<b>NCDs</b>	:	Non-Communicable nutrition related Disorders /Diseases
<b>CHDs</b>	:	Coronary Heart Diseases
<b>HDL</b>	:	High Density Lipoproteins.



## INTRODUCTION

Non-communicable diseases are illnesses caused by something other than pathogens which include hereditary, improper diet and smoking among other. Non Communicable diseases that are associated with diet and other eating habits are sometimes called dietary related non communicable diseases (DRNCD). Examples of such diseases include hypertension, diabetes, cardiovascular disease, cancer, atherosclerosis, allergy, gout, arthritis. These diseases were called diseases of affluence and urban dwellers because they were common among the affluent communities. It is however, currently apparent that the prevalence of DRNCD is also common among low resource communities. Longitudinal studies have revealed that children who were malnourished in the 0-5 age group developed DRNCD in the later life.

The World Health Organization (WHO) (2004) reported that unhealthy diets and physical inactivity are two of the main risk factors for raised blood pressure and glucose, abnormal blood lipids, obesity and overweight. In addition they are also risk factors for the major chronic diseases such as cardiovascular, cancer and diabetes diseases. Chronic diseases have been listed as the leading cause of mortality in the world, representing 60% of all deaths. WHO further reports that 75% of all children affected by obesity live in low and middle income countries.

In 2004, WHO developed a Global strategy on Diet, Physical Activity and Health to guide member states in developing national policies, plans and programmes to promote lifestyles that include a healthy diet and physical activity.

Malawi as a developing country has not been spared from the prevalence of non-communicable nutrition related diseases (disorders). Local studies have shown that there is an increase in the number of people suffering from DRNCD. The Malawi Government in its National Nutrition Policy has expressed its determination and commitment to reduce the prevalence of the dietary related non-communicable diseases. The development of these guidelines is therefore one of the ways of implementing the National Nutrition Policy.

## **Purpose of the Guidelines**

The main purpose of the guidelines is to provide information on actions that are essential in preventing and managing dietary related non communicable diseases (DRNCDs) for individuals who do not have and those already having the disease or disorder respectively.

## **Who should use the Guidelines**

The guidelines may be used by the general public including:

- Individuals
- Households
- Learning institutions
- Health facilities
- Community Extension Workers
- Workplaces

## **Organization of the document**

The guidelines will cover

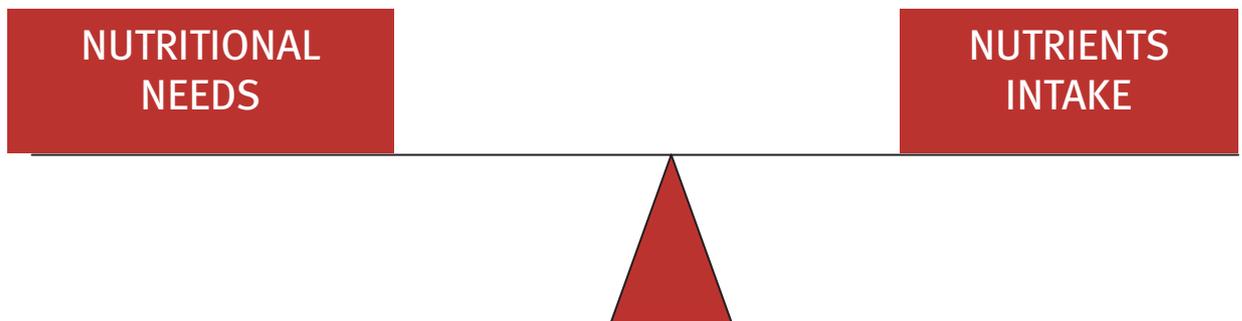
- Background
- Introduction
- Prevention and Management of each NCD
- Monitoring and Evaluation
- Implementation Requirements

## PREVENTION AND MANAGEMENT OF EACH NCD

### 1. OVER WEIGHT

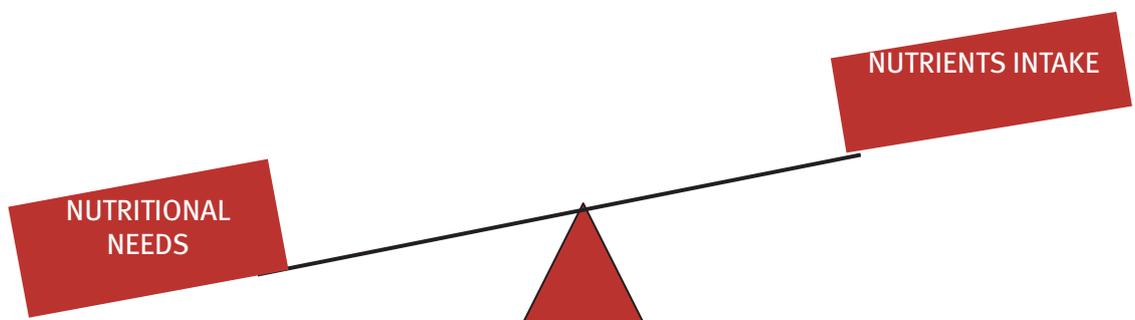
The body requires different nutrients for its normal functions, survival, growth, development and activity. The nutrients are required in specific amounts and proportions. The body's nutrient requirements are expressed on a daily basis and adequate nutrition is achieved when there is a balance between the amount of nutrients taken by the body and the body requirements or expenditure.

#### Balance between nutritional needs and dietary intake



When there is such a balance, a person is likely to have normal weight for height expressed as Body Mass Index (BMI) ranging between 18.5 and 24.9.

When an individual takes more nutrients than what the body needs it creates an imbalance which results into Over nutrition.



The implication is that the body is taking more energy than it is able to spend during physical activity, work and body functions leading to excessive weight gain. In such circumstances a person is likely to become overweight. An individual is overweight when his or her weight is more than 10% of the standard weight BMI 18.5 to 24.9. An overweight person will have BMI ranging between 25.0 and 29.9.

A number of factors may increase the risk of becoming overweight. Such factors include:

*i) Genetic make-up*

Naturally some people are more likely to gain weight than others on comparable energy intake. The genetic make-up may also influence the way the body utilises energy in different processes.

*ii) Food choices*

A person is likely to become overweight when he or she eats too much starchy foods such as nsima, cassava, rice and potatoes; foods with too much fat such as margarine, butter, cheese, fatty milk; and junk foods like chips, fizzy drinks, sweets.

*iii) Cooking methods*

Methods of cooking that require a lot of fats like deep frying; stewing of fatty meat or stewing using a lot of fat may also increase the risk of becoming overweight.

*iv) Lack of physical activity*

Physical activities such as walking, jogging, running, cycling and manual work make the body use more energy. When a person is not physically active but taking more foods that are rich in energy, he or she is more likely to become overweight.

*v) Malnutrition in early stages of life*

If a person was malnourished in early childhood, he or she is more likely to become overweight.

Overweight can be measured by relating one's weight to height from which the Body Mass Index (BMI) is calculated. Take weight in kilogrammes using a scale such as bathroom scale, uni-scale and adult balancing scale; and height in metres using height board. Calculate BMI using the following formula:

$$BMI = \frac{\text{weight} \quad ( \text{kg} )}{\text{height} \quad ( \text{m}^2 )}$$

For example if an individual's weight is 64kg and height is 1.5 meters, his or her BMI will be calculated as follows;

$$BMI = \frac{64}{(1.5)^2}$$

$$\begin{aligned} BMI &= \frac{64}{(1.5)^2} \\ &= \frac{64}{1.5 \times 1.5} \\ &= 28.4 \end{aligned}$$

Use the table below to interpret the BMI

<b>BMI</b>	<b>Interpretation</b>
Less than 18.5	Underweight
18.5 to 24.9	Normal
25 to 29.9	Overweight
30 and above	Obese

The person whose BMI has been calculated is overweight since it is 28.4.

### **Recommended practices for preventing overweight**

When a person is overweight s/he is more likely to develop different types of dietary related non communicable diseases and other conditions such as: i) Obesity; ii) High Blood Pressure; iii) High cholesterol; iv) Adult onset diabetes or type II; v) Coronary heart disease; vi) Stroke; vii) Gallstones and other digestive disorders; viii) Arthritis of the knees and hip joints; ix) Some cancers; x) Respiratory problems; xi) Backache problems; xii ulcers and xiii) Gout.

The following practices are therefore recommended to prevent overweight:

- Eat meals with plenty of fruits and vegetables. These contain lots of fibre which reduces food energy intake, provides satiety and delayed hunger.
- Eat snacks that are low in energy such as fruits, vegetables, legumes and whole grain foods.
- Take regular and vigorous exercises such as walking fast (hurriedly) or uphill, digging, jogging, pounding, playing games such as fish-fish, raundasi, phada, jingo, chipako, football, netball, swimming, squash, volleyball, and tennis.
- Reduce the intake of fatty foods. These are high in energy per gramme.
- Avoid high energy foods such as fizzy drinks, chips, crisps, sweets and cakes.
- Avoid excess consumption of alcohol.

### **Nutrition management of overweight**

If a person is already overweight, the guidelines below will help to reduce weight and associated risks if they are all followed.

- Reduce the amount of food taken per meal to minimise energy intake

- Reduce fat intake, which has the most energy per gramme
- Increase the intake of fruits and vegetables to reduce calorie intake
- Increase physical activity
- Avoid excessive consumption of alcohol

## 2. OBESITY

Obesity is a condition that develops due to prolonged imbalance between energy intake and energy expenditure (see figure 2 above). A person is said to be obese when the BMI is equal to or greater than thirty ( 30). Just like with overweight, obesity occurs when the dietary intake of energy and other nutrients is higher than what the body uses for physical activity, work and body processes leading to an increased amount of stored energy mainly in form of fat. A person becomes obese when s/he is too fat as a result of the excessive accumulation of body fat.

A person consuming diets high in fat is more likely to become obese than those with carbohydrates. Just like overweight, the risk of becoming obese is increased by a number of factors such as genetics, food choices and preparation, lack of physical activities and taking more energy rich foods. Obesity occurs at all ages affecting the health of infants, adolescents and the elderly.

### Assessment and classification of obesity

Obesity is also measured using BMI which relates to one's weight over height squared. In overweight take weight in kilogrammes using a scale such as bathroom scale, uni-scale, and adult balance scale; and height in metres using the height board. Calculate the BMI using the following formula:

$$\text{BMI} = \frac{\text{Weight in (kg)}}{\text{Height in (m}^2\text{)}}$$

For example if an individual weighs 60kg and is 1.3 meters high, his or her BMI will be calculated as follows;

$$\text{BMI} = \frac{60}{\quad}$$

$$\begin{aligned}
 & (1.3)^2 \\
 = & \frac{60}{1.3 \times 1.3} \\
 = & 35.5
 \end{aligned}$$

Use the table below to interpret the BMI

<b>BMI</b>	<b>Interpretation</b>
25.0 – 29.9	Grade I (Overweight)
30.0 – 39.9	Obesity Grade II
40+	Obesity Grade III

The individual is has grade II obesity since his/her BMI is 35.5.

A person may be classified as being obese or overweight due to the growth of muscles. The situation may apply to those who are very active such as weight lifters and boxers. A person with oedema (excess water causing swelling in the body) may have increased weight due to the accumulation of water in the body tissues. Such a person may erroneously be classified as obese. Further clinical assessment may be required in such cases.

### **Recommendations for preventing obesity**

When a person is obese s/he is more likely to develop many disorders and other types of dietary related non communicable diseases and conditions such as: i) High Blood Pressure; ii) High cholesterol; iii) Adult onset diabetes (type II); iv) Coronary heart disease; v) Stroke; vi) Gallstones and other digestive disorders; vii) Arthritis of the knees and hip joints; viii) Some cancers; ix) Respiratory problems; x) Backache problems; xi) ulcers; and xii) Gout. These disorders may result in premature deaths or disability. Overweight children may become overweight adults.

The following practices are therefore recommended to prevent obesity

- Prevent becoming overweight by following the recommendations stated under overweight.
- Maintain normal body weight with BMI below 25.0)
- If you are overweight with BMI 25.0 to 29.9 reduce weight by:
  - Eating meals with plenty of fruits and vegetables;
  - Eating snacks that are low in energy such as fruits, vegetables, legumes and whole grain foods;
  - Engaging in regular and vigorous exercises as in overweight with the help of a specialist who will check your heart condition before commencing the regime;
  - Reducing intake of fatty foods;
  - Avoid high energy foods such as fizzy drinks, chips, crisps, sweets and cakes;
  - Stop taking alcohol completely.

### **Nutrition management of obesity**

Obese people should follow the guidelines below in order to reduce excess weight and associated disorders and conditions.

1. Eat a variety of low energy foods from the six food groups everyday.
2. Eat unrefined foods such as mgaiwa instead of ufa woyera, whole grain bread instead of white bread
3. Eat legumes such as beans, pegion peas (nandolo), cow peas (khobwe), ground beans (nzama). Reduce the intake of oil rich nuts such as ground nuts, soya, macadamia and cashew nuts.
4. Eat low fat animal foods such as meat without fat, white meat such as chicken, low fat or skimmed milk, lean fish (chambo, usipa, matemba, utaka and mlamba), mice, mphalabungu, malasankhuli mibwabwa, sesenya. Reduce the intake of fatty foods including fat rich animal foods such as cheese, fatty beef, fatty pork, ngumbi, full cream milk.

5. Eat plenty of vegetables at each meal.
6. Eat plenty of fruits at each meal.
7. Eat small regular meals to avoid feeling very hungry and eating too much food.

Cook meals using methods that do not use fats such as roasting, grilling, boiling and steaming.

## **SAMPLE OF DAILY MENUS FOR REDUCING WEIGHT**

### ***Breakfast***

- A medium size fruit or a glass of unsweetened fresh fruit juice (Orange, mango, peach, pineapple, water melon, papaya, tomato, guava and others).
- 1 egg (boiled, scrambled or poached).
- ½ cup mgaiwa porridge with skimmed milk or 20g unsweetened breakfast cereal or 1-2 slices of brown bread or 1 medium size sweet potato or Irish potato or cassava .

### ***Mid-morning***

- Thobwa or skimmed milk (no sugar).

### ***Mid-day meal***

- One small chipande mgaiwa nsima or 3 tablespoons rice
- 1 piece thigh or leg or half breast or whole wing (maximum quarter) chicken or medium size fish and one small plate vegetables
- A medium fruit from the recommended list.

### ***Mid-afternoon***

- Thobwa or skimmed milk or 100% fruit juice.

### *Evening Meal*

- ½ cup juice from fresh fruits such as malambe, pineapple, orange, guava, mango, papaya and pineapples among others or medium size fresh fruit
- ½ cup cooked beans or meat with no fat or usipa
- Salad or boiled vegetables
- 2 medium size boiled Irish potatoes
- Skimmed milk (no sugar).

### 3. DIABETES MELLITUS

Diabetes mellitus is a chronic metabolic disorder in which blood glucose levels are raised due to the deficiency or diminished effectiveness of insulin. Insulin is a hormone, which controls the movement of glucose from blood into the body cells. In the absence of insulin, glucose regulation falters and diabetes may set in since sugar collects in the blood. Diabetes mellitus is diagnosed by testing glucose levels in the urine, blood and other tests.

Diabetes is classified into two categories. The first category is Insulin-dependent diabetes, also known as Type I. The second type is Non-insulin dependent diabetes (NIDD) also known as Type II. Type I diabetes was formerly known as juvenile onset diabetes since its incidence is at a peak between 10 and 12 years of age. A person with this type of diabetes has pancreas failure. The pancreas fails to produce insulin and hence glucose levels remain high in the blood. In order to clear the glucose, insulin is injected into the blood. Insulin is not given orally to prevent it from being digested by the gastric enzymes since it is a protein.

Type II diabetes is also called adult-onset diabetes. This is the most prevalent type of diabetes that usually occurs later in life. With this type, the activity of insulin is affected as cells become resistant to insulin a situation that worsens with increased body fat.

- Diabetes can present itself in the form of high blood sugar (hyperglycaemia) or lower blood sugar (hypoglycaemia). It is easier to control hypoglycaemia than hyperglycaemia because the symptoms are not very obvious and clear at the beginning.

An individual with diabetes displays the following signs and symptoms:

- Excessive thirsty (Polydipsia)
- Excessive urine production (polyuria)
- Unexplained tiredness

- Numbness feeling due to the disorder of the nerves
- Ketones in the blood and urine. Ketones are products of incomplete breakdown of fat when glucose is not available in the cells.
- Fruity odour from the breath (acetone breath) because of ketosis. Ketosis is an undesirable high concentration of ketone bodies in the blood and urine.
- Elevated blood sugar level because of insufficient or ineffective insulin
- Low blood glucose because of insulin overdose
- Excessive feeling of hunger (polyphagia)
- Recurring itching, skin, gum and bladder infections in Type II (NIDDM).

**In serious diabetes condition there is:**

- Sudden weight loss
- Numbness or pain of the limbs in Type II (NIDDM)
- Sores on the feet that do not heal or death of the tissues (diabetic gangrene)
- Diabetic coma (unconsciousness due to elevated blood glucose (hyperglycaemia), dehydration and above normal acidity in the blood and body fluids (acidosis) in uncontrolled IDDM)
- Glucose in urine (glycosuria)
- Lower blood sugar (one feels dizziness and loses conscience (hypoglycaemia)

If diabetes is not properly managed a person develops complications like;

- Numbness due to the nerves disorders (Diabetic neuropathy)
- Disorder of the kidney (nephropathy)
- Disorder of the retina (Diabetic retinopathy)
- Cardiovascular diseases especially heart attacks without even noticing

- Diabetic coma due to extremely high blood glucose (Nektonic coma)
- Weight gain in NIDDM due to overeating.
- Weight loss in IDDM due to loss of glucose and ketene bodies in the urine

Ketene bodies are produced due to incomplete breakdown of fat when glucose is not available in the cells.

### **Recommendations for control and prevention of diabetes**

An individual with diabetes should follow the 3Ds: Disciplined lifestyle, Diet and Drugs as follows:

- Have a well defined, timely and regular pattern for eating, working, recreation, exercise and sleep.
- Have a regular diet with well defined time table.
- Where the diet is failing, administer drugs to treat and prevent complications of diabetes.
- Reduce obesity by reducing body weight because obesity induces resistance to the action of insulin. Follow recommendations for reducing weight as given in the section for overweight and obesity.
- Eat lots of fibre (unrefined food products) from foods such as whole grain cereals, legumes like soya beans, root crops, fruits and vegetables. These slow down digestion and absorption of sugars and the body is able to the control blood sugar levels.
- Eat more of boiled or roasted foods other than fried foods.
- Use less gravy and fats since these contribute to obesity, which is a risk factor for diabetes.
- Eat frequently in small or modest amounts.
- Avoid eating too much in one go and going for longer periods without eating.
- Take alcohol in moderation and sparingly possibly a glass of wine once in a while.

- Go to the hospital regularly for check up
- Eliminate using reduction in the intake of sugar and salt in the diet using elimination strategy and replace it with honey if necessary because it follows the fructose pathway in the metabolism.
- Exercise regularly to avoid becoming overweight.
- If you are over 45 get tested for diabetes for early detection to reduce the risk of chronic complications in NIDDM
- An individual with impaired glucose tolerance should begin diet therapy on diabetes as illustrated below.
- If you have hypoglycaemia take a drink with adequate sugar or undiluted sobo each time you feel dizzy,

### **Management of Type I diabetes (Insulin dependent Diabetes Mellitus)**

In order to manage diabetes mellitus, an individual should observe the following guidelines:

- Take regular medical check-up to detect any changes in the blood sugar level.
- Follow nutrition therapy explained in the control and prevention of diabetes in order to maintain blood glucose level.
- Be consistent on the intake of carbohydrates. (there is no restriction for CHO intake).
- 15 - 30grams complex CHO such as green bananas, whole cereals (mgaiwa), whole grain bread should be given to replace CHO for missed meals to prevent low glucose blood levels (hypoglycaemia)
- Do not take concentrated sweets in the diet
- Take adequate but not excessive proteins. Proteins may help delay the onset or progression of kidney disease.
- Use non-fat milk, meat and unsaturated fats (fats from plant origin) in moderation in the diet.
- Restrict salt intake to one teaspoon per day (to ease blood movement in the vessels).

- Take at least a fruit a day. These provide minerals and natural sugar and 100% fruit juices if feasible
- Eat as much vegetables as possible for vitamins and minerals especially green and red. Examples are cassava leaves, bonongwe, luni, chisoso, nkhwani, carrots, tomato and onions among others.
- Avoid alcohol completely because it increases the blood sugars
- Eat meals consistently from day to day to improve glucose control
- Eat an evening snack to help sustain the blood glucose through the night
- Take precaution when engaging in physical activities. An individual who has mild hyperglycaemia they may experience a fall in blood glucose during exercises.
- Refrain from vigorous physical activities
- Eat before, during and after physical activity especially CHO, readily available fruits such as apples, pineapples and bananas, fruit juices, yoghurt, crackers and other starches like cassava or sweet potatoes
- An individual with IDDM should be given insulin in serious cases or go to the health facility for medical attention.

### **Management of Type II diabetes (Non Insulin dependent Diabetes Mellitus)**

An individual with type II diabetes should observe the following guidelines in order to manage his/her condition:

- Take carbohydrates consistently throughout the day. Too much carbohydrates at once can raise blood glucose and too little can lead to hypoglycaemia
- Reduce fat intake because it increases insulin resistance
- Use non-fat milk, meat and unsaturated fats mainly from plant origin in moderation in the diet like sun flower, soya, maize and olive oils are the best.
- Restrict salt intake to one teaspoon per day (to ease blood movement in the vessels).

- Take at least a fruit a day. These provide minerals and natural sugar
- Eat as much vegetables as possible for vitamins and minerals especially green and red. Examples are cassava leaves, bonongwe, luni, chisoso, nkhwani, carrots, tomato and onions among others.
- Avoid alcohol completely because it increases the blood sugars
- Eat meals consistently from day to day to improve glucose control
- Control weight loss and gain to avoid other complications that come due to the increase or reduction in weight
- Avoid alcohol completely because it increases the blood sugars
- Take low impact aerobic activities such as walking for 20-30 minutes at least 3 times a week. The exercise improves blood glucose control and blood lipid levels, contributes to weight loss and lowers blood pressure.

### **Foods which may be eaten in any quantity**

A person with diabetes is not prevented from eating any of the following foods: skimmed milk, roasted low fat meat, yeast extracts, energy-free aerated drinks, fresh fruit or vegetable juice, diabetic fruit squash, soup, herbs, seasonings, spices and low carbohydrate vegetables and fruits.

**During refreshments such individuals be served with 100% fruit juices, soups, fruits and skimmed milk. But never use artificial sweeteners. Instead use honey.**

However, an individual with diabetes should eat the following foods in moderation: meats, fish, cheese, eggs, butter, margarine, cream and vegetable oils.

Take spirits, dry wines and dry cherries in strict moderation in consultation with the doctor (maximum a glass once in a while).

Completely avoid sugar, glucose, sweets, chocolate, syrup, jam, marmalade, cakes, biscuits (except those specifically prepared for diabetic individuals),

pies, fruit tinned in syrup, fruit squash, lemonade or similar aerated drinks, sweet sherries, wine and beer.

## **Sample of foods and nutrient content of some foods for people with diabetes**

### **Starch**

- $\frac{1}{4}$ - $1\frac{1}{2}$  cup cereal, grain, pasta; or
- $\frac{1}{2}$  - 1 cup starchy vegetables like baked beans, green peas, medium corn on cob, mixed vegetables with corn, peas or pasta; or
- 1-2 slices of bread

These serving portions are equivalent to 15g carbohydrate, 3g protein, 0-1 g fat and 80 kcal.

### **Fruits**

- 1- $1\frac{1}{2}$  small to medium fresh fruit
- $\frac{1}{2}$  -1 cup canned or fresh fruit juice
- $\frac{1}{4}$  cup dried fruit

These serving portions are equivalent to 15g carbohydrate and 60kcal

### **Skimmed Milk**

- $\frac{1}{3}$  cup dry milk
- $\frac{1}{2}$  - 1 cup fresh milk

These serving portions are equivalent to 12g carbohydrate, 8g protein, 0-3g fat, 90 kcal

### **Low-fat milk**

- $\frac{3}{4}$ -1 cup fresh milk

These serving portions are equivalent to 12g carbohydrate, 8g protein, 5g fat, 120 kcal.

### **Whole milk**

- 1/2 -1 cup

This is equivalent to 12 carbohydrate, 8g protein, 8g fat, 150 kcal.

### **Vegetables**

- 1/2 cup of cooked vegetables or vegetable juice or 1 cup raw vegetables

These are equivalent to 5g carbohydrate, 2 g protein, and 25 kcal.

### **Fatless meat**

- 28.35g (1 oz) of poultry (white meat, no skin), fish (fresh or frozen or canned in water), shellfish, game, eggs.

These serving are equivalent to 7g protein, 0-1 g fat, 35kcal

### **Meat with less fat**

- 28.35g (1 oz) of beef, pork, lamb veal, liver, heart (high in cholesterol) poultry (dark meat, no skin), chicken white meat with skin, 6 medium oysters, 2 medium sardines.

This is equivalent to 7g protein, 3g fat and 55 kcal.

### **Medium fat meat**

- 28.35g (1 oz) beef (most beef products), poultry, fish (any fried fish product), pork (top loin), lamb (rib roast), 1 cup soya milk.

These are equivalent to 7g proteins, 5g fat, 75kcal

### **High fat meat**

- 28.35g (1 oz) of pork (e.g. pork sausages), cheese ( all regular), 3 slices bacon, 2 tablespoons peanut butter (contains unsaturated fat)

These are equivalent to 7 g protein, 8 g fat, 100 kcal

## Fats

### *Monounsaturated Fats*

- 28.35g (1 oz) avocado, 1 teaspoon oil, 2 tsp peanut butter (smooth or crunchy).

### *Polyunsaturated Fats*

- 1 teaspoon margarine, mayonnaise (regular)

### *Saturated Fats*

- 1 slice bacon (Cooked), 2 teaspoon butter (whipped), 1 teaspoon butter (reduced fat) 3 tablespoons sour cream (reduced fat)

These are equivalent to 5g fat, 45 kcal

Consumption of saturated fats can raise blood cholesterol levels in people with diabetes.

Personal daily energy requirements for people with diabetes depends on the patient's needs determined by, age, sex, actual weight in relation to desirable weight, occupation and physical activities.

It is recommended that for most diabetic diets the proportion of energy from carbohydrate should be 50 - 55 percent, from protein should be 10-15 percent and from fat should be less than 35 percent.

## Sample menu for a diabetic person

### *Breakfast*

- 4 slices of brown (wheat bran) bread with 1 tsp butter
- $\frac{3}{4}$  cup skimmed fresh milk
- Tea or coffee (no sugar)

### ***Mid-morning***

- 2 pieces cassava
- Tea with milk (no sugar)

### ***Mid-day meal***

- 1-2 pieces of mgaiwa or 2 parts hulled maize to one part skinned soya bean milled together or millet or sorghum nsima
- 30 grams fatless meat or beans
- Vegetables (from permitted list)
- Fresh fruit juice

### ***Mid – afternoon***

- 1 glass thobwa (no sugar)

### ***Evening meal***

- 1 cup rice
- 1 chicken thigh (remove skin) or 3 table spoons usipa or matemba or kapenta
- Vegetables from the permitted list
- A glass of water

### ***Bedtime***

- 1 piece chikondamoyo (no sugar)
- 1/2 cup skimmed milk

## **4 HYPERTENTION / HIGH BLOOD PRESSURE**

Hypertension is blood pressure that is higher than normal. A person with high blood pressure {above normal 120/80 mm Hg (millimetres of mercury) for adults and 110/75 for less than one year to 140/95 for children aged 12 to 14 years) the top one is known as systolic for the upper part of the heart and the lower one is diastolic bottom part of the heart}, has greater risk of heart disease. An individual with high blood pressure has impaired quality of life and can suddenly die. High blood pressure stresses the heart since it has to pump extra hard to push the blood against resistant arteries.

An individual can also become hypersensitive due to other diseases or infections and genetic factors. The increased incidence of stroke and coronary heart disease is greatly associated with hypertension.

Blood pressure is always expressed in two numbers, which are measurements of millimetres of mercury (mm Hg) or an equivalent. An adult's normal blood pressure is around 120/80 mmHg. Abnormal or high blood pressure is classified in 3 categories. These include:

- i. "Pre-hypertension": this is characterised by systolic pressure of 120-139 or diastolic of 80-89.(thus120 - 139/80 - 89)
- ii. "Stage 1" hypertension is blood pressure greater than systolic pressure of 140 - 159 or diastolic pressure of 90-99 mmHg or greater.(140 - 159/90-99
- iii. "Stage 2" hypertension is systolic pressure of 160 or greater or diastolic pressure of 100 or greater.

### **RISK FACTORS OF HYPERTENSION**

There are several factors that predispose a person to hypertension, these include:

- a. Getting little or no exercise
- b. Obesity

- c. Poor food choices or poor diet
- d. Genetic make-up
- e. Old age
- f. High salt intake for those who are susceptible.
- g. Excessive alcohol consumption.
- h. Pregnancy, especially during the last few months
- i. Smoking
- j. Coronary Heart Disease
- k. Kidney inflammation
- l. Use of contraceptive pills
- m. High Blood lipids
- n. Diabetes
- o. Race (highest among African Americans)
- p. Gender (higher in men than women)

### Health problems associated with hypertension

When an individual is hypersensitive, he or she has to have frequent and regular check-ups in order to detect early signs and symptoms of:

- a. **Atherosclerosis:** Disease of the artery caused by a build-up of plaque.
- b. **Heart Disease:** Heart failure, ischemic heart disease (heart not getting enough blood) and hypertensive enlarged heart.
- c. **Kidney disease:** Hypertension can damage blood vessels and filters in the kidney and kidneys cannot excrete wastes properly.
- d. **Stroke:** Hypertension can lead to stroke by contributing to the process of atherosclerosis (can lead to blockages or clots) or by weakening the blood vessel wall and causing it to rupture
- e. **Eye disease:** Hypertension can damage blood vessels in the retina.

## Signs and symptoms of hypertension

An individual with hypertension may not know they have the condition until it begins to cause trouble to the heart, brain and kidneys. Therefore be on the look out for some of the following signs and symptoms:

- Irregular heart beat
- Frequent severe headache
- Fatigue or confusion
- Vision problems
- Weakness and dizziness
- Pounding of the heart and shortness of the breath

## Essential actions for preventing and managing hypertension

Since hypertension is associated with several conditions including atherosclerosis, heart, kidney, stroke and eye diseases a person with hypertension should observe the following guidelines in order to prevent and manage the condition:

- Reduce the intake of saturated fats, animal fat and caffeine (caffeine is found in tea and coffee)
- Reduce the intake of simple sugars e.g. table sugar
- Take complex carbohydrates such as whole grain meal like mgaiwa and brown bread among others
- Reduce or remove alcohol intake from your diet
- Reduce body weight by engaging in regular physical exercise with the help of a specialist and reduce the portion size of food during meal times. If overweight reduce the intake of foods such as refined carbohydrates and fatty foods.
- Increase the intake of fruits and vegetables in your diet
- Maintain a normal BMI which is only attained when your body weight is within the recommended one according to the standards (Refer to figure 1 below)

- Prevent stressful situations such as overworking
- Manage stress by give your self time to meditate
- Avoid or quit smoking of any type
- Monitor or have your blood pressure checked regularly
- Develop the habit of using low salt diet through the use of flavours, aromas like garlic, tasty spices, tomato, and ginger when preparing meals.
- Avoid using cooking methods that retain a lot of fats and oils in the food such as frying and stewing.
- Follow the doctor's prescription when on medication

### **Sample of daily menu for food stuffs for meals for people with hypertension (low sodium, moderate energy)**

#### ***Breakfast***

- Skimmed Milk
- Fruit or fresh unsweetened fruit juice
- Decaffeinated coffee, milo, cocoa, tea with skimmed milk, or soya milk, coffee, or lemon glass and chidede tea.
- Low-salt cereal like Whole meal Porridge (Phala la mgaiwa)
- 1 egg (unsalted) (boiled, steamed or scrambled)
- Low sodium bread or toast with butter or low fat margarine or jelly or marmalade

#### ***Mid-day meal***

- Fruit or fresh unsweetened fruit juice.
- Mgaiwa nsima or made from milled 2 parts dehulled maize and one part skinned soya bean or millet or sorghum
- Unsalted fatless meat, poultry or fish (usipa, utaka, kapenta, matemba, anjolinjo) which may be grilled or boiled or roasted.
- Potato, cassava, green bananas, rice, pasta (cooked without salt).
- Fresh or preserved vegetables or salad with low sodium dressing or olive oil and olives use

### *Evening meal*

- Fruit or fresh unsweetened or 100% fruit juice,
- Unsalted fatless meat or egg, poultry or fish mice, grass, hoppers (bwanoni), caterpillars, flying ants, which may be grilled or boiled or roasted.
- Fresh vegetable salad
- Beans, peas, pigeon peas, cow peas,
- Low sodium bread or roll with butter
- Decaffeinated Coffee, Milo, cocoa, tea with skimmed Milk. Or soya milk

### *Bedtime*

- Cultured milk such as Yoghurt, Chambiko
- Juices from mango, malambe, bwemba, gwafa, papaya

## 5. GOUT

Gout is a metabolic hereditary disorder, which leads to inflammation of the joints as a result of accumulation of uric acid crystals. Gout occurs due to genetic defect common among males after the age of 35 and occasionally in postmenopausal women. An individual has gout when the body has difficulties in excreting excess uric acid due to kidney problems or when there is excessive production of uric acid beyond normal levels. Uric acid accumulates in the blood and form crystals that are deposited in the joints, particularly the big toe and cause gout. Gout can affect other joints such as knee, ankle, wrist, foot and small joints of the hands. An individual with high levels of uric acid is at risk of having uric acid stones in the urinary tract, which can lead to renal failure.

### Risk factors of gout

People mostly at risk of developing gout are the ones who are:

- Consuming foods in their meals that are rich in purines predispose individuals to gout. Purines are normally present in protein rich foods for instance bacon, turkey, pigeon, liver, pulses, smoked meat and organ meats.
- Male: Men are six times more likely to develop gout. Women rarely develop gout before menopause
- Adults: gout usually occurs during middle age and is uncommon before the age of 30

However, there are other factors that are associated with gout. These factors are obesity, excessive alcohol intake, hypertension and certain drugs, which interfere with kidney's ability to clear uric acid from the blood and cause kidney malfunction such as TB drugs

## Essential actions for preventing and managing of gout

For an individual to prevent and manage gout, s/he should follow the following guidelines:

- Avoid purine rich food to reduce purine load of the body such as liver, kidneys, sweet breads, sardines, fish and meat extracts.
- If overweight and having gout reduce weight gradually (not by starvation).
- Drink lots of fluid especially water up to 3 litres per day to dissolve and wash away the uric acid crystals.
- Use bicarbonate of soda to increase the solubility of uric acid in urine in order to prevent precipitation of urate crystals.
- Seek medical treatment for prescription of drugs, which either reduce synthesis of uric acid or increase excretion of urinary uric acid
- Avoid alcohol or excessive alcohol intake
- Take a glass of water before going to bed or Coffee and tea. Caffeine is not converted into uric acid in the body.

## Sample of daily menu food stuffs for meals for people with gout

### *Breakfast*

- Fruit or natural fresh fruit juice.
- Cereal (e.g Phala la mgaiwa, Phala la mawere or sorghum)
- Toasted Bread with butter or low fat margarine; or jelly or marmalade
- Soya coffee, coffee, milo, cocoa, tea without milk. Lemon glass and chidede tea.

### *Mid-day meal*

- Fruit or natural fresh fruit juice.
- Pulses, or eggs, or chicken and all other types of poultry (in moderate amounts)
- Mgaiwa or millet or sorghum nsima or potato or cassava or green bananas or rice or pasta,
- Fresh or preserved vegetables or salad
- Bread with butter

- Coffee, or Milo, or cocoa, or tea without milk.

### *Evening meal*

- Fruit or natural fresh fruit juice,
- Egg, or poultry, or mice, or grass, or hoppers, or caterpillars, or flying ants
- Fresh vegetable salad
- Beans, or peas, or pigeon peas, or cow peas (in moderation)
- Bread or roll with butter
- Coffee, or Milo, or cocoa, or tea without Milk.

### *Bedtime*

- A cup of black coffee or tea

## 6 ARTHRITIS

Arthritis is a chronic painful inflammation of joints caused by many conditions including infections, metabolic disturbances or injury; joints structures are usually altered, with loss of function. Arthritis mainly affects the elderly. The breakdown of the cartilage causes bones to rub against each other, resulting into stiffness, pain and loss of movement in the joint. It can also affect children.

The disease affects 4 million people globally and 300, 000 in South America.

### Causes of arthritis

Arthritis is caused by;

- A weakened immune system due to poor nutrition such as deficiency of some nutrients especially calcium and phosphorous
- Consumption of foods in the diet that aggravate arthritis. Compounds that may cause arthritis include;
  - Mega-3- fatty acid in fish oil
  - Lipid per oxidation of the membranes within joints which causes inflammation and swelling.
  - Uric acids
  - Overabundance of chemical additives used in the processing of foods which the human body doesn't need.
- Overweight; because the joints are stressed and irritated by having to support excess weight especially in hips and knees.
- Genetics
- Age: the cartilage becomes more brittle with age and has less capacity to repair itself.
- Occupational hazards: Workers in some specific occupations seem to have a higher risk e.g. heavy construction work
- Previous injury: joint damages can cause irregularities in the normal smooth joint surface

## **Treatment of arthritis**

Drugs that treat arthritis affect appetite and alter the body's use of nutrients. Nutrition support and treatment helps to relieve the situation. Among the practices to treat arthritis are;

- Relaxation
- Exercise
- Supportive treatment, like 24hr test with charcoal pill or black berries.
- Salicylates
- Selected medicine like steroids, antimalarials and cortisone.
- Special diet
- Aids to eliminate osteopathic manipulation
- Neuromuscular stimulation

## **Prevention of arthritis**

Arthritis can be avoided by observing the following;

- Avoid adding new types of toxic substances to the food, that go into the diet, water, cosmetics, clothing, air and medication.
- Break present habits that bind one to the existing toxic substances.
- Reducing the intake of processed and canned foods.
- Maintaining optimal body weight
- Ensure intake of a balanced diet

## **Foods that may be added to the 7 day diet**

- Steak,
- Eggs,
- Cheese,
- Potatoes,

## **Food that must never be eaten again (Permanently avoided)**

### **1. Flour of all kinds,**

Whole wheat flour, corn flour, rye flour, soy flour.

## 2. All flour products like

Bread toasts, Cakes, Pies, Cookies, Crackers, Buns, Crullers, Doughnuts, Spaghetti, Macaroni, Noodles, Pizza

## 3. Drinks

Coffee, tea, cocoa, liquor, beer, wine, colas, carbonated beverages and all so called soft drinks

## 4. Sweets

Sugars, candies, ice cream, artificial sweeteners, jellies, jam and marmalades

## 5. Processed canned foods

Jellos, custards, puddings and frozen fruits

## 6. Manufactured and adulterated foods,

Breakfast cereals or quick-cooking oatmeal.

## Seven day menu

### DAY NO. 1

**Breakfast** None

**Lunch** None

**Dinner** None

Drink at least four 300ml glass of water

### DAY NO. 2

**Breakfast** Unsweetened grape or prune juice, bananas

**Lunch** Fresh beef liver, preferably raw or lightly, sautéed, mixed green salad, oil and vinegar dressing, bowl of blueberries or other fruit in season

**Dinner** Raw vegetable plate (green peppers, Celery, Tomatoes, etc Draw fruit salad (shred apples, figs, grapes, Bananas etc but no citrus fruits take one tablespoon of cod liver oil, twice a Day.

### DAY NO. 3

**Breakfast** Blended raw fruits and 300ml raw certified milk

**Lunch** Fresh filet of ocean fish lightly sautéed, Raw cauliflower or other raw fresh vegetables, 300ml raw certified milk with 1Tbl spoon of powdered brewers' yeast and 1 Tbl spoon of blackstrap molasses

**Dinner** Fresh (or Kosher) beef liver lightly sautéed with onions. Mixed green salads, Melon, or other fruit in season. 300ml raw certified milk. Take one tablespoon of cod liver oil, twice a day.

### DAY NO. 4

**Breakfast** Prunes or prune juice and 300ml raw certified milk

**Lunch** Veal kidneys, lightly sautéed Mixed green salad, 300ml raw certified milk with 1 Tbl spoon of powdered brewers' yeast and 1 Tbl spoon of blackstrap molasses.

**Dinner** Halibut steak (or other seafood) broiled raw spinach salad half avocado. Strawberries or other fruit in season, 300ml raw certified milk.

Take one tablespoon of cod liver oil, twice a day.

### DAY NO. 5

**Breakfast** Cantaloupe half or other raw fruit in Season, 300ml raw certified milk

**Lunch** Half avocado, sliced tomatoes, and watercress. 300ml raw certified milk with 1 tbl spoon of powdered brewers yeast and 1 tbl spoon of blackstrap molasses.

**Dinner** Fresh beef liver patties, as rare as you can eat them mixed green salad. rhubarb. 300ml raw certified milk

Take one tablespoon of cod liver oil, twice a day

#### **DAY NO. 6**

**Breakfast** Unsweetened frappe or prune juice,  
Veal kidneys lightly sautéed 226.8g raw certified milk.

**Lunch** Shrimp salad Cantaloupe half or other raw fruit in season 300ml raw certified milk with 1 Tbl spoon of powdered brewers' yeast and 1 Tbl spoon of blackstrap molasses

**Dinner** Large chef's salad including raw peas, raw string beans and other uncooked vegetables and greens. Plums or other raw fruit in season 300ml raw certified milk Take one tablespoon of cod liver oil, twice a day.

#### **DAY NO. 7**

**Breakfast** Sliced bananas 300ml raw certified milk

**Lunch** Lightly boiled fillet of sole Carrot sticks and watercress Grapes.  
300ml raw certified milk

**Dinner** Lightly sautéed sweetbreads, raw vegetables mixed in blender honeydew melon or other raw fruit in season. 300ml raw certified milk  
Take one tablespoon of cod liver oil, twice a day

## **7. CANCER**

Cancer is abnormal multiplication of cells. The affected cells seemingly have no built-in brakes to halt cell division. There are many cancers, with different characteristics and they occur in different locations in the body such as breasts, liver lungs ovaries, stomach bladder and the skin among others. Cancer is caused by different factors and requires different treatments. As the abnormal mass of cells grows, blood vessels are formed to supply the tumour with nutrients it requires to support its growth. Eventually, the tumour invades normal (healthy) tissues and may spread. Clinicians describe cancers by their size and extent, specifically if the tumour has spread to surrounding lymph nodes or to distant sites in the body. These guidelines will dwell much on dietary related cancers.

### **Dietary Related Cancers**

It is estimated that diet may be responsible for a third or more of all cancer cases. Stomach cancers are high in parts of the world where people eat a lot of heavily smoked, pickled or salt cured foods that produce carcinogens. Alcohol is also associated with cancer of the mouth, bladder and liver just to mention a few. Fats eaten in excess may promote cancer in part by contributing to obesity.

Examples of dietary related cancers include:

- Oesophageal cancer
- Stomach or colon cancer
- Colorectal cancer
- Liver cancer (Hepatitis)
- Breast cancer
- Cervical cancer
- Bladder cancer
- Prostate cancer

## **Signs and Symptoms of Cancer**

A person who has cancer may present some or all of the following signs and symptoms:

- Malignant tumour (tumours that stop growing without interventions but can also grow out of control)
- Loss of appetite
- Nausea and vomiting
- Wasting and general ill health

## **Risk factors of cancer**

There are several factors that puts an individual at a higher risk of developing cancer. These include:

- High alcohol use;
- Tobacco use;
- High use of preserved foods e.g. tinned food;
- High intake of salt-preserved foods such as dried salted fish;
- Low intake of fruits and vegetables;
- High intake of fat particularly saturated fat;
- Obesity;
- Genetic make-up;
- Aging which affects immune function;
- Iron overload;
- Folate deficiency;
- Artificial sweeteners;
- Red meat (regular eaters at higher risk) and;
- Lack of physical activity.

## **Preventing and managing cancer dietary guidelines and recommendation**

If the client feels too weak high energy foods may assist to boost the levels such as 1 tea spoon of plumpy nut or Sibusiso once a day in severe weight loss may help.

- Take a lot of fruits and vegetables especially green and yellow ones
- Take a lot of water per day, it helps to remove waste products (2-3liters/day)
- Control weight and obesity (avoid becoming overweight or obese)
- Reduce the consumption of total saturated fats
- Increase fibre intake per day from whole grain foods like mgaiwa, millet, sorghum, brown bread
- Minimize the consumption of salt cured, salt-pickled, and smoked foods
- Reduce alcoholic beverages
- Vary food choices

### **Sample of daily menu for food stuffs for meals for people with cancer**

#### ***Breakfast***

- Fruits and vegetables especially green and yellow ones such as paw paws, mangoes, bananas, citrus fruits and also natural fresh or 100% fruit juices.
- Whole grain cereal such as phala la mgaiwa, phala la mawere, phala la mapila kapena mchewere, soya porridge), or rice pudding.)
- Brown bread with honey, butter or low fat margarine
- Soya coffee, or coffee, or milo, or cocoa, or tea without milk. Lemon glass and chidede tea.

#### ***Mid-day meal***

- Fruit or natural fresh fruit juice.
- Pulses, eggs, fatless meat, chicken and all other types of poultry
- mgaiwa nsima, potato, cassava, green bananas, rice, or pasta

- Fresh or preserved vegetables like chisoso (jack bidden pilosa), bonongwe (amaranths species), mnkhwani (pumpkin leaves), kholowa (sweat potato leaves) or salad

### ***Evening meal***

- Fruit or natural fresh fruit juice,
- Egg, or poultry, or mice, or grass, or hoppers, or caterpillars, or flying ants
- Fresh vegetable salad
- Beans, or peas, or pigeon peas, or cow peas,
- Green bananas
- With a glass of skimmed milk.

### ***Bedtime***

- A cup of natural fresh fruit juice.

### **Treatment of cancer**

Patients with cancer should be referred to the hospital for treatment. Treatment is aimed at preventing further tumour growth and to reduce pain. This includes chemotherapy, radiotherapy, surgery or a combination of the three and can only be done by medical practitioners.

## 8. PEPTIC ULCERS

An ulcer is the damage to the inner lining (the mucosa) of the stomach or the upper part of the intestine (duodenum). Ulcers are sores that occur on the lining of the. The digestive tract is made up of the stomach, oesophagus, duodenum (the starting point of the intestines) and the intestines. The vast majority of ulcers are located in the duodenum, but they occur in other places as well. The peptic ulcer is the ulceration of any part of the alimentary canal which comes in contact with gastric juice. The term peptic ulcers is used because evidence showed that it develops from a loss of the ability of the gastric mucosal to withstand the effects (action) of the gastric juices such as pepsin, and hydrochloric acid. Peptic ulceration is often associated with emotional stress. The following are the most important causes of peptic ulcers.

- The most common cause is infection of the stomach with bacteria called *Helicobacter pylori* or *H. pylori*. This infection is quite common; about half of the world's population is infected. These bacteria cause the stomach to make too much acid, which damages the lining of the stomach or duodenum and can cause the ulcer.
- Some medicines, called non-steroidal anti-inflammatory drugs (NSAIDs), can cause peptic ulcers. Examples of these medicines include aspirin, ibuprofen, naproxen and diclofenac. However most people can take these safely.
- Smoking and drinking excessive alcohol increase the chances of developing a peptic ulcer.

### Symptoms of peptic ulcers

Some people with a peptic ulcer have no symptoms. However, many people have upper abdominal pain usually just below the breastbone (sternum). You may sometimes feel a pain in your back. The pain usually comes on an hour or two after eating and can be relieved by more food or antacid medicine. It may also wake you at night.

Other symptoms may include:

- Belching (bleeding when coughing)
- Heartburn
- General discomfort or pains in the upper central abdomen. The pain comes and goes and is normally associated or related meal.
- Bloating or fullness after eating
- Feeling sick
- Difficulty swallowing or regurgitation
- Persistent nausea and vomiting
- vomiting blood or vomit with the appearance of coffee grounds
- Black or tar-like stools
- unintended weight loss
- Anaemia (paleness and fatigue)
- Sudden, severe and incapacitating abdominal pains

### **Types of peptic ulcers**

There are two types of peptic ulcers

- 1) Gastric ulcers (stomach ulcers)
- 2) Duodenal ulcers

#### **1. Duodenal ulcers**

Ulceration of the duodenal comes when the part is in contact with the gastric juice. With duodenal ulcers the pains when the stomach is empty and it relieves when the person eats. But the meal should not be too large or peppery. It is believed that duodenal ulcers is associated with higher acid out put, so when the stomach is empty (hungry), gastric juice is still produced higher than normal.

#### **2 Gastric Ulcers**

A gastric ulcer, also called a stomach ulcer, is a raw, eroded area in the lining of the stomach. Gastric ulcers occur in people who take anti-inflammatory drugs, such as aspirin, ibuprofen, and naproxen; drink alcohol; smoke tobacco; have a high caffeine intake and often feel stressed.

A gastric ulcer develops when stomach acids and digestive juices injure the stomach's lining of protective mucus. Gastric ulcers most commonly are caused by the use of non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin, ibuprofen and naproxen. Aspirin is the NSAID most likely to cause ulcers.

Gastric ulcers may also develop from the presence of bacteria called *Helicobacter pylori* (*H. pylori*), decreased resistance of the lining of the stomach to gastric acids, increased production of gastric acids and infection, certain types of medication, and disorders that cause over secretion of stomach juices. Ulcer can also be caused by the use of tobacco, alcohol and caffeine.

### **What are the symptoms of gastric ulcers?**

The symptoms of gastric ulcers include indigestion and heartburn in the middle of the upper abdomen, nausea and loss of appetite, weight loss and repeated episodes of gastrointestinal bleeding. About 30% of patients with gastric ulcers are awakened by pain at night. Many patients have periods of chronic ulcer pain alternating with symptom-free periods that last for several weeks or months. The pain may be relieved by eating or taking antacids, and may get worse a couple of hours after meals or before meals.

If the gastric ulcer is bleeding, the patient may vomit bright red blood or digested blood that looks like brown coffee grounds and have black, tarry bowel

### **Prevention of peptic ulcer**

You can greatly reduce the chance that you will get a peptic ulcer if you:

- **Don't start smoking.** If you smoke, quit. Smokers are much more likely to develop ulcers than nonsmokers.
- **Avoid taking certain medicines.** Avoid taking aspirin, ibuprofen, and other nonsteroidal anti-inflammatory drugs (NSAIDs) for longer than a few days at a time. If you are taking aspirin regularly for heart problems, ask your doctor about taking another medicine to help protect your stomach and intestines from ulcers.

- **Drink alcoholic beverages only in moderation.** Limit alcohol to 2 drinks a day for men and 1 drink a day for women. Never drink alcohol on an empty stomach.

### **Principle treatment/ management of peptic ulcers**

For the person with peptic ulcers basic principle treatment or management is;

- 1) The person requires rest both physical and psychological rest
- 2) The advice related to diet is;
  - Eat 5 to 6 small meals a day instead of 3 larger meals. It is important that you avoid overeating. Frequent, smaller meals will be more comfortable and easier on the stomach than two or three large meals a day.
  - Eat a diet rich in fibre, especially from fruits and vegetables
  - Rest and relax a few minutes before and after each meal, as well as remaining relaxed during meals.
  - Eat slowly and chew you food well
  - Avoid eating within 3 hours before bedtime
  - Eat foods that are in low fat
  - Avoid foods that are fried
  - Avoid foods that are spicy and peppery because these will irritate the stomach further
  - Cut down on the following foods: Coffee ,Decaffeinated coffee, Cola drinks, Carbonated beverages, Citrus fruits, Tomato-based products, Chocolate,
  - Avoid alcohol
- 3) Milk may also be used as part of the treatment for ulcers because milk proteins and other protein help in neutralising the gastric acid and assist in the treatment, but it is short period because milk is food will be moving into the duodenum and so on for the utilisation in the body.

- 4) Quit smoking, because in the smoke there is a drug called nicotine, which increases secretion of the gastric juice and directly causes gastric mucosal irritation.

### **Food which may be eaten with someone with ulcers**

A person with peptic ulcers is not prevented from eating any of the following foods: boiled and roasted low fat meat (lean meat), bread (brown or white), boiled Irish potatoes, Nsima from refined maize flour, rice, all kind of fruit except those containing citric acid like lemons and oranges, vegetables like bonongwe, mnkhwani, chisoso etc, boiled fish, low fat milk and milk product, eggs, chicken (without skin)

### **Foods to be avoided**

***Seasonings and Condiments*** like Garlic, Barbecue sauce, Chili sauce, Chili pepper, Chili powder, Black pepper,

***Vegetable*** like Raw vegetables (salad), Broccoli, Cabbage, Onions, Cauliflower, Cucumber, Green peppers, Vegetables prepared with added fat and Tomatoes and tomato products

***Fruit*** like Lemons, Grapefruit, Oranges, Pineapples, Tangerines, Citrus juices such as orange, pineapple and grapefruit juice

***Animal foods*** like highly seasoned poultry with skin, highly seasoned fish, Fried meats, Fried poultry, Fried fish, Fatty meat, Whole milk, Chocolate milk, Buttermilk made with whole milk, Evaporated whole milk, Cream, Strong flavoured cheeses

***Legumes*** like Dry beans and peas prepared with fat, Chunky peanut butter, Nuts

***Snacks*** like High-fat snacks: Chips, Fried potatoes and Buttered popcorn, Cakes, Doughnuts, Coconut, Chocolate, Creamed candy, All sweets and desserts containing nuts, coconut or fruit

***Beverages*** like; Carbonated beverages, Coffee (regular or decaffeinated), Caffeine-containing beverages like Coffee, Tea, Colas and Orange soda and Alcoholic beverages

## Sample menu for peptic ulcers

### *Breakfast*

- 2 cups of polished rice porridge tsp butter
- ¾ cup skimmed fresh milk or low fat milk

### *Mid-morning*

- 4 pieces of boiled irish potato
- 1 cup of fruit juice ( mango)

### *Mid-day meal*

- 1-2 pieces of Nsima from refined maized flour
- 30 grams fatless meat without adding any condiment or seasoning
- Vegetables, can be bonogwe
- 1 ripe banana
- A glass of water

### *Mid – afternoon*

- 1 glass of fresh fruit juice

### *Evening meal*

- 1 full plate( medium size) of mashed Irish potatoes
- 3 to 4 pieces of boiled beef with out any condiment or seasoning
- Vegetables from the permitted list
- A glass of water
- 1 ripe banana

### *Bedtime*

- 1 slice white bread
- ½ cup skimmed milk





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