

infections. It is found particularly in citrus fruits (*oranges, grape fruit, lemon and naartjies*). Guavas, mangoes, maroelas, tomatoes and potatoes are also good food sources.

- **Vitamin A** is especially important in keeping the linings of the skin, lungs and gut healthy. It is found mainly in dark green and yellow, orange and red fruits and vegetables. These include spinach, morogo, broccoli, pumpkin leaves, green peppers, sweet potato, Hubbard squash, pumpkin, carrots, yellow peaches, apricots and mangoes. Liver is one of the best sources of vitamin A and other good animal sources include butter, cheese and eggs. During infections there is an increased loss of vitamin A from the body.
- **Vitamin B6** is necessary to maintain a healthy immune and nervous system. This vitamin is lost with some medicines used in the treatment of TB. Good food sources include white beans, potatoes, meat, fish, chicken, watermelon, maize, grain, nuts, avocado, broccoli and green leafy vegetables.

### Selenium

**Selenium** is a mineral and another important nutrient for the immune system. It helps to activate the available T-cells. Good sources include whole grain foods like whole wheat bread, bran flakes, mealies, samp and millet and also milk and dairy products like milk, yoghurt and cheese. Protein-rich foods like meat, fish, poultry and eggs are also good sources and so are peanut butter, dried beans, and also nuts.

### Zinc

**Zinc** is also an important mineral for the immune system. The food sources include meats, fish, poultry, shellfish, whole grains cereals, mealies, beans, peanuts, milk and dairy products.

### Flavonoids and phytosterols

**Flavonoids** and **phytosterols** are natural substances found in fruits and vegetables, but which are not nutrients. They are now known to play an important role in helping the immune

system and in the prevention of cancer and other diseases. Flavonoids are found in citrus fruits, apples, berries, red grapes (*also grape juice*), carrots, onions, broccoli (*also cabbage, cauliflower and Brussels sprouts*), peppers and green tea. Phytosterols are found in a large number of foods, so eating a variety of fruits and vegetables will ensure a good intake. Seafood, peas, nuts (*including peanuts*), seeds (*sunflower and sesame*) and whole grains are particularly good sources.

### Alcohol

**Alcohol** can interfere with immunity by depleting the body of vitamins that are used to boost the immune system. The drinking of alcoholic drinks like beer, wine, brandy, whiskey, etc. should be avoided at all costs.

**REMEMBER: A good vitamin intake can be ensured by eating as many fruits and vegetables as available and affordable. To get the most vitamins from food, it is better to eat food in as natural a form as possible. See the section "Eat lots of fruits and vegetables" on page 8.**

## FOOD SAFETY PRINCIPLES

### Food and HIV Infection

***It is very important to remember that:***

- **HIV/AIDS cannot be spread by food and water.**
- **Sharing eating utensils** like cups, plates, knives and forks with HIV positive people **cannot spread the virus.**

It is safe to share meals with people who are HIV positive. In the later stages of the disease people living with HIV/AIDS often require assistance with food preparation. This poses no threat of HIV infection to those caring for the infected person. When helping to feed someone with HIV/AIDS, touching them poses no risk.

Everyone should follow these food safety guidelines, whether they are HIV positive or not. They are meant to increase awareness and not to create fear.

## Germs and Food Poisoning

Even healthy people sometimes experience diarrhoea, nausea, upset stomach, cramps and vomiting, not knowing what caused it. This is often the result of eating contaminated or spoiled food. "It was probably something I ate" we usually say, knowing that bacteria or germs that can make us ill are taken in with food. Germs that can cause food poisoning are not visible. It is therefore difficult to tell if food is spoiled simply by its appearance, taste or smell. Food poisoning can range from mild to severe episodes and in some cases it can even cause death.

A healthy body is equipped to handle many germs, but when the immune system is weakened the body becomes less able to fight off germs. People with HIV/AIDS are thus more vulnerable to germs and they have to be very careful with food. Any illness, including those caused by food, could further weaken the immune system. To guard against illnesses carried in food it has to be stored, handled and prepared in a safe way.

## Germs Commonly Found in Food

**Raw and undercooked chicken, meat, fish and eggs, unpasteurised milk and water that does not come from a tap** are the main dangers. The three most common causes of food poisoning in people with HIV/AIDS are:

### Campylobacter

This causes symptoms that include abdominal pain, diarrhoea (*stools sometimes contain blood*), nausea, headache, muscle pain and fever. It usually starts 2 to 5 days after eating the food and can last for 7 to 10 days.

### Listeria

This causes flu-like symptoms such as chills, fever and headache and sometimes also nausea and

vomiting. The symptoms can start 2 to 30 days after eating the contaminated food. In serious cases it can spread to the blood stream and cause inflammation of the brain (*encephalitis*).

### Salmonella

This causes flu-like symptoms, sometimes together with nausea, vomiting, abdominal pain and diarrhoea. The symptoms develop 6 to 48 hours after eating the contaminated food and can last for up to a week.

## Cooking and Eating Defensively

Children are often taught about hygiene from a very early age. It becomes second nature in adults and may easily be taken for granted in healthy people. People with HIV/AIDS are at a higher risk of infections by germs that are carried in food and water. Extra care and awareness of the steps to take to lower this risk is needed.

### Personal hygiene around food

- Always wash your hands thoroughly with soap and water (*with preferably warm water*) before touching your food. Do this every time between touching raw and cooked food.
- It is very important to wash your hands after touching pets and other animals, after visits to the toilet and after sneezing or blowing your nose.
- Cover all wounds to prevent contamination of food during preparation and handling. If you have cuts or sores on your hands, they must be covered when working with food. The use of elastic plasters may keep the wound clean, but can become dirty and contaminate the food. Rubber gloves will keep the wound clean and protect the food.

### Clean and safe water

- In South Africa it is generally safe to drink water from a tap. If you get your water from a river or well, **drink the water only after boiling it.**
- Use the bleach method to make the water safe when it is not possible to boil the water. **Add 1**

**teaspoon** (5 ml or one capful if the bottle has a screw cap) of **bleach** to **25 litres of water**. **Mix it well** and let it **stand for 2 hours** (or preferably overnight) before using it.

- Store clean and safe water in a clean container with a lid or covered with a cloth.
- Cool drinks and ice cubes should also be made with water that is clean and safe.

### Safe food shopping

- It is safer to buy your foods in amounts that can be eaten before they spoil. It is sometimes cheaper to buy food in bulk, but without a fridge for safe storage this is not useful. For example, any meat not used within two days should be frozen.
- Do not use canned food if the can bulges or if it is dented or leaking. Do not be tempted by discounts on damaged cans.
- When buying cold meats and cheese, pre-packed and sealed products are safer. Cold meats that have been in the display case for some time are not safe.
- Do not buy cracked eggs. It is wise to inspect the eggs in the shop before they are bought.
- Many foods now have "**Sell by**", "**Best before**" and "**Use by**" dates. Read the labels. It is not safe to buy foods after their "**Sell by**" date. Do not be tempted to do so even if the price is marked down. Check the food in your kitchen and throw away any food that has reached the "**Best before**" or "**Use by**" date, even if it still looks good. Do not taste food that you think might be spoiled. You might not have done these things in the past and never got sick. Remember that things are different with HIV/AIDS.

### Keep a safe kitchen

- Wash all work surfaces (*table tops, counters, sinks, shelves, etc.*) with soap and water. Do not give the germs a chance to grow.
- Clean up immediately after spills.

- Wash your kitchen floors at least once a week. If your kitchen is used often, the floors will need to be washed more often. Use separate cloths for the floor.
- Keep rubbish in a covered bin. Empty and wash the bin regularly.
- Disinfect cloths, sponges and scourers with bleach. Sunlight is an effective way to kill germs naturally. It is a good idea to dry your cloths in the sun.
- Use kitchen cloths in the kitchen only. Use separate cloths and cleaning materials for your bathroom.
- Keep your kitchen well ventilated. This helps to prevent the growth of mould and fungus.

### Safe dishes and kitchen utensils

- Preferably wash your dishes in hot soapy water. Remember that it is the heat of the water, and not the soap, which is more important for hygiene. If the water gets too dirty, replace it and continue your washing. If you have enough water it is also a good idea to rinse the dishes with clean water after washing. Germs left on the plate may make you sick the next time you use your plate.
- Cracks in cups and dishes and scratches in plastic containers are ideal hiding places for germs, and it is difficult to clean properly. Replace cracked crockery and old plastic containers for your own safety.
- Use a cutting board for raw foods. The kitchen sink is not a safe place for this. If possible, use one cutting board for meat, chicken and fish and another one for vegetables and bread.
- If this is not possible, clean the board well with soap and hot water after cutting each type of food. Cutting boards made of plastic or marble, and not wood, are the safest for raw meat products. Replace your plastic cutting board when it becomes badly scratched and difficult to clean.

### **Safe foods**

- If you are not sure where food comes from or how it has been prepared, it is safer not to eat it. If you have any doubt, do not eat it.
- Make sure the food is kept away from pets and other animals.
- Always keep food well covered to prevent flies and other insects from reaching it.

#### ***Fruits and vegetables***

- Wash all fresh fruits and vegetables. If it is not possible to wash them properly, peel your fruits and vegetables. A mixture of 1 teaspoon of bleach added to one litre of clean water can be used to wash fruits and vegetables.
- Throw away any fruits or vegetables that are mouldy or rotten.

#### ***Milk and dairy products***

- Use only pasteurised milk. Pasteurisation is a process whereby milk is heated to a very high temperature, which destroys harmful germs. Look for the word "PASTEURISED" on the label. It might not be safe to drink home-produced milk. Home-produced milk should be boiled before use.
- Throw away mouldy cheese. Cutting off the mouldy part of the cheese is not good enough. Avoid blue-veined cheese and soft cheese which contain live moulds. This is not considered safe for people with HIV/AIDS.

#### ***Meat***

- Do not eat raw meat, poultry and fish, not even in small amounts.
- Cook meat thoroughly until it is cooked right through. If it is still pink inside, it is not safe for you. When eating in a restaurant, order your meat well done.

#### ***Eggs***

- Do not eat raw eggs. Always cook eggs until the white is cooked and the yolk (*the yellow section*) is firm.

- It is not safe to add raw eggs to milk shakes.
- Do not use cracked eggs. The cracks allow germs to enter.
- Wash the eggs before breaking them.

### **Keep cold foods cold and hot foods hot**

- Keep frozen foods frozen.
- Hurry home with frozen food. Food warms up and defrosts in warm vehicles. This allows germs to grow before you get home to re-freeze the food.
- Plan your shopping and pick up frozen foods last. If you know you are going to be long, pack the frozen food in a cooler bag.
- Foods frozen at home can be kept safely for 30 days only in the freezer compartment of a fridge. Germs can grow even in the freezer.
- Once frozen food has been defrosted, it should be used as soon as possible. It is not safe to freeze the defrosted food again.
- It is not safe to defrost frozen meat at room temperature. Room temperature gives germs the chance to grow and they may make you sick. Defrost frozen meat or other frozen foods in a fridge if you have one. Microwave ovens are also good for defrosting frozen food quickly.
- If you do not have a fridge, keep the food in a cool place away from the sun while it is defrosting.
- Once food has been cooked it should be eaten as soon as possible. It is not safe to store foods that have cooled down at room temperature.
- Any leftovers should be stored in a fridge if possible. Warm foods should be allowed to cool down before putting it in a fridge. **Food should not be left out for any longer than 2 hours.** Use airtight containers or cling wrap to protect foods in storage. If you do not have a fridge, keep the food covered and in a cool place.

- **Do not keep food at room temperature for more than two hours.** Be careful about eating cold cooked food that has been kept at room temperature for longer than this. This often happens at parties and large functions such as weddings. Many healthy people have suffered stomach upsets after such events. When you are infected with HIV you need to be extra careful.
- When you eat leftovers of cooked food, you should reheat them to a high temperature to make sure that you kill all germs first. It is not safe to simply warm the food up.

### Take extra care when travelling

Food safety standards are not the same everywhere. When people travel they come into contact with new germs that their bodies are not used to. Our immune systems are not prepared for this and it can be a problem even for healthy people. Diarrhoea is a common consequence. When the immune system is weakened by HIV/AIDS, it is easier to get sick from food and water that does not cause problems in uninfected people. Extra precautions should be taken when travelling. It is advisable to drink water only after boiling. Alternatively only bottled and canned drinks or water should be drunk. Do not use ice in drinks, the water used for this could be unsafe. Street foods, which are not properly heated and cooked, could also be a source of food poisoning.

## COPING WITH PROBLEMS OF HIV/AIDS

HIV/AIDS can sometimes make it difficult to eat. Some foods, which were eaten without a problem before, may now be difficult to eat and digest. Infections in the mouth cause sores, which hurt when eating, or tiredness may prevent eating. Anxiety and worry about food and nutrition can also be a problem even when feeling well. There are certain things that will help people with HIV/AIDS to eat and feel better when they have these problems. This section supplies some guidelines to help people cope with the problems of HIV/AIDS.

**REMEMBER:** The advice given for one problem might create a problem in another situation. Make sure to avoid the foods listed for each symptom if you have more than one problem at a time.

### When your appetite is poor...

- Try not to eat alone. Meals can be more enjoyable when shared with good company.
- Make meals interesting. Eat outside for a change, have a picnic or play your favourite music. When eating is a pleasant experience, you are more likely to eat well.
- Make food appealing. Add garnishes, serve the food in nice dishes or bowls or set the table nicely.
- Break your rules about mealtimes and eat whenever you feel like eating.
- Eat the food you like most. This way you are likely to eat more.
- Break tradition and have your favourite food at any time of the day (*for example: breakfast food can make an ideal bedtime snack or pizza*