

# Integrated School Health

## A Manual For Teachers



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## Introduction

The aim of this manual is to focus health education in schools towards nutrition disorders, infections and diseases that affect school-age children and community members living in and around Kakuma Refugee camp today. The manual forms part of an integrated approach to school health, and provides education and information around a set of interventions which seek to incorporate sanitation, health and nutrition into a school based platform to bring about improvements to child health in the camp. Through providing targeted information, the children can take action to protect themselves, and their family members, against disease and enhance their own nutrition intake.

Children make for efficient and eager messengers of health and nutrition messages, and these guidelines have been structured to ensure that both children and the wider community benefit. In addition, today's children are tomorrow's parents, proper information on how to keep a family healthy and well fed will have implications into future generations.

School feeding has an impact on school attendance, as well in providing a nourishing meal to fend off hunger for children to be able to learn and concentrate at school, while gaining essential nutrients for growth and development. Latrines and hand-washing facilities provide the child with tools with which to protect themselves from infection, and provision of a safe and clean environment has been shown to have a positive impact on school attendance, particularly female students. Finally, ensuring schools are inclusive to all children, and support learning under different circumstances will aid in ensuring education for all. Ultimately, healthy, well-nourished children will be more likely to go to school and flourish whilst there.

# Introduction to the FRESH framework

Evidence from around the world shows that school health and nutrition (SHN) programmes are one of the best ways to make sure that all children can attend school and be healthy when they are there. These school-based health programmes particularly benefit the most vulnerable and poorest children, thereby working to address disparities in society. SHN programmes are targeted to address the most prevalent school-age diseases such as worm infections, malaria and diarrhoeal disease. These can be addressed through programmes such as providing deworming tablets, improving the school's water and sanitation provision and by educating children on how to stay healthy. By being free of these conditions, children, especially from the poorest backgrounds, are supported to access education and maintain their health to learn well.

In order to highlight the most important approaches to effective school health programmes the *Focusing Resources on Effective School Health (FRESH) Framework* was launched in 2000 by United Nations agencies including the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), the World Health Organization (WHO) and the World Bank. *The FRESH Framework* provides a set of key principles to plan and implement effective school health policies and programmes in schools.

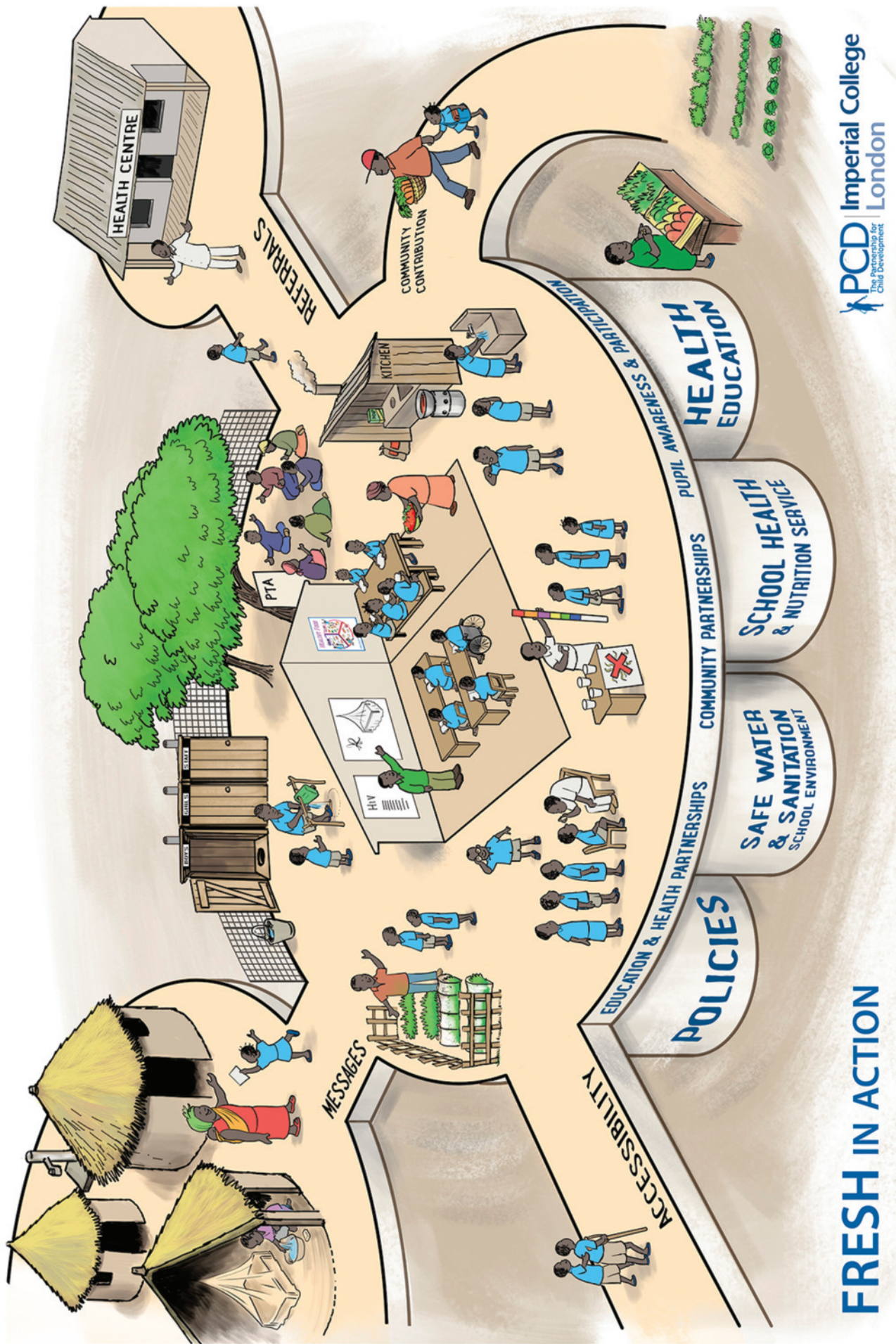
The 'four pillars' of the *FRESH Framework* include:

- 1.** Establishing health-related **school policies** is vital to ensure effective and sustainable school health programming.
- 2.** Creating **safe, supportive school environments** that provide adequate water and sanitation facilities along with other physical and psychosocial support. Key examples are access to clean water and clean, accessible toilets.
- 3.** Providing **school-based health and nutrition services** including screening for health conditions and disabilities, referral to health centres, deworming, micronutrient supplementation, and school feeding, which are known to improve education outcomes.
- 4.** Providing **skills-based health education** to improve health behaviours and inform choices of school-age children and adolescents. Key areas of health education include malaria prevention, HIV prevention and education on nutrition (including through demonstration gardens).

*FRESH* also emphasises the importance of working with a wide range of different groups to create strong SHN programmes. These groups include schools, health centres, school pupils, community groups, parent-teacher associations, faith-based organisations and civil society organisations. *FRESH* is also a useful starting point by which to assess progress in SHN programmes within your school. The following diagram shows the *FRESH Framework* in action in the school setting and highlights key school-based health services and health education activities:

The *FRESH Framework* note that approaches to all four 'pillars' should be equitable and inclusive of all children – ensuring that no child is left behind or out of school. This means that actions to include children who are vulnerable such as children with disabilities, orphans, girls, and those in severe poverty are taken at all stages of planning and implementing school health & nutrition programmes. Examples of these strategies can be health and disability screening in schools and targeting school meals for the poorest children. By designing SHN programmes to include every child, education for all children can become a reality.





## Six ways to improve the school health of children

This manual comprises messages on six key issues which can help improve the school health of children within and around Kakuma Refugee Camp. Each section outlines ideas for classroom and activity sessions to be carried out with the schoolchildren. The activities at the end of each section are to encourage children to engage in the learning process. They are by no means an exhaustive list, nor may they all be suitable for all age groups. The activities are to provide ideas and inspiration for engaging and encouraging

interactive learning in the classroom. Many of these activities can be adapted to the situation and age group as the teacher sees fit. For example if drawing paper is not available at the school, perhaps children can draw on the blackboards, or even just discuss in groups and report back to the rest of the class. Each of the topics is supported by a poster, which can be further used as an illustrative tool in the class, as well as reminding school-children of the messages beyond the classroom.

### Topics:

- 1. Nutrition Education** – Here the importance of eating healthy is discussed, where the importance of a balanced and varied diet is outlined, alongside raising awareness of benefits of consuming fortified foods in Turkana County.
- 2. SAFE from trachoma** – This section focuses on trachoma, a bacterial infection which is commonly found in Kakuma Camp. Measures are outlined on how to avoid this infection through the **SAFE Strategy (Surgery, Antibiotics, Facial Cleanliness, and Environmental Improvement)**.
- 3. Malaria** – An important disease spread by mosquitoes. This section introduces the parasite, and explains how it is spread, what the symptoms are, and how to find treatment, as well as ways that the children can protect themselves and their families from infection.
- 4. Stop Worms!** – This section focuses on intestinal parasitic worms, what they do, how they are spread and what children can do to prevent themselves from catching worms, and what to do if they are infected.
- 5. Water Sanitation and Hygiene (WASH)** – This section discusses the importance of regular hand and face washing to prevent disease in the community and in schools. What happens in the case of poor WASH and what to do if an individual is sick. It also stresses the importance of using a latrine and cleaning hands after visiting latrines and preparing food.
- 6. Inclusion in Schools** – This section focuses on disabilities, how to identify them, to ensure that all children are included in school life and able to take advantage of the advantages that schools provide.



# 1: Nutrition Education

Poor nutrition among school-age children happens when children do not get enough energy (calories), proteins, carbohydrates, fats, vitamins and minerals from the food they eat. These nutrients are required by the body to function well. Poor nutrition affects children's growth and development and can cause stunting and wasting, while at the same time reducing children's abilities to learn in school.

Even when children are well nourished, if they are hungry on any particular day, it can be difficult for them to concentrate and perform well in school, it is therefore important they eat a regular nutritious meal.

Children's meals should be rich in what has become known as GO, GROW and GLOW foods – 'The three Gs'. These three food groups are outlined on the accompanying poster and discussed in this session.



Developing children's knowledge on what are the right foods to regularly eat can have a significant impact on their attitudes and behaviour towards eating a healthy diet.

## Teaching Session 1: A balanced diet

### Objectives:

By the end of the session, students should be able to:

1. Define what a balanced diet is and explain its importance
2. Recite the 'GLOW GROW GO' message, and understand where different types of food fit into each category.
3. Understand ways to improve the diet at home
4. Understand micronutrients and how they help growth and health
5. Identify foods that have been fortified

### 1. What is a balanced diet and why is it important?

Ask the question, "What is a balanced diet?" and get as many responses as possible; write them down. Using these responses, agree on the best definition of a balanced diet along the lines of:

**A balanced diet is a meal with three different types of food; body building foods, energy giving foods and protective foods.**

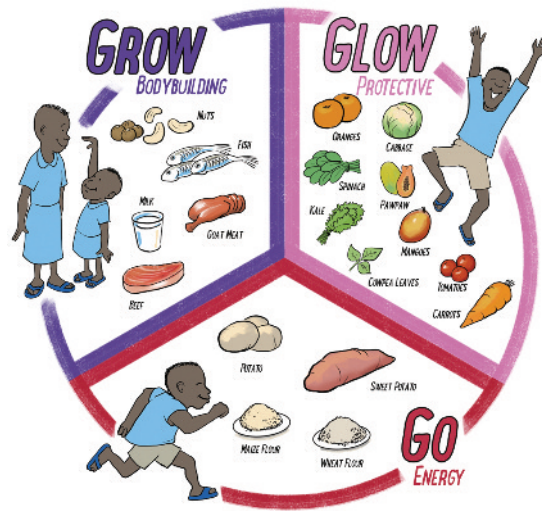
These three food groups can be best remembered as GO, GROW and GLOW foods – 'The three Gs'.

- **GO Foods** are **Energy-giving foods** (carbohydrates like cereals and root crops and fats). They give us the fuel we need to work harder and longer. If we do not eat enough energy-giving foods, we often

feel tired and it can become harder to do our everyday tasks.

- **GROW Foods** are **Body-building foods** (proteins like meat, beans and dairy). They make us grow, look and feel healthy. If we do not eat enough body-building foods, children’s growth is likely to be stunted.
- **GLOW Foods** are **Protective foods full of** vitamins and minerals (fruit and vegetables). They help make our mind and body strong and develop well. They help protect us from diseases and help us recover when we are sick. If we do not eat enough protective foods we can often fall sick and will recover slowly.

# HEALTHY FOOD



**Activity:** Ask students to name all the foods. Allow them to brainstorm for any locally available foods not included in the food chart and place them in the right food group.

**Activity:** Together as a class, make a list of foods derived from the three food groups (GO, GROW and GLOW) and ask students to outline the importance of these food groups. The table below provides some guidance on how these foods could fit into the 'GO, GROW and GO' categories.

Category	Food Sources
<b>Energy giving foods – “GO Foods”</b>	Maize, maize flour, rice, wheat flour, Irish potatoes, sweet potatoes, yams, vegetable oil, margarine
<b>Body building foods – “GROW Foods”</b>	Milk, eggs, goat meat, beef, chicken, fish, beans, peas, cowpeas, green grams, groundnuts
<b>Protective foods – “GLOW Foods”</b>	<b>Vegetables</b> – spinach, kales, cabbage, African leafy vegetables such as amaranth and African night shade Orange and yellow coloured vegetables such as carrots, tomatoes, pumpkins <b>Fruits</b> – mangoes, bananas, water melons, oranges, pawpaws, guavas etc.

**Activity:** Ask students to name the foods that they eat on a daily basis, and talk about what colours they are. Ask them to discuss which colours are missing? And to identify the foods they frequently lack in their diet.



**Activity:** get students to list the foods they ate the day before under the headings of GO, GROW and GLOW. Write them down, draw them, or list them outloud.

**Activity:** get students into pairs and ask them to write up a list of food that they would buy if they were going to a local market. The list should include the UNIT, eg "a bag of flour" or "a bunch of vegetables". Ask them what they will look out for when they buy these foods (do they look fresh and free from spoilage), and why they are buying these foods and which of the GO, GROW and GLOW food titles do the food fit under?

**Activity:** Split the classroom into 2. Get half the students to describe a healthy, balanced meal, and the other half to describe a meal that has poor nutritional value. Get a spokesperson to describe the meal, and the whole class to discuss why the meal was healthy or unhealthy.

## 2. How can we influence the diets of our families?

*Explain to students* they and their families can become healthy by:

- Eating a variety of foods from the GO, GROW and GLOW groups.
- Eating large amounts of vitamins and minerals by eating brightly coloured fruits and vegetables. Orange and, yellow colored fruits, and also dark green leafy vegetables are the most nutritious.
- Grow a 'rainbow' vegetable garden filled with many vegetables and fruits of different colours.
- Eat animal products such as beef, goat meat, fish and chicken which are rich in

iron and can prevent anaemia. When you have anaemia, there is less oxygen carried around your body in blood. This makes you tired, irritable, and leaves you with a shortness of breath that can lead to fainting.

- Do not overcook vegetables, but make sure they are still crunchy when they are eaten, this leads to a loss in valuable nutrients into the water.

## 3. Micronutrients and their role in growth and health

Vitamins and minerals are required by the body in small quantities, therefore they are known as micronutrients. Lack of these micronutrients leads to micronutrient deficiencies which are common among school children. In this session, micronutrients of public health concern are outlined, their sources and functions in the body, deficiencies and how to address them through food fortification.

*Explain that* a micronutrient is an element in food (a nutrient), which is required by humans and other living things throughout life in very small quantities. Micronutrients support a whole range of functions essential for life. Ask the students to name some vitamins and/or minerals that they know.

*Explain to students* that important vitamins and minerals include vitamin A, iodine, zinc and iron. Not getting enough of these micronutrients in daily life is known as a **deficiency**. Deficiencies of these micronutrients occur when:

- The soil in a particular region lacks certain nutrients or
- The custom diet of the region has inadequate nutrients
- An underlying infection or disease can lead to micronutrient deficiencies.

Ask students if they know what would happen if they didn't get enough of these vitamins and minerals. Explain some of the consequences outlined in the table below.

Type of Micronutrient	Sources	Function in the body
<b>Vitamin A</b>	Milk, eggs, liver. Dark green leafy vegetables such as spinach, kale and orange fruits and vegetables e.g. carrots, pumpkins, sweet potatoes, pawpaw	<ul style="list-style-type: none"> <li>• Important for healthy eyes and good vision. It also makes skin strong and healthy. It prevents problems like diarrhoea, measles, and malnutrition.</li> <li>• Lack of vitamin A leads to poor vision and night blindness.</li> </ul>
<b>Iodine</b>	Iodized salt, cow's milk, eggs	<ul style="list-style-type: none"> <li>• Helps control body processes like breathing and muscle building It is very important for the development and strength of the brain and nerves.</li> <li>• Iodine is found in food grown in soil that is rich in iodine. Soil can lack iodine in some inland or mountainous areas.</li> <li>• Lack of iodine leads to goitre (a lump below the jaw on the throat).</li> <li>• Iodine deficiency can be dangerous in pregnant women leading to low birthweight, miscarriage, or babies with disabilities.</li> </ul>
<b>Iron</b>	Red meat, fish, liver beans, spinach, eggs, dark green leafy vegetables	<ul style="list-style-type: none"> <li>• It helps keep our blood healthy.</li> <li>• If enough iron is not consumed the result can be anaemia which leads to tiredness, lack of desire to play or go to school, dizziness and headaches.</li> </ul>
<b>Zinc</b>	Meat, chicken, fish, milk, whole cereals, nuts	<ul style="list-style-type: none"> <li>• Helps keep the body healthy and promotes growth of children and adolescents.</li> <li>• Lack of zinc leads to stunted growth and poor development of children and diseases such as diarrhoea.</li> </ul>

Micronutrient deficiencies can be hard to see sometimes. To prevent them it is important to increase consumption of foods that are rich in these micronutrients and to eat a balanced diet.

#### 4. How to identify foods that have been fortified

*Explain to students* that to prevent children having micronutrient deficiencies, foods can be fortified – where vitamins and minerals are added to staple foods to improve their nutritional content.

*Ask the students* if they are aware of any fortified foods in the community.

The Government of Kenya has made it mandatory to fortify a certain amount of the foods we buy.

*Ask the students* if they can guess what these foods may be then explain these include:

- Wheat Flour – fortified with Zinc and Iron
- Dry Milled Maize products – fortifies with Zinc and Iron
- Salt – fortified with Iodine
- Vegetable Fats and Oils – fortified with vitamin A

**Explain that** all fortified foods in Kenya have a mark known as the fortification logo. **Show the logo** to the students. Ask if they have seen this before on food items at home, or in shops.



**Explain that** we should try and buy foods that have been fortified with vitamins and minerals as much as possible for better health, and we should check the packaging on flours, salt, sugar, fats and oils for the fortified logo.



**Home Activity:** ask students to bring save and bring in **empty** containers that contain the food fortification symbol. Get the students to read micronutrients discuss how this benefits them (better eyesight, growth etc).

## 2: SAFE from Trachoma

### Background

Trachoma is a blinding bacterial infection spread by contaminated or dirty hands, cloths and flies. Early on in infection, trachoma can be symptomless. Sometimes, however, infection leads to an irritated, red eye and discharge. Other symptoms include eye pain and sensitivity to light. The bacteria is mostly spread from child to child, and late stages of the disease and blindness occurs later in life.

Trachoma affects poor communities in situations with poor hygiene, crowding and insufficient access to water. People living in dry and dusty areas are particularly prone to trachoma. Protection against infection with trachoma is associated with **washing the face** (which reduces nasal and eye secretions – potential sources of infection as well as attracting flies which can spread infection), **good hygiene practices**, and **access to water**.

Blinding trachoma can be prevented, particularly when good hygiene is practiced from a young age. It can be controlled in providing better access to safe water sources, use of soap and encouraging better face and hand washing practices. Studies suggest that reducing open defecation is potentially important for reducing the transmission of both diarrhoea and trachoma. The strategy by WHO is to eliminate blinding trachoma by 2020 using a strategy known as **SAFE** (**S**urgery, **A**ntibiotics, **F**acial cleanliness, and **E**nvironmental improvement).

It is important for children to understand how to protect themselves from trachoma infection now, and into the future. They can also act as messengers to their families, encouraging family members who have trachoma to seek medical attention in the form of treatment or surgery before the effects of blinding trachoma take place.

### Concept

The following training agenda is aimed at providing students with the knowledge to protect themselves against trachoma infection. The following section provides a summary of key health messages concerning hygiene behaviour that will help break the cycle of infection. The contents of the section are supported by the '**SAFE from Trachoma**' poster.

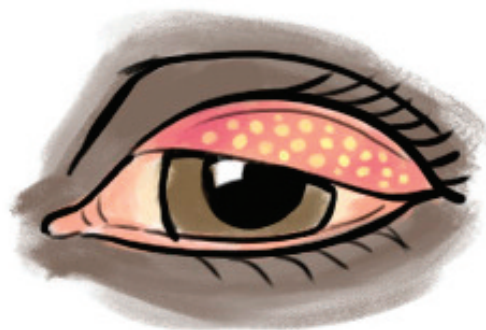
### Teaching Session:

By the end of the session, participants should be able to:

1. Understand what trachoma is
2. Understand how trachoma is spread
3. Identify the two main actions they can take to reduce trachoma transmission

#### 1. What is trachoma?

Ask if any students know what trachoma is. Explain that it is an infection of the eyes, with germs (bacteria). It can eventually lead to blindness as it causes the eyelashes to scratch the surface of the eye – in fact it is the main cause of blindness that might otherwise be prevented.



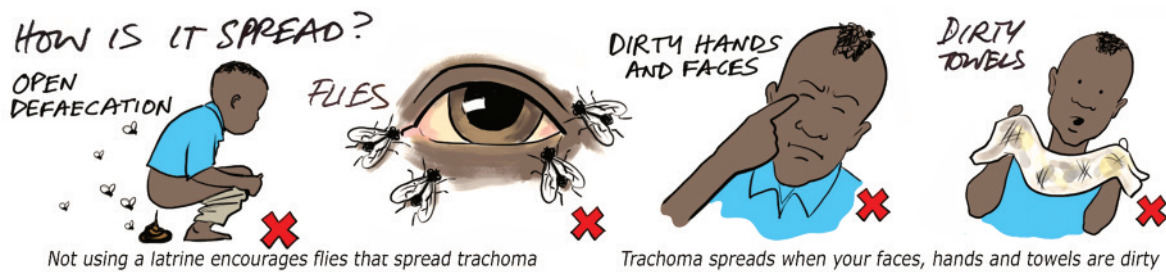


## 2. How is trachoma spread?

Ask students if they have any ideas about how trachoma is spread from one person to another? Explain that since trachoma is caused by germs, it can be passed from one person to another through close contact allowing spread of the germs.

Trachoma is mainly spread when something touches an infected eye and then later touches an uninfected eye, for example:

- Towels, handkerchiefs and tissues
- Fingers
- Flies



## 3. How can we stop trachoma?

Trachoma can be stopped through different types of action. We can remember these as **SAFE**.

**S is for Surgery:** People who have had trachoma for a very long time may need surgery to correct the damage done to their eyes.

**A is for Antibiotics:** People with eyes infected with the germs should take medicine to kill the germs.

**F is for Facial cleanliness:** Keeping your face clean keeps flies away, and stops flies carrying the germs to your eyes.

**E is for Environmental improvement:** By keeping your school and home clean, and using latrines you can reduce the flies around you and therefore lower your chances of catching the germs causing trachoma.



Surgery and medicine are needed in the more extreme cases, but we can all act now to protect against trachoma, and avoid the need for these! Keeping your face as well as your home and school clean will lower your chance of catching trachoma.

**Activity:** Ask students to cover their eyes, or blindfold one person in the class and ask them to walk to the other side of the room. Afterwards, talk about what that was like for them to be in darkness. You can repeat this for several students to give others a chance to participate.











Ask the students how they think their lives may become harder if they were blind, what would they not be able to do well? What would they need help with?

**Activity:** Get students to draw a healthy eye, ask them what makes it healthy. Ask them what eyes that are infected with trachoma look like.

**Activity:** Ask students what practices can prevent trachoma?

**Activity:** Ask students how many times they wash their face in a week? Do they wash their face everyday? Make a chart for the class, and for a week check the faces of the students, putting a smiley face when they come in the morning with a clean face, and a frowny face if their face looks dirty with pus or dust or dirt around the nose or eyes.

**Example**

Student	Monday	Tuesday	Wednesday	Thursday	Friday
Jane					
John					

**Activity:** Ask the students to check their home and school environment for things or activities that may be a risk to trachoma transmission, and things that may be protective. These could include: Tidy house, home, kitchen, burying faeces or using a latrine. Washing your face and helping small children wash theirs.

## 3: Malaria

### Background

Malaria is a parasitic disease that is spread by the bite of an infected mosquito, known as a *vector*. It affects millions of people worldwide, and poses a particular risk to children. The parasite is known as *Plasmodium* and is a very small parasite that can live inside our blood cells. Infected mosquitoes can spread the disease through their biting – or taking a ‘blood meal’. People infected with malaria can get very sick, with high fevers, diarrhea, vomiting, headache or chills. They feel tired due to loss of the blood cells as the *Plasmodium* parasite reproduces and multiplies in the body. In children, as well as in pregnant women, malaria can be very severe. Treatment must be found quickly in the form of anti-malarials. People can protect themselves by sleeping under bednets as mosquitoes that spread malaria, known as *Anopheles* mostly bite at night. Insecticide treating bed-nets or spraying indoor walls with insecticide can help kill the mosquito before it can bite you with a dangerous bite.

### Concept

The following training agenda is aimed at informing students of the risks of malaria, providing students with the knowledge to protect themselves against malaria, and detecting the signs and symptoms of malaria for early treatment. The contents of this class are complimented by the malaria poster.

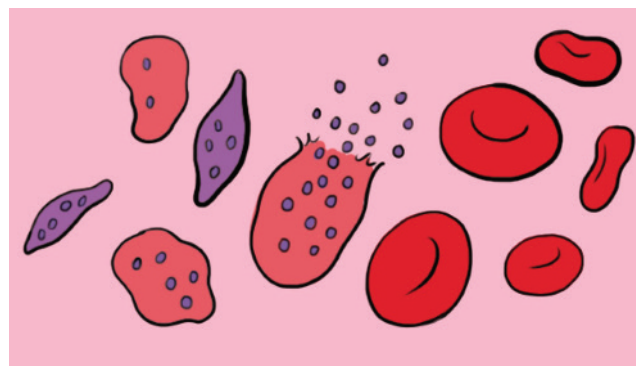
### Teaching Session:

By the end of the session, participants should be able to:

1. Understand what malaria is
2. Understand how it is spread
3. Identify the ways to prevent infection and onward spread of malaria

### 1. What is malaria?

Malaria is a killer disease. It makes people weak and unable to work or study properly. It is found all over the world, and is spread by the bite of a mosquito. If you catch malaria you may feel tired, have a fever, headache or diarrhea. The malarial parasite is known as *Plasmodium* and is very small, much smaller than a mosquito. Once inside your body it replicates and multiplies, killing your blood cells as it goes. Some people with malaria can suffer from **anaemia** due to this loss of blood cells.



Malarial parasite, *Plasmodium*

### 2. How is malaria spread?

Malaria is spread through the bite of an infected mosquito. Mosquitos called *Anopheles* are responsible. They live in almost every country around the world in areas where the temperature and humidity is right. Sometimes this means that malaria is **seasonal**: it only happens in the rainy season. It is the female mosquito that bites, as she needs the blood in order to lay eggs and reproduce. The female needs water in which to lay her eggs. It is important to minimize small pools of water, and cover water containers around your living areas. An uninfected mosquito can become infected after biting an infected person.

### 3. Who is at risk of malaria?

Everyone who is bitten by an infected mosquito is at risk, but small children, babies and pregnant women are in particular danger of falling sick, and maybe dying from malaria. It is important that if you think someone in your family has malaria that you find treatment for them.

Some people can develop resistance to malaria after years of exposure, which is why small children and babies, as well as people who have recently arrived in a malarial area are most at risk.



### 4. How is malaria treated?

If you suspect you or someone you know has malaria, it is important that you seek medical treatment at a **hospital** or **health centre**.

Treatment is usually with artemisinin based combination therapy or another antimalarial. If the infection is left untreated, it can become very dangerous and sometimes leads to death.

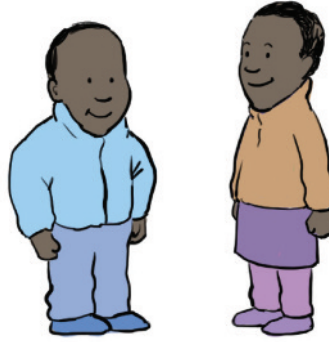


### 5. What is anti-malarial resistance?

This is where the malaria parasite, *Plasmodium*, over time, stops responding to treatment, becoming immune themselves. The sick individual will not get better, even after taking anti-malarial tablets. This is very dangerous as then the treatment will no longer cure people who are sick. This is happening more and more around the world, and is often due to poor quality of drugs, or not taking the entire course of treatment. It is therefore important to make sure the drugs are good quality and from a health clinic. It is also important to make sure whoever is taking treatment takes all the pills **at the right** time, and does not stop when they start to feel better.

It is very important to make sure that the drugs that work stay working!





## 6. How can you prevent yourself and others from catching malaria?

Sleeping under a Long Lasting Insecticide Treated Bednet (LLITN) can prevent mosquitoes from biting, as malaria mosquitoes, *Anopheles*, mostly bite at night. This is very important for any small children in your family, as well as pregnant women. It is also important to sleep under a bed net if you are suffering from malaria, as it prevents the mosquitoes from getting infected. Bednets should completely cover the sleeping person or persons and the bednet should be tucked in under the mattress. Any holes or tears that are made should be repaired immediately, mosquitoes will find a way in! They will also bite through the net if you sleep too close to the net.

Wearing clothes that cover the arms and legs after dusk can protect you from mosquito

nets. It is important to keep babies and small children protected this way as well.

**Insecticides** are chemicals that can kill, or shorten the lives of mosquitoes (so they can bite less people). Insecticide treated bed-nets and spraying the insides of rooms with insecticide can therefore help in preventing the mosquito becoming infective and biting you. Insecticides should be reapplied every 6 months – 1 year. If you have a long lasting insecticide treated bednet (LLITN), it should be replaced every 3 years.

*Anopheles* mosquitoes like to breed in water, lakes, ponds and even little pools of water made in potholes and ditches. If possible, make sure that there are no pools of water near to your home, and cover any water containers kept near the home.

**Activity:** Ask the students to check their home and school environment for things or activities that may be a risk to trachoma transmission, and things that may be protective. These could include: Tidy house, home, kitchen, burying faeces or using a latrine. Washing your face and helping small children wash theirs.

## Activities

### Activity 1: Ask the students:

1. What is the name of the type of mosquito that transmits malaria?
2. Do boy or girl mosquitos bite?
3. Why do they bite?
4. What are the symptoms of malaria?
5. What should you do if you or someone in your family may have malaria?
6. Why is important to finish all the antimalarial tablets when you are sick?
7. How can you protect yourself from getting malaria?
8. How often should you replace your bednet?

### Answers:

1. *Anopheles*
2. *Girl mosquitoes*
3. *They bite after mating in order to be able to lay eggs*
4. *Fever, muscle ache, chills, tummy ache, tiredness*
5. *Go to seek medical diagnosis and treatment with anti-malarial tablets at the local **health centre***
6. *To stop anti-malarial resistance, and keep the drugs working for other people who are sick*
7. *Avoid mosquito bites: -Sleep under a bed net, Insecticide treat bednets, wear clothing that covers arms and legs at night, and spray inside rooms with insecticides.*
  - *Stopping mosquitoes from breeding:*
  - *preventing small pools of water near homes*
8. *Every 3 years for a LLIN, and whenever it has a hole, replace or repair the bednet.*

### Activity 2:

Ask if anyone in the class has had, or thinks they have had malaria, or perhaps ask if anyone in their family has had malaria. What did it feel like? Were they still able to go to school? Did they go to the health clinic?

### Home activity: ask the students to home to find the answers to:

1. Do they have a bednet at home? Is it a LLITN? How old is it? Does it have any holes? Were they repaired?
2. What were they and their family members doing last night at dusk and before bed? What were they wearing? Were they bitten? Did you see any mosquitoes?

## 4: STOP worms!

### Background

Soil-transmitted helminths (STH) are intestinal worm parasites that are transmitted through soil, hands, and sometimes food which has not been cooked or washed properly and contain eggs of the worm. Infection leads to tiredness, stomach-ache and swollen tummy's. In the long term there are effects on school attendance and grades, as well as on a child's nutrition levels and growth and development as the worms live in the gut and eat food intended for the child.

### Concept

The following training agenda is aimed at informing students of the dangers of parasitic worm infection, and ways in which they can protect themselves through effective hygiene behavior and how to break the cycle of infection. The focus of the key health messages are the importance of good sanitation and hygiene practices. The contents of the section are supported by the 'Stop Worms' poster.

### Teaching Session:

By the end of the session, participants should be able:

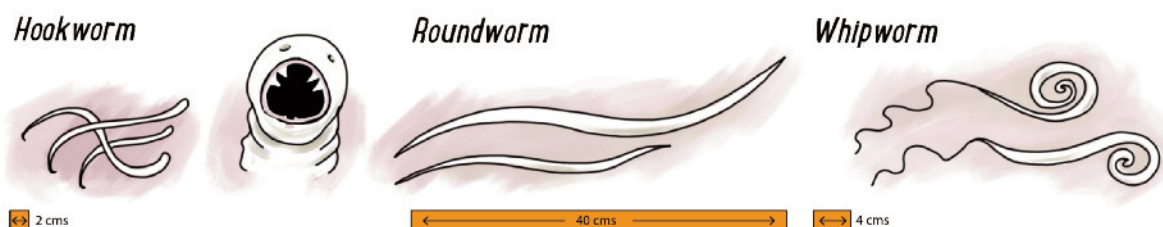
1. Understand what a parasitic worm is, and to name the three main types of intestinal parasitic worm.
2. Understand the main effects of a heavy infection with parasitic worms
3. Understand the importance of hand washing and wearing shoes.

#### 1. What are parasitic worms?

Ask if students know what an STH or parasitic infection is. Explain that they are worms that live in the stomach or gut, preventing food and nutrients that the children are eating from being absorbed into the body. Infection with worms can

make us tired, give us stomach ache and make us feel ill. In the long term, infection can prevent us growing big and strong or even prevent us from attending school and getting good marks.

There are three STH infections: hookworm, roundworm, and whipworm.



## 2. How are worm infections spread?

Ask students if they have any ideas about how *STH* is spread from one person to another?

Explain that the worms lay eggs which leave the gut through the faeces, and can infect other people, or the same people, through the skin, or through hands and food which haven't been washed after coming into contact with egg containing faeces. Hookworm eggs hatch in the faeces, and walking where someone has previously defecated can lead to infection through the foot.

Roundworm and whipworm eggs stick to hands and food from the field. Eating with dirty hands, or putting dirty hands near the mouth, as well as not washing or cooking food before eating can pass on infection.

## 3. How can we stop parasitic worms?

Worms can be prevented in different ways:

1. Always using a latrine
2. Washing hands after using the latrine, cleaning baby and before eating.
3. Cooking food to kill any worm eggs
4. Wearing shoes
5. Get deworming treatment once a year

Write these on the board. Ask the students why they think these methods will protect them from infection?

Explain that using a latrine prevents other people stepping in the faeces and becoming infected with hookworm, it also keeps faeces away from other people, and hands. Some parasite eggs can last a long time in the environment, which means they can easily be picked up without noticing that you have touched the faeces or stool.

Washing your hands with soap after using the latrine cleans them of any sticky eggs, and makes it safe to go play with your friends or to eat. Some worms live in the soil, so you should wash your hands after playing in the soil or gardening.

You should always wash your hands before

eating, as you are directly putting things into your mouth – you don't want worm eggs for lunch!

Wearing shoes can protect you from hookworms that can live in the soil in fields and around houses for a while. They can attach to your skin and crawl in, before they find their way to your tummy!

Getting **deworming medication** once a year kills the adult worms in your body, and reduces the number of worms there. These drugs are very safe, and you only need one! Sometimes your teacher may distribute the drugs, but otherwise, go to your health clinic and ask for treatment.

### How do you prevent them?



Always use a latrine Always wear shoes



Always wash your hands with soap after using a latrine & before eating Get deworming medicine once a year

## 4. Echinococcus and how to prevent it

Echinococcus is another type of worm, that doesn't normally live in people, but in dogs and cows, sheep and goats can also have these parasites. In fact, the usual lifecycle is between dogs and domestic animals, transmitting through the meat of the cows or goats (to the dog) and from the dogs faeces back to the cattle. Sometimes, however, people can get sick from this parasite from accidentally eating the dogs faeces, leading to hydatid disease. This can happen either directly from dirty, unwashed hands, or through drinking water from an open well or lagas without treating it first. It is very



difficult to treat this parasite, so it is very important to protect yourself from infection in the first place. Ways to prevent infection with this parasite include

- always washing your hands before handling food or eating

- always treating water that is collected from an open water source before drinking it.

*(ask students how to treat water? – there is more information in the next section on this if you need).*

## Activities

### 1. Role play:

Ask the students to do a role play on how worms are spread. Divide the class into groups with five members each and give them the following scenarios for the role playing. Make sure they explain how the different scenarios lead to infection with parasitic worms:

- A child playing in the dirt comes into contact with worm eggs.
- A child who just defecated does not wash his or her hands before eating.
- A child who just defecated doesn't wash his hands and then goes and plays tag with other children.
- A child defecates in the bush and a pig sniffs over the faeces, maybe stepping in it. The pig goes to have a drink from the well where the children drink.
- A goat that has worms is killed and butchered. People buy the meat, some don't cook it properly and then serve it to their families.

The students can make short plays, practice them and show them to each other. After each role play ask the students:

- How did the children get worm infections?
- What can the children do so they will not get worms in the future?

### 2. True/False: this activity can be done with the whole class. Read out the sentences below and either:

- Ask the class to call out true or false depending on what they think the statement is;
  - Ask the class to put their hands up if they believe the statement is true, followed by hands up if they think the statement is false;
  - Or label one side of the class as 'True' and one side as 'False'. Get everyone to stand up in the middle of the room and run to whichever side of the room they think the statement is.
1. Worms are harmless to children
  2. Worms are common and lots of children have them
  3. Worm eggs are found in poo
  4. You can stop yourself getting worms by washing your hands
  5. You know you have worms when your nose itches
  6. Children who have worms do well at school
  7. Worms can get into your body through bare feet
  8. Worms can get into your body through clean water
  9. Worms can get into your body from dirty hands
  10. Worms are easy to treat with medicine

## Answers to True/False:

- 1. False** – worms are harmful to children, they eat their food, drink their blood and make them weak and more prone to other serious illnesses like malaria. Worms are dangerous!
- 2. True** – worms are common, they are easy to catch and lots of children have them BUT lots of children who are smart and always wash their hands when they are dirty or after using the toilet and keep sandals on their feet NEVER get worms.
- 3. True** – worm eggs are found in poo, especially OLD poo. Children can find out about the life cycle of worms to understand when and how they need to stop eggs and larvae having a chance to get into their bodies.
- 4. True** – washing hands is one of the most effective ways to protect yourself against worms.
- 5. False** – signs that you might have worms include an itchy bottom, a sore tummy, feeling dizzy, having pale skin, having a round tummy.
- 6. False** – research has shown that children who have worms often have more days off school than children who don't have worms. Children who have worms often find it hard to concentrate in class because they feel tired or dizzy. If a child has had lots of worms for a long time, they can even stop the child's brain working as well as it should. Children without worms do better at school!
- 7. True** – worms can get into your body through barefeet – these worms are called hookworms and their larvae (babies) burrow into your skin through your feet or your bottom if you are sitting on the ground. Another kind of worm that lives in water – schistomiasis – can get into your body if you drink, swim or wade in water where it's host, a small snail lives.
- 8. False** – clean water that has been filtered and boiled or filtered and cleaned with sunlight does not have worms in and is safe to drink.
- 9. True** – dirty hands can move worm eggs from dirt on the ground or your poo, into your mouth. Once the eggs get into your body the worms can start to grow in your gut.
- 10. True** – worms are easy to treat with medicine that is cheap and safe. This medicine is called deworming medicine and is often given to children at school on the same day. You need deworming medicine once or twice a year to keep you free of worms and you need to practise good hygiene as well to stop worms getting back into your body.

## 5: Water, Sanitation and Hygiene – WASH

### Background

Inadequate water, poor sanitation and poor hygiene all provide routes for infection via infectious matter, such as faeces. Known as **WASH, Water, Sanitation and Hygiene** is important in disease control for conditions such as diarrhoea, trachoma and parasitic infections.

In particular, access to **safe water** can prevent transmission of 'water-borne' diseases such as diarrhoea and cholera. Diarrhoea is one of the top three killer diseases for children.

In addition, access to **enough water** can prevent the spread of 'water-washed' diseases such as trachoma and some parasitic infections. Spread of these diseases can occur through **poor hygiene** due to insufficient quantities of water for washing. Improving both the quantity and quality of water can therefore help prevent disease.



**Sanitation measures**, such as increasing the use of latrines can help keep faeces and infectious matter away from people, and prevent flies from breeding. Faeces often contain parasitic eggs, as well as germs. Hookworm in particular is found in faeces and can be transmitted through walking through infectious material (faeces) and not washing hands before eating or preparing food.



Schools play a key role in reducing WASH-related diseases through provision of water and sanitation facilities. However, improvements in WASH services must also be accompanied by improved **hygiene behaviour**, which is why health education in schools is so important.

Improved WASH in schools has been found to increase school attendance and to reduce diarrhoeal diseases. Simply washing hands after using the latrine, and before preparing food can reduce the burden of many of these diseases and their effects.

### Concept

The following training agenda is aimed at informing students of ways in which they can protect themselves from bacteria and parasite infection through effective hygiene behaviour. The focus of the key health messages are how the cycle of bacteria and parasite infection can be broken through hand washing, good latrine cleanliness and use, and the wearing of shoes. The contents of the section are supported by the 'Hand Washing' poster and 'Stop Disease'.

### Teaching Session:

By the end of the session, participants should be able to:

1. Understand why washing faces and hands stops the transmission of trachoma and diarrhoeal diseases
2. Understand that germs and parasites are not always visible to the naked eye
3. Be able to detect severe diarrhea and know how to treat it
4. Recite and perform the procedure for washing hands and faces
5. Identify two key times to wash hands
6. Know when and how to treat water before drinking it

## 1. Why is keeping hands and faces clean so important?

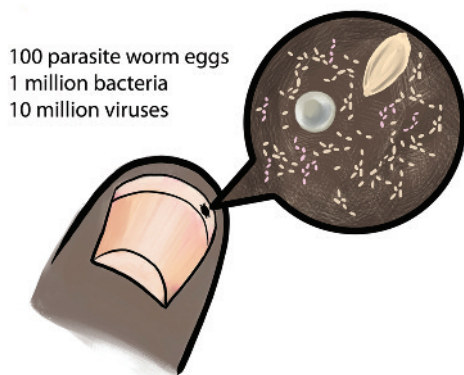
*Recap:* Over the past few weeks, we have learned that many diseases are caused by germs that spread through dirty hands and environments. These diseases include **parasitic worms, trachoma** and **cholera**.

*Explain further that:* Many other germs are in stool or faeces, and can give you a disease if you happen to eat or drink them by accident. They are very very small, so we can't see them, and it is therefore important to always be careful with our hygiene.

**Activity:** tell the students to look at their thumb.

1 gram of faeces would sit inside your little fingernail. In that gram you would find:

- 100 parasite worm eggs
- 1 million bacteria
- 10 million viruses



These germs can cause you to be sick (to vomit), and stop your digestion working well, so your faeces becomes a liquid (diarrhoea). These germs include bacteria, which are very small germs, and worms, which start as eggs so small that they cannot be seen, but grow to lengths of around 35cm! One kind of worm (hookworm) can infect you by going through the skin of your foot if you do not wear shoes.

*Ask the students which worm grows up to 35cm! (check out the Stop Worms! Poster)*

*Ask the students if they can think of any ways to avoid catching the diseases caused by these germs in poo or faeces.*

*Explain* that since these germs are present in faeces it is important to avoid contact with it wherever possible by:

- Using a latrine which means that people won't accidentally touch the germs in the faeces
- Washing your hands means that you won't accidentally eat the germs in the faeces, or pass germs on to other family members
- Keeping the latrine clean and germ-free which means you won't pick up germs when you visit the latrine
- Not going to the toilet or defecating near a water source, as germs can be spread this way and make us sick through drinking the water
- Wearing shoes to prevent accidentally stepping in hookworm larvae

Most of these actions are also important to prevent trachoma: keeping yourself, and your home and school clean will remove the flies which spread trachoma.

## 2. Detecting and treating diarrhoea

*Ask the students how can they tell that they have severe diarrhoea?*

*Explain that:* Diarrhoea is often from **eating or drinking** something that has **germs** on it. It can also be caught through dirty, unwashed hands. Signs of severe diarrhea include bloody stool or faeces, watery diarrhea or stool, and if passing more than one loose stool in a day for more than three days.

It leads to **dehydration**. In particular **cholera** is a loose, watery stool, and in young children can quickly lead to severe and life threatening dehydration.

Dehydration is characterized by dry mouth, inelastic skin (the skin on your knuckle it does not bounce back), not urinating often and headaches.



**Activity:** Ask the students to try the pinch test on **themselves** – gentle squeeze a small amount of skin on hand or lower arm, and note how it springs back to place. *Explain* that if they were dehydrated they would not see the skin springing back to place

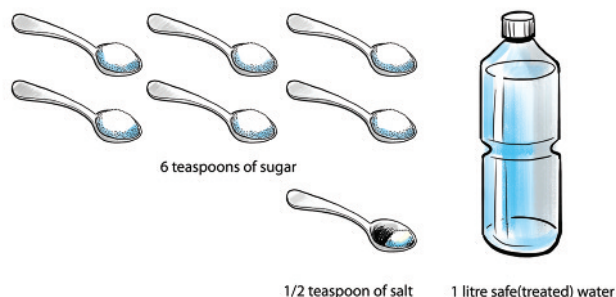
Ask the students what they should do if they or someone in their family has diarrhoea?

**Explain that:** It is important to make sure that the sick individual drinks as much water as possible, and eats as much nutritious food as they can to replace what they are losing in their stool and faeces. As a rule, 1 cup (250ml) of water after each watery or loose stool. The sick person must be given safe water (boiled, bottled, filtered). **Oral Rehydration Therapy** can help in severe cases, and when the person is too sick to eat. ORS is a **sugar-salt solution** that helps the body recharge.

**Explain** the method that can be used to make ORS at home, write the following on the blackboard and ask the students to recite it:

- 6 teaspoons of sugar
- ½ teaspoon salt
- 1 litre of safe (treated water).

**Explain** that it is very important to make sure that the quantities are correct, if not it can make the diarrhea worse.



### 3. How should you keep your hands and face clean?

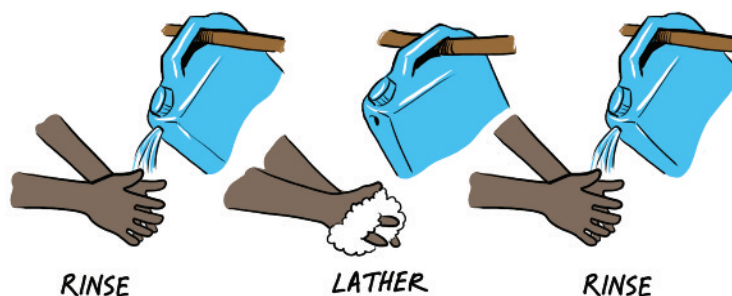
Start by asking who knows how to wash their hands and faces?

*Explain that:* To wash your hands, you should:

1. Wet your hands with clean water, for example from a tap or tippy tap
2. Rub soap all over your hands
3. Rinse the soap off with more clean water

If soap is not available, you can use ash instead.

To wash your face, you should do the same, but with soap and water, or just water, on your face. Be careful not to get soap in your eyes, which can hurt!



### 4. When should you wash your face and hands?

Start by asking who knows when they should wash their hands and faces. *Explain that:*

- Everyone should aim to wash their face every day, to lower your chance of catching trachoma
- You should wash your hands, with either soap or ash, after going to the latrine, to remove any germs that you may have picked up
- You should wash your hands before eating or preparing food, to stop germs getting into the food

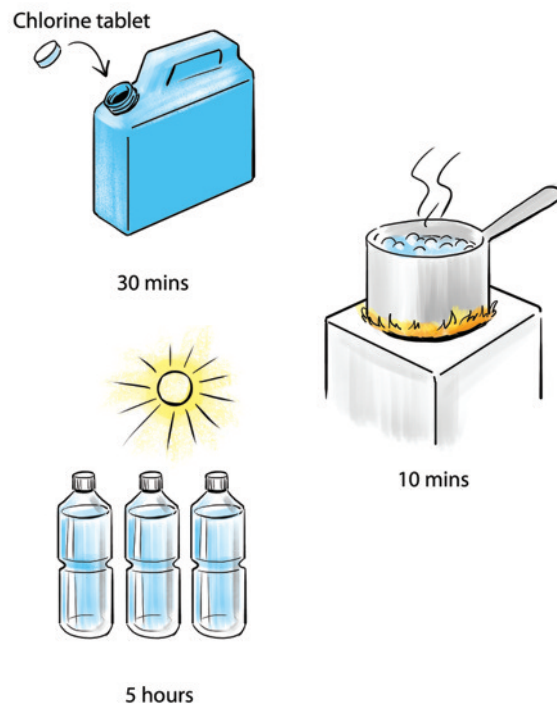
- Hands should be washed after changing the baby
- Hands should be washed before breast feeding

## 5. Drinking Clean Water

Water that is obtained from a non-safe water source, such as a stream, or an open well, or laga will require treatment at the household level prior to drinking to make it safe from germs and parasites. *Examples of this include:*

- **Boiling water:** water should be at a rolling boil for at least 10 minutes
- **Treating** with aquatabs, PUR
- **Use of chlorine:** 1/8 of a teaspoonful of bleaching powder for 10 litres of water. Powder should be dry, white and powdery and stored in a closed container. Water and chlorine should be allowed to sit for 30 minutes.

- **Solar disinfection:** Sunlight contains UltraViolet Rays which can destroy or kill germs: Let water sit in clear bottles for at least 5 hours



## Activities

### 1. Looking for flies:

Get students to walk around their communities and homes (after school), noting where they see the most flies – around animals? Around food? Near rivers and water sources? Get the students to survey the latrines, both at school and at home. Where do they see the most flies? Around clean or dirty latrines? Once they report back (next day or lesson), remind them that flies can spread germs. They are attracted to food, and sometimes their 'food' is from your eyes or nose! Some flies breed in your faeces, which may be why you see a lot around faeces, and why it is important to keep latrines and the environment clean.

### 2. Monitoring handwashing:

Make a chart with all the students in the class down one side, and days of the week down the other. For a week, get the students to make a mark on the chart next to their name each time they wash their hands – either before eating, after using a latrine, or between classes.

Student	Monday	Tuesday	Wednesday	Thursday	Friday
Jane	✓✓✓	✓✓✓✓	✓		
John		✓✓	✓	✓	

## Activities

### 3. Handshake game:

Using hand cream and ash or chalk, select a student from the class to be the 'infected' person. Cover their hands in cream, followed by the ash or chalk. They then select a fellow student to shake hands with. This person also becomes 'infected', and can join the first student in selecting additional students to 'infect' by shaking hands (so the next round of handshakes there will be a total of 4 students 'infected', the following round, there will be 8 'infected'). How long does it take before all the students in the class are 'infected'? How long does it take to get around all the students? Now, check the students's hands. At what point did the handshakes left NO chalk? Remind them that we can't see germs, like we can see chalk, but it only takes a very small amount sometimes to make us sick. Talk about what would have happened if the chalk or ash was a germ – how would people feel? How many of the class could have become sick?

Don't forget at the end of this exercise to get all the students to wash their hands with soap and water!

### 4. Role play:

Get the students into smaller groups. Identify each group as either good practices or bad practices. Depending on the group that they are in they need to design a play with the following themes:

#### Good practices:

- 3 good techniques for hygiene, nutrition and health
- 3 things their parents are doing which would protect them from diseases or provide good hygiene

#### Bad practices:

- 3 bad techniques for hygiene, nutrition and health
- 3 things their parents are doing which put themselves or their families at risk of diseases.

Tell the students that the play should be no longer than 5 -10 minutes.

For the next lesson, they show their play to the rest of the class. Note that not everyone has to have a role in the play, but do encourage all the students to have some input; designing the costumes or props or helping with the script and messaging counts!

## 4: Inclusion in Schools

### Background

A disability is a long-term injury or deficiency that affects a person's ability to interact fully in society and day to day life. The main types of disability are physical disabilities, sensory disabilities (such as vision and hearing problems), intellectual disabilities and mental health. The term "disability" can sometimes be interpreted as only including severe physical conditions but it is important to remember that disabilities cover a broad spectrum and are often not easy to see. It is important for schools, teachers and students to all be welcoming and inclusive of children with disabilities is very important to get all children into school.

### Concept

The following training agenda is aimed at informing students of issues around disabilities and impairments in the school environment. The focus of these messages are that children with disabilities should be included in all activities in the school, both education and health services, and are treated the same as children who do not have a disability. The content in this section is supported by the 'Inclusion of Children with Disabilities' poster which provides information for teachers and school health workers.

### Teaching Session:

By the end of the session, participants should be able to:

1. Understand what disability is and name the 4 common types of disability.
2. Understand that children with disabilities are just like other children but have additional barriers to getting into school and learning in the classroom.
3. Learn about the most common sensory impairments (vision and hearing) and know what to do if they or a class-mate has them.

#### 1. What is disability? What are the main types of disability?

*Start by asking students to name different types of disabilities that they know about.*

*Explain that:*

A person has a disability when they have a long-term physical or mental condition which means that they have problems doing normal day-to-day activities (like going to school or catching a bus). This is often because schools, roads, buses are not designed to be used by disabled people.

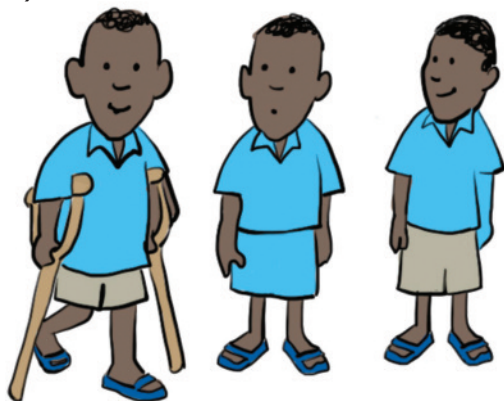
There are four main types of disability that we should know about:

1. **Physical disabilities.** These are physical conditions that children are born with or long-term injuries that affect their **movement** e.g. limited use of legs, hands or arms.
2. **Sensory disabilities.** These are conditions that affect **hearing and seeing** and are some of the most common disabilities in children e.g. needing glasses to read and/or see the blackboard and hearing impairments (either at from birth or through ear infections).

**3. Intellectual disabilities.** These are conditions that affect **learning**, students may be slower to learn to read and write and to do mathematics, and slower to pick-up useful skills like tying shoe-laces and washing hands. There are many causes of intellectual disability including problems mothers may have during pregnancy and birth (for example having malaria) and poor nutrition.

**4. Mental health conditions.** These conditions include depression (feeling sad) and anxiety (feeling worried) which can make it hard for students to **concentrate** in class and **remember** information.

Remember that all these disabilities and conditions can be very slight or more severe but all of them can make it difficult for children to get to school and to learn well when they are there. Many children who are out of school have a disability (around one in three).

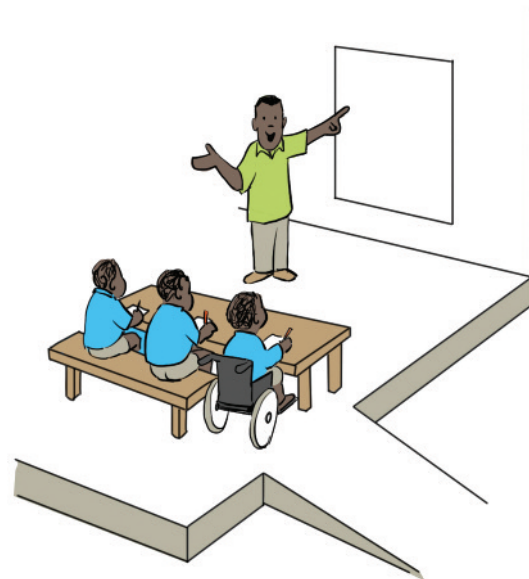


## 2. What problems are there for children with disabilities in school? What can we do to make it easy for children with disabilities to get into school?

Ask students how they think that disabilities affect students at school? Explain that:

- Disabilities can make it **harder for children to learn** in the classroom (for example not being able to see the blackboard or not able to write due to a physical disability). There are ways

to address these conditions to allow **all children** to learn e.g. providing glasses to allow children to see the teacher and the board, or moving closer to the teacher to hear and see better.



- Disabilities can **affect how children physically access the school**. The ground around the school may make it hard for children with physical disabilities to get to the classroom and to access toilets, hand-washing facilities and school canteens. Schools must be designed with this in mind to allow **all students** to get into class and to take advantage of school meals and school toilets.
- Students with disabilities may be bullied by other children**. This can affect their confidence at school and make them more likely to stay at home, or drop out of school altogether, to avoid bullies. Children with disabilities are just the same as children without disabilities but need special support to get into school. Children should encourage all disabled children to participate at school and make the school a welcoming place for **all children**.



### 3. Vision and hearing problems: the most common types of disability. How can we spot these conditions and what can we do about them?

*Start by asking students if they know why having vision and hearing problems could make it hard to learn in the classroom. Get students to cover their eyes, or cover their ears. How does it change their experience in the classroom?*

#### **Explain that:**

Vision and hearing problems are very common among students and can make it hard to learn. Vision problems affect many children and as you get older you become more and more likely to have trouble seeing. It is very important that students can hear the teacher and see the blackboard and their textbooks so that they can learn at school.

These conditions can often be solved very easily:

- If you are having trouble seeing the blackboard or hearing the teacher then let your teacher know, they can move you nearer to the front of the class and help you to get spectacles if you need them or see a doctor.
- If you need spectacles or have trouble hearing then your teacher will refer you to a health centre to be tested to see if you need spectacles or if you have wax or an infection in your ear.
- If your school has health screening days make sure that you are at school! This will get you treated more quickly which will allow you to learn more at school.







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