More Nutrition Notes

# Is there a problem in South African households?

Although South Africa is a middle income country, it has gross inequities in **income distribution**. A high proportion of the population has low incomes. Despite their low incomes, most households rely on purchased food. Poor families spend as much as 70% of their total income on food, leaving very little to meet other needs, or to undertake poverty-reducing initiatives.

According to De Onis *et al*[[1]](#endnote-1) nutritional status is the best global indicator of well-being in children. It is no accident that ‘prevalence of under 5 malnutrition’ is used as a key indicator when we measure progress towards Millennium Development Goal 1: Eradicate Extreme Poverty and Hunger (African Development Bank, 2002) [[2]](#endnote-2).

***Prevalence:***

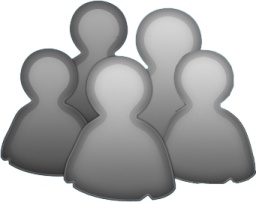
*Generally existing.*

***Eradicate:***

*To get rid of completely.*

It is well accepted that the well-being of children is fundamental in the fight against poverty, and that the nutritional status of children tells us a lot about the wellbeing of the whole family.

Therefore, the results of the 2005 National Food Consumption Survey in South Africa, which measured the nutritional status of children 1 to 9 years of age, gives us good insight in our nutritional status in general.

Research result   
National Food Consumption Survey (2005)

In 2005, children 1 to 9 years of age from all over South Africa were surveyed to determine their nutritional status. The number of children who participated in this study was 2469. Of these children:

❖ 18% were stunted (when children are smaller and shorter than well nourished children of the same age)

❖ 9% were underweight

❖ 4.5% were wasted (This is a medical term for someone who is very thin and has virtually no fat or muscle on their bodies, i.e. suffering from starvation)

❖ 1% were severely wasted (severe starvation)

❖ 14% were overweight

❖ 64% were vitamin A deficient

❖ 28% were anaemic (This is a medial term for people who suffer from iron deficiency)

❖ 45% were zinc deficient

Children who had an infection had a lower vitamin A status. KwaZulu-Natal had a particularly high prevalence of vitamin A deficiency.

Women between the ages of 16 and 35 in the same household as the children were also included in the survey. The number of women who participated in the survey was 2450. Of these women:

❖ 52% were overweight or obese

❖29% were anaemic

From these results, it is clear that South Africa is not doing well from a nutrition perspective. While **clinical malnutrition** is not all that common, **chronic malnutrition**, measured as food poverty (too little food) and low energy (not enough nutrition in the food) are estimated to exist in 43% and 55% of the population respectively.

***Clinical Malnutrition:***

*Malnutrition that requires medical treatment*

***Chronic malnutrition:***

*Malnutrition present for a long time that does not yet require medical treatment – also called sub-clinical.*

Further:

* On average, rural and urban households have only 8-10 food items in store respectively. This means they have poor dietary diversity. A good score is around 18-20 ;
* Stunting (children do not grow fast enough and are small for their age) among children aged 1-9 years is estimated at 22%;
* Sub-clinical vitamin A deficiency in children between 6-71 months is estimated at 33% and anaemia (iron deficiency) for the same group, 21% (Department of Health, 2005)[[3]](#endnote-3) ; and
* A subjective hunger scale shows 52% of households are food insecure, 23% are at risk of food insecurity and only 25% are food secure.
* The groups most **vulnerable to food insecurity** are: the rural poor, female headed households, disabled, the elderly, retrenched or evicted farm workers, AIDS orphans, households with HIV sufferers, cross border migrants and the “street homeless”. (Hendriks and Maunder, 2006)[[4]](#endnote-4).

Misselhorn (2006)[[5]](#endnote-5) described the real food security crisis in South Africa as: “..a creeping vulnerability, rooted in structural socio-economic and political conditions, eroding livelihoods, resulting in malnutrition and   
reducing resilience to environmental hazards”. This is echoed in other documents related to South Africa’s lack of progress towards reaching the Millennium Development goal to - reduce by half the proportion of hungry people, by the year 2015. (DFID, 2002)[[6]](#endnote-6).

In general, children and pregnant and breast feeding women are the most **vulnerable to malnutrition** because of their special dietary needs. The most common forms of malnutrition are protein-energy malnutrition and deficiencies in micronutrients, namely vitamin A, iron, zinc, and iodine.

# Protein-energy malnutrition



**Stunting is due to chronic malnutrition and is the major problem in South Africa, affecting as many as 40% of children in poorer areas.**

Protein-energy malnutrition occurs when children do not get enough food to meet their energy and nutrient needs. They become underweight or wasted, and eventually, if they do not have an adequate diet for some months or years, they will fail to grow normally and become **stunted** (shorter and smaller than well fed children of the same age). Malnourished children have less energy to play and run. They are often listless, look unhappy, learn slowly and have a low resistance to infectious diseases.

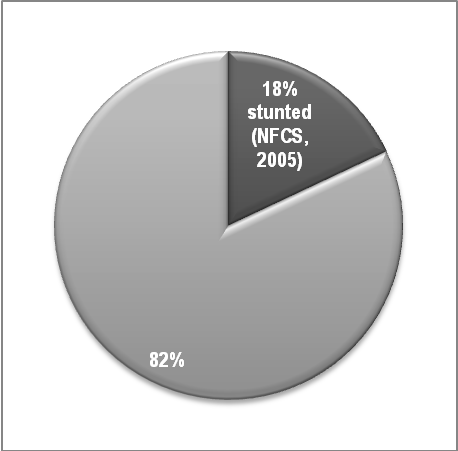
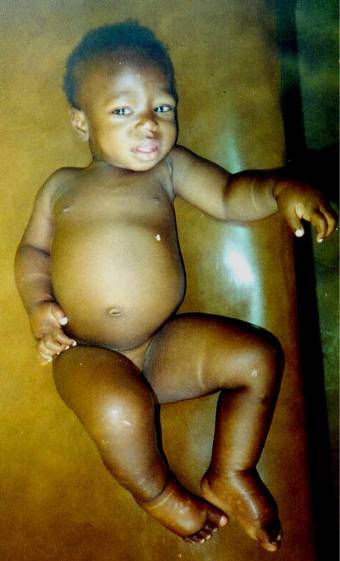


Figure : Stunting due to malnutrition in urban and rural areas of South Africa[[7]](#endnote-7)

Two severe forms of protein-energy malnutrition, namely Marasmus and Kwashiorkor, are less common in South Africa (2% on average, but higher in poorer areas).

* **Marasmus**. Signs include extremely thin legs and arms, a sunken “old person’s” face, a distended abdomen and a tendency to feel miserable and cry a lot.
* **Kwashiorkor.** This may also include a severe lack of Vitamin A and other micronutrients. The signs may appear quickly in times of stress, such as when a child is ill. The legs, arms and face of these children appear swollen, they develop a “moon” face (where the skin is pale and thin and may be peeling), and their hair becomes paler and straighter than normal. They may also appear extremely unhappy and listless.

Child suffering from Marasmus Child suffering from Kwashiorkor



In some areas of South Africa, a practice has developed over many years, of starting babies as young as two weeks old on a watery cereal porridge, in the belief that this improves their diet. In fact, this porridge is of no nutritional value to such young infants who cannot digest any of it. This practise easily causes malnutrition and severe damage to the child through. Breast milk is most nutritious to such young children.



**Infants become malnourished if they do not get enough breast milk, or if complementary foods are introduced too early or too late, or do not provide the required energy and nutrients.**

This practise is an unfortunate hybridisation of a traditional practise, where wholemeal cereals were fermented using a special natural enzyme, thereby reducing the porridge into a more digestible form for young infants when breastfeeding problems would occur. In the modern day, low-nutrient white maize meal is used, and then this is not fermented, but simply watered down to get the thin consistency.

How to tell?

The best way for a mother in South Africa to know whether her child is doing well, is to make sure that she has a **Road-to-Health Chart** for each of her children, and visit the clinic regularly to keep up-to-date with measurements and immunisations. The clinic will attend to the following aspects:

* Healthy children will increase their weight every month. Thus, monthly weight measurements, especially for infants and pre-schoolers (ages 1-5 years) is the easiest way to determine malnourishment.
* Between the ages of 1-5years, the thickness, or circumference of a child’s mid-upper arm not change much. This is because the arm muscles of a healthy child will grow, while the fat that the child had as a baby decreases. If a child is growing too slowly, or losing weight, the arm circumference will be smaller than normal. The mid-upper arm circumference of a well-nourished child is above 13.5cm. When the circumference diminishes to between 13.5-12.5cm, the child is moderately undernourished and below 12.5cm, the child is severely undernourished.



**Unfortunately, mothers are often scared of visiting the clinic, fearing that they will be scolded by the nursing sisters for failing to take proper care of their children’s nutritional needs.**

**They feel powerless to feed their children correctly, through lack of money or knowledge, and may choose to avoid the scolding, thereby placing the children at even further risk.**

* Immunisation protects the child against illness. This also helps with adequate nutrition, because sick children often eat poorly and/or lose nutrients e.g. through diarrhoea.

We saw in Chapter 2 that the role of the household food security facilitator is to help food insecure mothers/caregivers to overcome powerlessness. Helping her to discover the nutritional needs of her family, and enabling her to produce this food without the need for cash, liberates her – also from the fear of facing the nursing sister at the clinic.

# Micronutrient deficiencies

Vitamin A deficiency

This is one of the **most serious nutritional childhood diseases** and is often associated with protein-energy malnutrition. Vitamin A deficiency causes night blindness and in more serious cases may damage the eyes permanently, cause total blindness and increase the risk of infection and death.



**On e of the best ways to prevent Vitamin A deficiency is to encourage families to grow and eat food all year round that are rich in Vitamin A. These include dark green leafy vegetables and yellow or orange coloured fruits and vegetables Among animal foods, liver is high in Vitamin A. Mothers who are breastfeeding should eat plenty of food rich in Vitamin A.**

Fats and oils help in the absorption of Vitamin A, so when a diet is low in fat, only small amounts of Vitamin A are absorbed. The deficiency is often worsened by health problems such as measles and diarrhoea.

Iron Deficiency Anaemia

Anaemia is the **most widespread nutritional disorder in the world**. The most common cause is a lack, or deficiency, of iron in the diet. Other causes are parasitic infections (such as hookworm) and loss of blood during menstruation and child birth.

Iron is an important mineral needed to produce red blood cells and transport oxygen/ air in the blood. People with anaemia usually have pale tongues and lips and the inside rims of their eyelids are white.



**Iron rich foods include liver, meat and fish. Also legumes such as peas, beans, bambara, groundnut and cowpeas.**

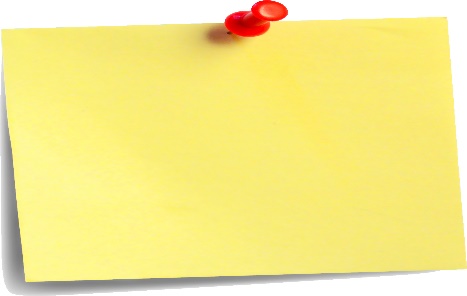
**These must be eaten with foods rich in Vitamin C such as citrus, guava, papayas, spinach, cabbage, broccoli and marrows.**

**Both legumes and Vitamin C rich foods can be grown in the garden.**

Anaemia reduces people’s ability to work, increases tiredness and slows children’s learning.

Zinc deficiency

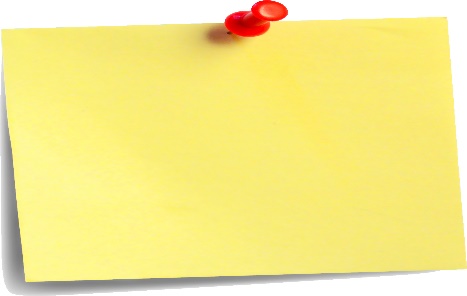
Zink deficiency causes wounds to heal very slowly or not at all. It also contributes to stunting.



**Zink rich foods are liver, red meat, shell fish and nuts. Nut trees can be grown in the homestead food garden.**

Iodine deficiency

Iodine deficiency is caused by lack of iodine in food and in the soils in which food is grown. This is most common in areas where iodine in the soil has been washed away by rain, and inland areas that do not have easy access to seafood.



**The use of iodized salt is the most effective way of preventing iodine deficiency and is highly recommended.**

Iodine deficiency disorders include goitre, which is indicated by a swelling of the thyroid gland; low birth weight; inhibited growth in children; and impaired mental development. In severe cases, brain damage can be caused.

Deficiencies can be combated by homestead food gardening

From the discussion above it is clear that many foods that combat micro-nutrient deficiencies can be grown in a homestead food garden. When families plant their own vegetables and fruit trees in their garden, they should therefore plant a variety of vegetables and fruit trees, including both winter and summer crops, with different ripening times (e.g. early and late fruiting peaches). It is also important that they plant vegetables of different colours, for example, both green and yellow vegetables. It is particularly important that they plant yellow/orange vegetables because of the high prevalence of vitamin A deficiency in South Africa.

## Meeting the food needs of different family members

Different family members have different food needs. Some specific aspects are discussed below:

* ***Infants from birth to 6 months:*** Infants from birth to 6 months should receive breast milk only. It is the best food for a baby and provides all the nutrients infants need.
* ***Infants from 6-12 months:*** By 6 months babies should be introduced to other foods that supplement the energy, protein, vitamins and minerals provided by breast milk. This will accustom the baby to varieties in food flavours and textures. These supplementary foods are called weaning foods.

Food for babies needs to be clean, soft and easy to chew and digest. At this age a baby should receive a porridge made from the staple or main food, twice a day.

By the time the child reaches 1 year, the complementary foods should be increased to 4 or 5 times a day, in addition to breastmilk. Once a baby is accustomed to liquid foods, and as the teeth appear, semi-solid and then solid foods can be introduced.

Staples like maize meal cooked with water are bulky. This means they have little nutrients or energy, compared with their volume. They need to be combined with nutrient-rich foods. These include for example mashed beans or ground nuts, mashed green leafy and orange coloured vegetables (which are rich in vitamin A), and soft fruits, such as pumpkin and papayas, with plenty of Vitamin C.

An excellent way to enrich porridge is to eat it with small amounts of animal or dairy foods such as cooked and mashed fish, chicken, meat or eggs, as well as milk and “maas”.

To increase the energy content in porridge, make the porridge from fermented or germinated cereal flour and add a little vegetable oil to it.

* ***Children from 1-5 years of age:*** Young children are often the most at risk of malnutrition. They have very high energy and nutrient needs for their body size, in comparison with adults. Young children should eat 4-5 times a day. A simple way to do this, is to prepare nutritious snacks between the main meals.

Eating habits are established early, so it is important to introduce young children to a large variety of flavours and textures of food.

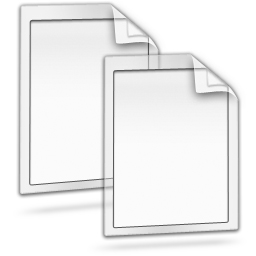
* ***School age children:*** Children from school age onwards, need two to three meals per day, plus snacks between meals.
* ***Pregnant or breastfeeding women***

Requirements for **iron** and **calcium** in pregnant and breastfeeding women are particularly high. If the mother does not satisfy the needs of her baby, the baby will draw on and reduce the mother’s own store of nutrients. This puts the mother at increased risk of illness.

A varied and nutritious diet, with adequate staple foods and relishes/stews made from vegetables, legumes, eggs, meat and fish, and plenty of fruits should be eaten. Breastfeeding women should also drink plenty of water and other fluids (soup, milk…)

***The elderly:*** If they cannot eat a lot at a time, elderly people need frequent, small meals, that can be easily chewed. Foods for the elderly should include a wide variety of grains, legumes, fruits, vegetables, and if available, dairy products.

* Except for young children who need to be fed 4-5 times a day, each family member should receive 2-3 main meals per day; ideally in the morning, at midday, and in the evening.

Copy & Handout   
Special dietary needs

# Special dietary needs of people living with HIV/AIDS

EATING WELL TO STAY HEALTHY

It is especially important that people living with HIV/AIDs eat healthy, balanced diets. Good diets prevent weight loss and help people to stay healthy longer. Losing weight is part of the disease process of HIV.

Try to eat 5-6 small meals every day, even if you don't feel like eating.

Eat the foods you like eating and make meals sociable events.

Take your time.

Drink lots of water, especially when you have diarrhoea.

Eat cooked vegetables as liquid and soft foods are easier to swallow.

Take vitamin tablets*.*

From: Cindi Nutrition Working Group, 2005.[[8]](#endnote-8)

People infected with HIV lose weight from their muscles, rather than fat. It is important to eat foods high in protein such as meat and beans. Also eat lots of energy foods such as pap, bread, rice and potatoes. Make sure you eat lots of fruit and vegetables as well. So, the point is to eat as varied a diet as possible and as often as possible. What matters is not so much what you eat, as long as you eat enough. For example a plate of soft porridge with a tablespoon of cooking oil added is more nutritious than a plate of cornflakes.[[9]](#endnote-9)

# Feeding young children over six months of age

Complementary feeding means giving other foods in addition to breast milk. Most babies should start complementary foods when they are six months old. Now breast milk alone cannot supply all the nutrients they need.

Start by giving 1-2 teaspoons of semi-solid food, for example porridge or mashed potato and add other foods to make good complementary meals. These foods need to be rich in energy and protein (ie thick not thin porridges) and need to include fat (like a bit of oil or margarine), fresh fruit and vegetables (like mashed banana, butternut or carrots), eggs, milk foods and iron-rich animal foods (like meat, fish, poultry).More semi-solid foods are given over time. By the age of eight months, babies also like finger foods that they can hold themselves and by the age of 1 year they can eat family meals with snacks.

Ways to make porridge more energy and nutrient-rich, include:

* Add oil, butter, margarine or ghee (energy) and flour made of legumes such as peanuts, beans (protein).
* Make porridge with germinated or fermented cereals.
* For germinated flour – soak your maize or sorghum grains in water for 1 day. Dry them and leave in a cool, dark place to germinate. Then dry these sprouted grains. Grind into flour.
* For fermented porridge- soak the flour in water (3 cups flour to 7 cups water) and leave to ferment for 2-3 days before cooking.



#### Recipes for feeding young children over six months of age[[10]](#endnote-10)

Nutritious porridge

**INGREDIENTS**

5 Tablespoons of thick porridge (made with germinated, fermented or plan maize meal/ flour)

1 Tablespoon of peanut/ groundnut paste or flour

1 Egg

1 Handful of chopped spinach

**PREPARATION**

Add the groundnuts to the porridge. Add the raw egg and spinach and cook for a few minutes.

This process can be used for groups of community members, but can also be used at a household level.

Facilitation Tool   
Nutrition Workshop - outline and process

### Introduction to Nutrition

Each participant names something interesting that they know/ use or do regarding nutrition. Each person offers a different comment that is recorded on newsprint.

### Group discussions on food that is eaten

Participants are divided into groups of 7-10 members. They discuss and record for report back in plenary (the larger group) the following topics:

1. What we eat every week
2. What we rarely eat
3. What we would like to eat but do not have access to and
4. What we feed the young children (ages 1-5yrs)
5. Special foods for sick and old people

### Input from facilitators on food groups

Using the LIRAPA handouts (discussed above in section 3.3), facilitators go through the go foods, grow foods and glow foods; this is done through a short introduction and then by participants selecting food items they mentioned in their report backs that fit into those categories.

Here, depending on the information given by participants, categories can be created for diabetes, high blood pressure and weaning foods as well. A discussion is held on traditional foods and their role and value in modern society.

### Nutrition gap analysis and how this can be rectified by homestead food gardening practices

Participants analyse their selection of different food groups and look at what they eat regularly. They then offer suggestions of where they may be missing food types that may provide them with a more balanced diet.

A list is made of the food types people would like to try and grow to augment their present range of food types. Each individual puts their name against the food type they would like to include in their homestead systems.

### Input on new things to try

Facilitators introduce, through discussions and sending around samples and or photographs, a few vegetables, herbs and fruits that could add variety to the diet of the participants.

Participants are then each given a chance to choose a small sample of seed for each type that they want to try and grow at home. Their names are recorded and their progress in terms of production from these seeds is then monitored.

A list of new crops participants would like to try is put together. Usually this will include a list for orders of fruit trees.

### Evaluation and future learning topics

The workshop is closed with a brief evaluation and asking for suggestions from participants for further learning around nutrition.

Activity   
Traditional crops and vegetables

### Aim

To think about the traditional crops and foods that are still being cultivated and used in your home area. Think about the nutritional benefits of promoting these practices.

### Instructions

Consider and answer the following questions.

* Make a list of traditional foods that you grew up with, or that people in your area still eat today. List the ingredients for each dish (or meal) and explain how these foods are prepared.
* Think about the nutritional advantages of using these foods. Mention at least three foods and their nutritional advantages. Write specifically about nutrition for children under 5 years of age.
* How would you go about re-introducing some of the traditional crops into an area or village where you are working?



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