

# Children's Health and Nutritional Status

Data from the 2011  
Ethiopia Demographic and  
Health Survey



This report summarises the child health and nutrition findings from the 2011 Ethiopia Demographic and Health Survey (EDHS), which was carried out under the aegis of the Ministry of Health (MOH) and was implemented by the Central Statistical Agency (CSA). The testing of blood samples for HIV status was handled by the Ethiopian Health and Nutrition Research Institute (EHNRI). ICF International provided technical assistance as well as funding to the project through the MEASURE DHS project, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Funding for the EDHS was also provided by the government of Ethiopia and various international donor organizations and governments: the United States Agency for International Development (USAID), the HIV/AIDS Prevention and Control Office (HAPCO), the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the United Kingdom Department for International Development (DFID), and the United States Centers for Disease Control and Prevention (CDC). The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the donor organisations.

Additional information about the survey may be obtained from the Central Statistical Agency (CSA), P.O. Box 1143, Addis Ababa, Ethiopia; Telephone: (251) 111 55 30 11/111 15 78 41; Fax: (251) 111 55 03 34; E-mail: [csa@ethionet.et](mailto:csa@ethionet.et).

Additional information about the DHS programme may be obtained from MEASURE DHS, ICF International, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, U.S.A. Telephone: 1.301.572.0200; Fax: 1.301.572.0999; E-mail: [reports@measuredhs.com](mailto:reports@measuredhs.com).

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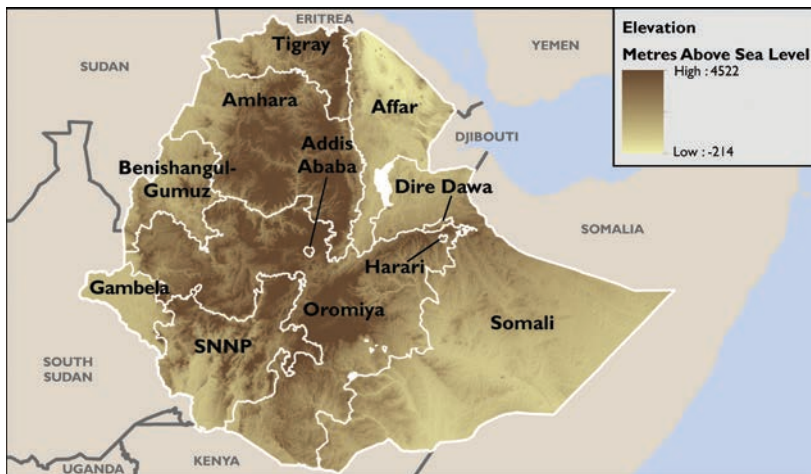
# About the survey

## 2011 Ethiopia Demographic and Health Survey (EDHS)

The 2011 EDHS is the third Demographic and Health Survey conducted in Ethiopia. It is designed to measure levels, patterns, and trends in demographic and health indicators.

In the 2011 EDHS, a nationally representative sample of 16,515 women age 15–49 and 14,110 men age 15–59 in all selected households were interviewed. This represents a response rate of 95% for women and 89% for men. The sample design for the 2011 EDHS provides estimates at the national (total, urban, and rural) and regional levels (shown below).

The Ethiopia DHS provides data on fertility, family planning, maternal and child health, childhood mortality, nutrition, malaria, HIV knowledge and behaviour, and HIV prevalence. Women interviewed in the EDHS were asked questions about the health and nutrition of their children under age five. This booklet looks exclusively at the current status of child health and nutrition based on the 2011 EDHS.



# Introduction

Ethiopian children are living healthier lives than ever before. Infant and child mortality continue to decrease, child vaccination is slowly rising, and fewer children are malnourished. And still, Ethiopia lags behind its neighbours in East Africa in many of these key indicators.

Data from the 2011 Ethiopia Demographic and Health Survey (EDHS) describe the current health and nutritional status of children in Ethiopia, and background data allow for an in-depth look at the differentials in child health and nutrition across the population. Together with data from the 2000 and 2005 EDHS, the 2011 EDHS traces changes over the last decade in Ethiopia.



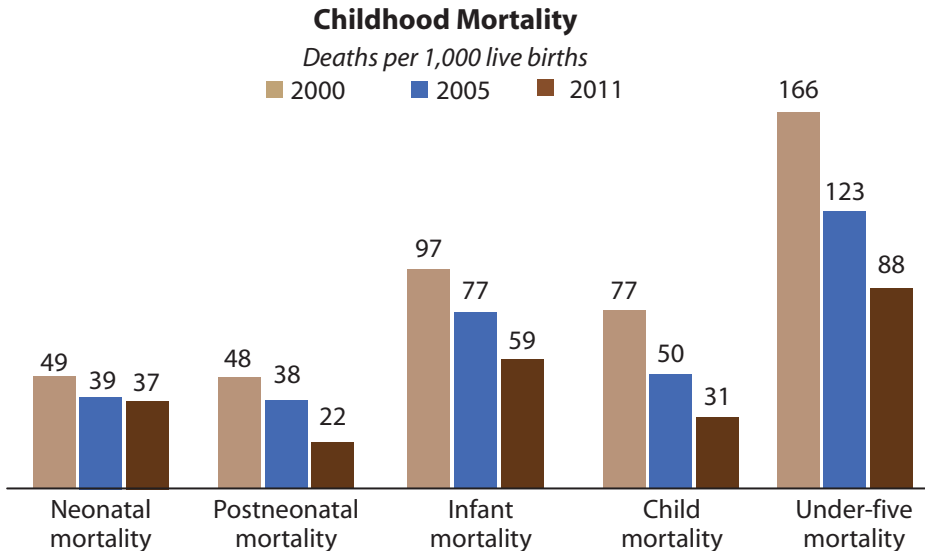
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# Childhood Mortality

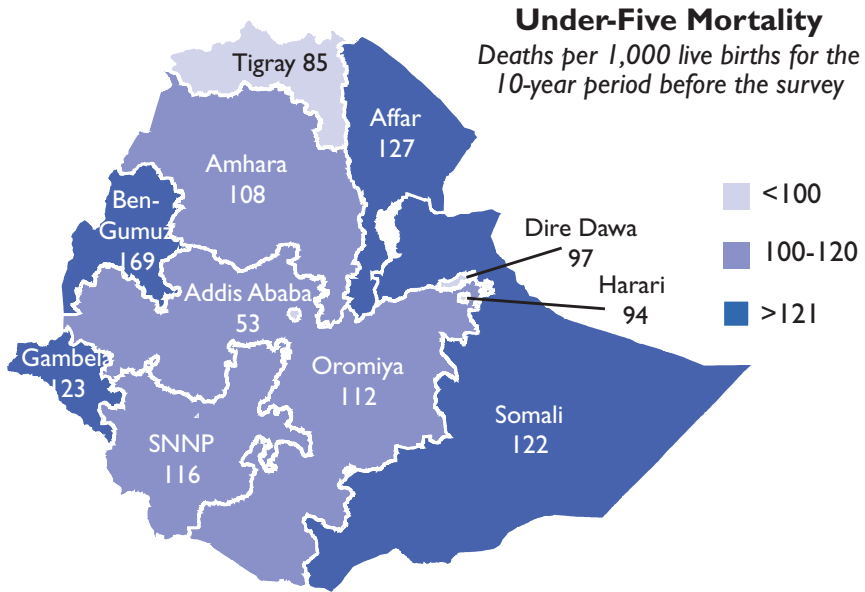
Childhood mortality rates in general, and infant mortality in particular, are often used as broad indicators of social development or as specific indicators of health status. One of the targets of the Millennium Development Goals is a two-thirds reduction in infant and child mortality by 2015.

Childhood mortality levels are decreasing in Ethiopia. Currently, infant mortality (deaths to children under one year) is 59 deaths per 1,000 live births for the five-year period before the survey, down from 77 deaths per 1,000 live births in 2005. Under-five mortality levels have also decreased from 123 deaths per 1,000 live births in 2005 to the current level of 88 deaths per 1,000 live births. Still, this means that 1 in 12 Ethiopian children die before their fifth birthday.

Results from the 2011 EDHS data show a remarkable decline in all levels of childhood mortality. Infant mortality has declined by 42% over the 15-year period preceding the survey from 101 deaths per 1,000 live births to 59 deaths per 1,000 live births. Furthermore, under-five mortality has declined by 47% over the same period from 166 deaths per 1,000 live births to 88 deaths per 1,000 live births. Still, this means that 1 in 12 Ethiopian children die before their fifth birthday.



Mortality rates differ dramatically by region. The under-five mortality rate for the ten-year period before the survey ranges from 53 deaths per 1,000 live births in Addis Ababa to 169 in the Benishangul-Gumuz region.



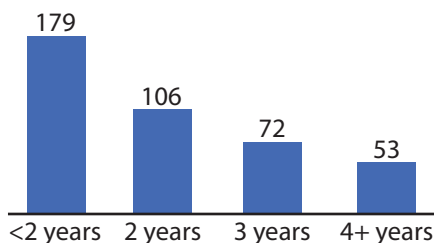
Under-five mortality also differs markedly by mother's level of education; under-five mortality for children born to a mother who has more than secondary education is 24 deaths per 1,000 live births, compared with 121 deaths per 1,000 live births among children whose mothers have received no education.

# Childhood Mortality, continued

Spacing children at least 36 months apart reduces the risk of infant death. In Ethiopia, the median birth interval is 34 months. Infants born less than two years after a previous birth have particularly high under-five mortality rates (179 deaths per 1,000 live births compared with 72 deaths per 1,000 live births for infants born three years after the previous birth). Twenty percent of infants in Ethiopia are born less than two years after a previous birth.

## Under-five Mortality by Previous Birth Interval

*Deaths per 1,000 live births for the 10-year period before the survey by years since preceding birth*



Ethiopia's childhood mortality rates have decreased significantly in recent years and are comparable to the mortality rates seen in other neighbouring countries.

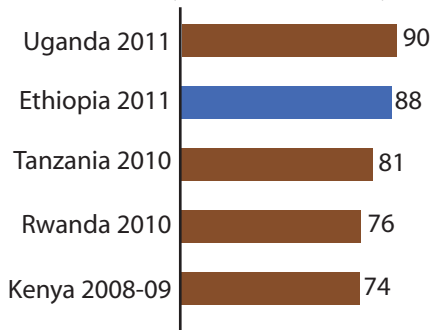
## Infant Mortality in East Africa

*Deaths per 1,000 live births for the 5 years before the survey*



## Under-Five Mortality in East Africa

*Deaths per 1,000 live births for the 5 years before the survey*





# Vaccination coverage

Universal immunisation against vaccine-preventable diseases is crucial to reducing infant and child mortality. According to WHO guidelines, children are considered fully vaccinated when they have received a vaccination against tuberculosis (BCG), three doses each of DPT (diphtheria, whooping cough, and tetanus) and polio vaccines, and a measles vaccination by the age of 12 months.

According to the 2011 EDHS, 24% of Ethiopian children age 12–23 months have received all recommended vaccines. Fifteen percent of children did not receive any of the recommended vaccines.

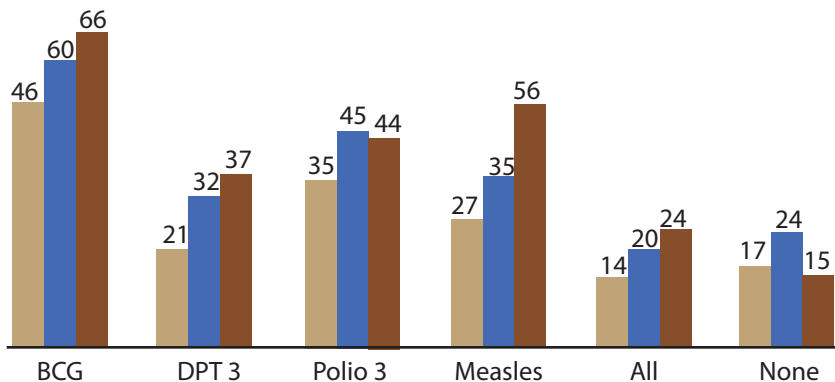
**1 in 4 children has received all of the basic recommended vaccines.**

Full vaccination coverage has increased since 2000, when 14% of children were fully vaccinated. There have been sizable improvements in coverage for specific vaccines, especially measles, which has doubled from 27% in 2000 to 56% in 2011. Substantial increases in coverage are also seen for BCG and DPT3.

## Trends in Vaccination Coverage

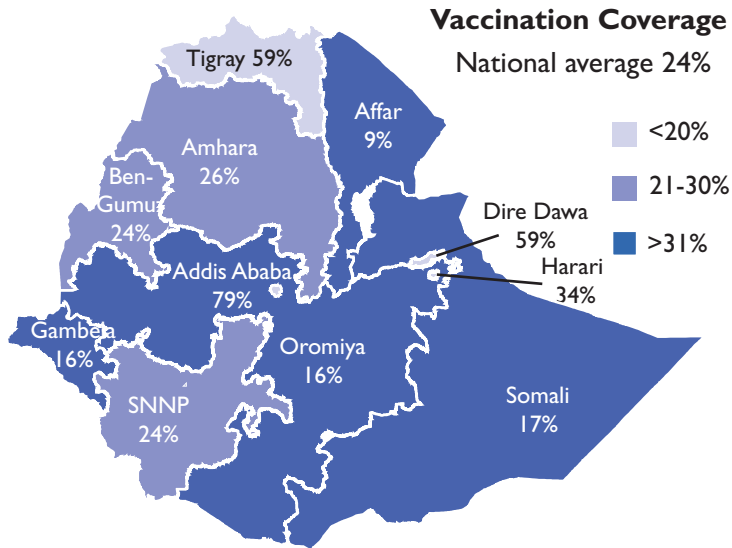
Percent of children age 12-23 months

■ 2000 ■ 2005 ■ 2011



# Vaccination Coverage, continued

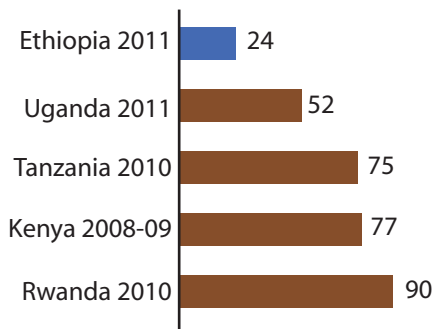
Full vaccination coverage is more than twice as high in urban areas as in rural areas (48% versus 20%). Coverage increases with mother's education; 57% of children whose mothers have secondary education were fully vaccinated compared with only 20% of children whose mothers have no education. There is also variation in vaccination coverage by region, ranging from only 9% of children fully vaccinated in the Affar region to 79% in Addis Ababa.



Ethiopia has one of the lowest vaccination rates in Africa. Vaccination coverage is twice as high in Uganda, and more than three times as high in Tanzania, Kenya, and Rwanda.

### Vaccination Coverage in East Africa

*Percent of children age 12-23 months who are fully immunised*



# Childhood Illnesses

## Diarrhoea

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among young children, although the condition can be easily treated. Treatment includes oral rehydration therapy, that is, oral rehydration salt (ORS) packets, recommended home fluids, or an increase in fluids.

During the two weeks before the survey, 13% of Ethiopian children under age five had diarrhoea. This rate was highest (25%) among children 6–11 months old.

Among those children with diarrhoea, 32% were taken to a health provider. Children in urban areas and those whose mothers have secondary education were the most likely to be taken to a health provider.

About two-thirds of mothers of children under age five know to treat diarrhoea using ORS packets. This knowledge is highest in the major cities and among women with secondary or higher education. Overall, 31% of children with diarrhoea were given oral rehydration therapy, either through ORS packets (26%) or recommended home fluids (8%). Children of mothers with secondary education are more than twice as likely to receive oral rehydration therapy than children of mothers with no education (58% versus 27%). Children in the wealthiest households are also twice as likely to receive ORT as children in the poorest households (52% versus 22%).

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**2 in 5 children with diarrhoea received no treatment at all.**

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Sixteen percent of children with diarrhoea received increased fluids. In all, 40% of children with diarrhoea received either ORT or increased fluids. However, 42% received no treatment at all.

# Childhood Illnesses, continued

## Acute Respiratory Infection

Symptoms of acute respiratory infection (ARI)—that is, cough accompanied by short rapid breathing, are considered to be a proxy for pneumonia, a major cause of death of young children throughout the world. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths due to pneumonia.

Seven percent of children under five had symptoms of ARI in the two weeks before the survey. These symptoms are most common among children 6-23 months (9%).

Of the children who had ARI symptoms, 27% were taken to a health facility or provider. This is a substantial increase from only 19% in 2005. However, in 2011, only 7% of children with ARI symptoms were given antibiotics, a very modest increase from 5% in 2005. Children living in urban areas and those from the wealthiest households are most likely to have been taken to a health facility or provider for treatment from ARI symptoms.

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**Only 7% of children with ARI symptoms received antibiotics.**

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## Fever and Malaria

Fever is a major manifestation of malaria and other infections in children and contributes to high levels of malnutrition and mortality. The prompt diagnosis and treatment of malaria among children under five is an important strategy in addressing childhood morbidity and mortality related to malaria.

Overall, 17% of children under five had a fever in the two weeks before the survey. Fever is most common among children age 6-11 months (25%).

Of the children who had a fever, 24% had treatment or advice sought for them from a health facility or provider. Treatment was sought more often for children in urban areas (38%) than rural areas (22%), and most commonly for children of mothers with secondary education (45%) and for children from the wealthiest households (40%).

Among children with fever, only 4% took antimalarial drugs; another 7% took antibiotics.



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# Children's Nutritional Status

Child malnutrition continues to be a major public health problem in developing countries. Nutritional status is primarily determined by a child's growth in height and weight and is directly influenced by food intake and the occurrence of infections. Stunting (chronic malnutrition), wasting (acute malnutrition), and underweight (a general measure of health and nutritional status) are assessed at the population level through the Demographic and Health Surveys.

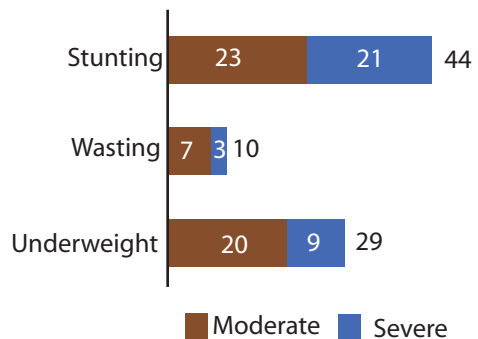
The EDHS measures children's nutritional status by comparing height and weight measurements against an international reference standard. According to the 2011 survey, 44% of children under five are stunted, or too short for their age. This indicates chronic malnutrition. One in five children are severely stunted. Stunting reflects a failure to receive adequate food intake over a long period of time, and is therefore, a measure of chronic malnutrition.

One in ten children under five years is wasted, that is, they are too thin for their height. Wasting reflects the failure to receive adequate nutrition in the period immediately preceding the survey. It is a measure of acute malnutrition.

Almost 30% of children under age five are underweight, or too thin for their age. Underweight is a composite indicator combining both chronic and acute malnutrition.

## Nutritional Status of Children

*Percent of children under age five*



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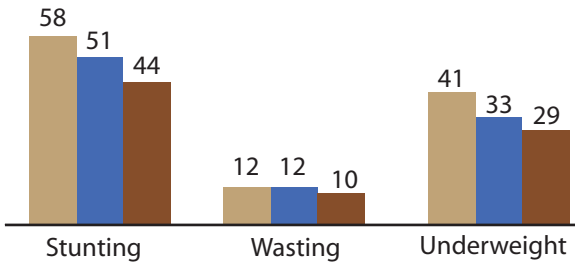
**44% of Ethiopian children are chronically malnourished.**

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## Trends in Childhood Malnutrition

Percent of children under age 5, based on the WHO Standard Reference Population

2000 2005 2011



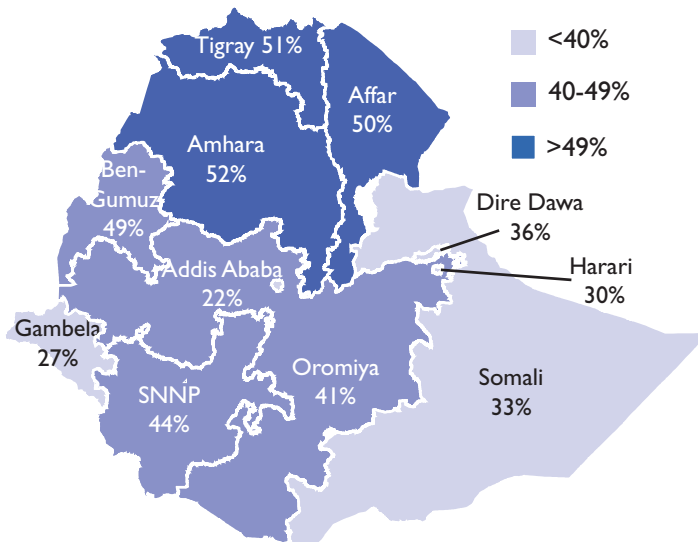
Though still high, malnutrition has decreased in Ethiopia in recent years. Stunting and underweight have decreased steadily since 2000, while wasting has remained more or less stable.

Chronic malnutrition affects children across Ethiopia. The highest rates of stunting are in Tigray, Amhara, and Affar, where at least 50% of children

are too short for their age. Stunting is more common in rural areas (46%) than urban areas (32%). In addition, children of mothers with no education are more than twice as likely to be stunted as children of mothers with more than secondary education (47% versus 19%).

## Stunting

National average 44%

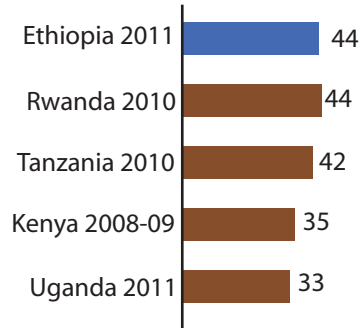


# Children's Nutritional Status, continued

Stunting is more common in Ethiopia than in the surrounding countries for which data are available. More than 2 in 5 children in Ethiopia and Rwanda are stunted compared to about 1 in 3 children in Uganda and Kenya. Although stunting has decreased in Ethiopia, levels of chronic malnutrition in the country remain one of the highest in the region.

## Stunting in East Africa

*Percent of children under age 5 who are stunted*



## Wasting in East Africa

*Percent of children under age 5 who are wasted*



Ethiopia also has the region's highest rate of wasting, or acute malnutrition. One-tenth of Ethiopian children are wasted, compared to 7% of children in Kenya, 5% of children in Tanzania and Uganda, and 3% of children in Rwanda.



# Infant and Young Child Feeding

Breastfeeding is very common in Ethiopia, with 98% of children ever breastfed. WHO recommends that children receive nothing but breast milk (exclusive breastfeeding) for the first six months of life. Only about half (52%) of children under six months in Ethiopia are being exclusively breastfed, and only 32% of infants 4-5 months old are exclusively breastfed. Infants should not be given water, juices, other milks, or complementary foods until six months of age, yet 19% of Ethiopian infants under six months consume plain water, 4% consume non-milk liquids, and 10% receive complementary foods. On average, children are breastfed until the age of 25 months and are exclusively breastfed for 2.3 months. Children over six months should receive complementary foods, but only half of children ages 6–9 months are eating complementary foods.

Only half of Ethiopian infants under 6 months are exclusively breastfed.

The Infant and Young Child Feeding (IYCF) practices recommend that breastfed children age 6–23 months be fed food from four or more other food groups daily; children 6-8 months should be fed solid or semi-solid food at least twice daily; and children 9-23 months should be fed at least three times daily. Non-breastfed children should be fed milk or milk products, in addition to food from four or more food groups, and should be fed these at least four times a day. However, only 4% of breastfed children in Ethiopia are receiving food from four or more food groups daily and the minimum number of feedings and just 5% of non-breastfed children are being fed in accordance with IYCF recommendations.



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# Micronutrient Intake

Micronutrient deficiency is a serious contributor to childhood morbidity and mortality. Vitamin A deficiency can cause eye damage and can increase severity of infections such as measles. Iron deficiency can impair cognitive development, stunt growth, and increase morbidity from infectious diseases. A lack of iodine in the diet can cause mental and neurological disorders in children. Children can receive micronutrients from foods, including fortified foods (such as iodised salt) and through direct supplementation.

Overall, 26% of Ethiopian children age 6-23 months ate vitamin A-rich foods such as meat, fish, eggs, carrots, pumpkins and dark green leafy vegetables in the 24 hours before the survey. Just over half (53%) of children age 6-59 months were given a vitamin A supplement in the six months before the survey. Children whose mothers have received more than secondary education are most likely to receive vitamin A supplements (72%). Vitamin A supplementation has increased from 46% in 2005.

In addition, 13% of children age 6-23 months ate iron-rich foods such as meat, fish, poultry, and eggs the day before the survey. Only 6% of children were given an iron supplement the week before the survey.

About 1 in 6 children (16%) are living in households with iodised salt. Children in urban areas are more likely to live in households with iodised salt than children in rural areas (24% versus 14%).



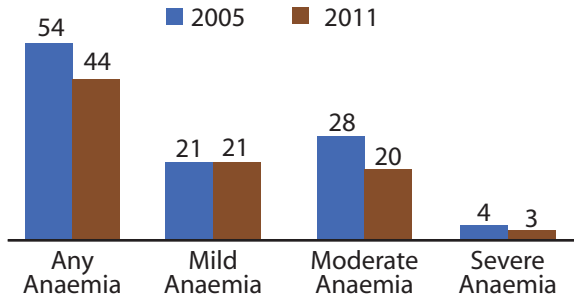
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# Anaemia

Anaemia is most often caused from an inadequate intake of iron, folate, or other nutrients. Anaemia in children is associated with impaired cognitive performance, motor development, coordination, and language development.

The 2011 EDHS tested over 9,000 children age 6 to 59 months for anaemia. More than 4 in 10 children are classified as having any anaemia, most of whom have mild or moderate anaemia. Anaemia has decreased from 54% of children in the 2005 EDHS to 44% of children in 2011. The decrease is most obvious for moderate anaemia.

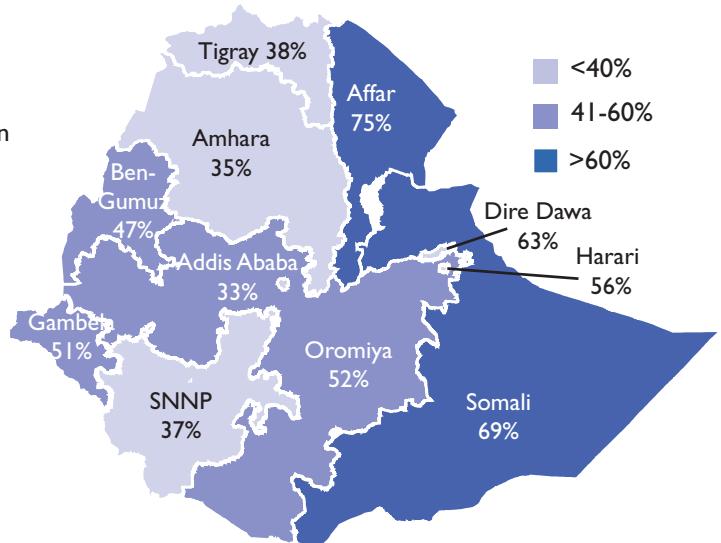
**Trends in Anaemia Status among Children**  
Percent of children age 6-59 months with anaemia



Anaemia is more common in rural areas (45%) than urban areas (35%), and ranges from a low of 33% of children in Addis Ababa to 75% of children in Affar.

Anaemia in children is less common in Ethiopia than in Tanzania (59%) or Uganda (50%), while children in Rwanda are least likely to be anaemic (38%).

**Anaemia**  
Percentage of children 6-59 months with any anaemia  
National average 44%



## Conclusions

While the 2011 Ethiopia DHS highlights major improvements in childhood mortality, other health indicators such as vaccination coverage and malnutrition continue to lag behind other countries in the region. Further work is needed to reach the most vulnerable children who do not yet have access to vaccines, appropriate treatment during illnesses, vitamin supplementation, and a regular and varied diet.

Ethiopia's national child health data point towards improvements, but regional, educational, and wealth disparities point to areas for further effort. Children in rural areas have higher mortality rates, are less likely to be vaccinated, and more likely to be malnourished than urban children. For example, more than half of children in the northern regions of Tigray, Affara, and Amhara are stunted, or chronically malnourished, compared to less than one-third of children in the three major cities. The largest gap is seen in vaccination rates—only 9% of children in Affar are fully vaccinated compared to 79% in Addis Ababa.

Similarly, children of educated mothers and children from the wealthiest households are thriving, while children from poorer, less educated families continue to lag way behind. Children with diarrhoea, for example, should be treated with oral rehydration therapy. Children with educated mothers and those from the wealthiest households are more than twice as likely to receive this recommended treatment as their peers from poorer, less educated households.

Many causes of childhood death are preventable through vaccines, good nutrition, and prompt, appropriate treatment of childhood illnesses. While Ethiopia has made major strides in reducing childhood mortality, additional efforts to improve vaccination coverage and nutrition, especially in the most needy populations, will contribute to the continued reduction of childhood deaths.



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