

Caring for Children



Nutritious food, cleanliness and sanitary conditions, and vaccinations against the common diseases of childhood are like “bodyguards” that protect children from infection and keep them healthy.

Parents and health workers can learn more about nutrition in *Good Food Makes Good Health*, cleanliness and sanitation in *Water and Sanitation: Keys to Staying Healthy*, and vaccinations in *Vaccines* (in development) to prevent most sickness in children.

Especially for children, an ounce of prevention is worth more than a pound of cure.

Nutritious food

Getting enough nutritious food is the key to a child’s growth and health. *Good Food Makes Good Health* is all about how you and your children can eat well, even when you have little money. It also explains the treatment for malnutrition in children and adults. You can give the best foods to babies and young children by following these guidelines.

For the first 6 months

Breast milk has everything the baby needs and should be given as often as the baby wants to nurse: every 3 or 4 hours during the day, a bit less often at night. Do not give water, juices, or porridge until the first teeth come in at about 6 months. These can cause diarrhea in young babies.

See pages 18 to 23 in *Newborn Babies and Breastfeeding* for help with breastfeeding.



Gentle care for a sick child

Just as with an adult, you need a child's cooperation to care for her well. Getting this cooperation requires patience and honesty. Be gentle and kind. Do not say an injection will not hurt, or a bitter medicine will taste good. If she trusts you, she will more easily accept your examinations, answer your questions, and participate in treatments.

Other ways to help a child feel safe:

- Before you touch a child, make time for a conversation with her. Use this time to note her general appearance. Does she look healthy? Is she breathing normally? Is her skin clear?
- If you are going to use a stethoscope or thermometer, show her how these simple tools work.
- Encourage the mother, grandmother, or whoever is caring for the child to hold and comfort her. Whenever possible, show the caregivers how to provide any needed treatments.
- If a child is in pain, give her some paracetamol (acetaminophen). This will not cure the cause of the problem. But often a child can eat, drink, and begin to heal if you reduce the pain. See page 39 for doses.
- Save painful treatments or unpleasant medications for the end of your visit.



From 6 months to 12 months (1 year)

This is the age at which many children start to suffer from poor nutrition. To keep the child healthy, continue to give breast milk and start giving food several times a day too. Start with one or two foods, like a simple porridge or your regular main food with a little oil or fat added.

Soon, add other healthy foods including:

- Protein foods once a day or more: soft cooked beans or ground bean meal, eggs, dairy, or mashed, cooked fish.
- Vegetables: well-cooked squash, peas, carrots, green leafy plants, tomatoes, or whatever orange or green foods are eaten where you live.
- Fruits: small pieces of fruit such as mango, papaya, berries, or banana.



After the first year



Continue to give breast milk for 2 years or more.

Also give the same variety of healthy foods an adult should eat: starch, protein, and vegetables and fruit. Children should eat 4 times a day or more. They need to eat even more often if they no longer breastfeed.

Girls need just as much food as boys. Girls and boys who get enough healthy food grow strong and healthy. Food helps the mind grow too – so the child can think, learn, and play.

Children should be like chickens: always pecking.

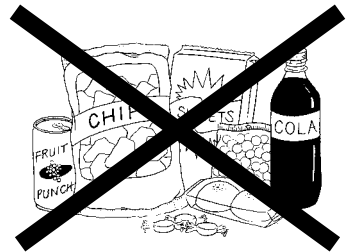


Bottles

Bottles and rubber nipples are not safe because they are difficult to keep clean. They often carry germs that cause diarrhea. If you need to feed the baby when the mother is away working, for example, give breast milk with a clean cup and spoon. Older babies and young children should never use bottles. Giving juice, porridge, or milk in bottles to older children bathes the teeth in sugar for long periods and is a common cause of tooth decay (cavities, caries). Children easily learn to drink from cups.

Junk food

Cakes, candies, chips, sodas, and processed foods made in factories are “junk foods.” They are filled with too much sugar, salt, fat, and chemicals, and not enough nutrition. Eating junk foods rots the teeth and leads to high blood pressure, diabetes, and other dangerous health problems later in life.



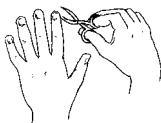
If junk foods are available, children will probably ask for them because they taste good. As parents and health workers, it is up to us to protect children from developing the habit of eating them. When a child asks for food, give him fresh fruit, nuts, yogurt, porridge, or something else nutritious and without added sugar. Teach children that nutritious foods are also tasty. Healthy eating habits will help children for their entire lives.

Children grow healthy and strong on real food - not junk food.

Cleanliness and sanitation

Wash children's hands before they eat and often throughout the day. Most diarrhea, colds, flu, and other sicknesses are passed by germs that spread from the child's hands to mouth (and children always have their hands in their mouths!). Washing hands keeps the germs that inevitably collect on the hands from getting into the mouth where they cause disease. Washing often keeps kids healthy.

Bathe children daily. Keep their nails short so dirt does not collect under them. Wash clothes and bedding regularly.



Children and adults need a safe, clean place to pass stool every day. Otherwise feces and the diarrhea-causing germs it contains will get everywhere. By building toilets for your family or with your neighbors or community, you will prevent diarrhea.

Water and Sanitation: Keys to Staying Healthy contains many detailed suggestions for improving sanitation and preventing diarrhea in children.

Vaccinations and medicines

Vaccinations protect children against many of the most dangerous diseases of childhood, like measles, tetanus, polio, and tuberculosis. It is easier, cheaper, and more effective to give a vaccine than to try to help a child who is sick or dying. Getting children vaccinated is one of the most important ways to keep them healthy.

See Vaccines (in development) for a list of recommended vaccinations and a schedule of when they should be given.

Be sure your children get all the vaccinations they need.

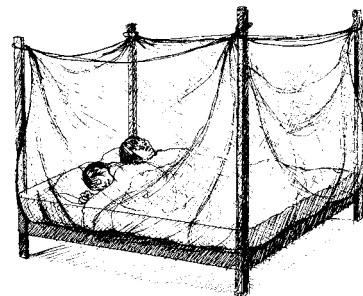
Other ways to protect the health of children

- Protect children's teeth by brushing. Do not give them a lot of candies, sweets, or sweetened drinks. See page 14 in Good Food Makes Good Health.



- Breastfeed. When you give other foods and drinks, use a clean cup or spoon, not bottles and nipples which are difficult to keep clean.

- Do not let children who are sick or have sores, scabies, lice, or ringworm share beds with other children or use the same clothing or towels. Treat children quickly for these infections that spread easily from child to child.



- Use bed nets to keep out mosquitoes. Clean up any puddles or water that does not move so mosquitoes cannot breed. Cover open doors and windows with screens.

- Keep pigs, dogs, and chickens – and the germs they carry – out of the house.

- If there are roundworms, give de-worming medicine every 6 months, starting at age 1. See page 50 for medicines and doses.

- If there is hookworm, children should wear shoes or sandals and not go barefoot.



Health Problems of Children

Sometimes despite our best efforts at prevention, children get sick. Sickness in children can become serious very quickly. It is important to notice early signs of sickness and attend to them right away.

Danger Signs

A child with one of these signs needs quick treatment and constant attention. With care, she should steadily get better. If she has more than one of these signs or if any of these signs get worse, the child is in danger:

- **Dehydration.** Lack of urine, dry mouth, or a sunken soft spot on a baby's head are signs of dehydration – a life-threatening problem. See below.
- **Seizure.** Sudden, brief periods of unconsciousness with jerking movements – often comes during a high fever. See page 12.
- **Listlessness.** A weak, tired state is not normal or healthy. Lack of interest in food and confused thinking are especially concerning. Any severe sickness can lead to this problem.
- **Difficulty breathing or fast breathing.** These are signs of pneumonia which can be deadly in small children. See page 14.

Dehydration

Dehydration is a lack of water in the body. Most children who die from diarrhea die from dehydration. The treatment is simply replacing lost fluid by drinking more. This is rehydration and is described on pages 22 to 24 in *Belly Pain, Diarrhea, and Worms*. Read those pages to learn how to treat dehydration from diarrhea, vomiting, or working too long in hot weather or in a hot building. Because dehydration from diarrhea is so dangerous to young children, always be on the lookout for:

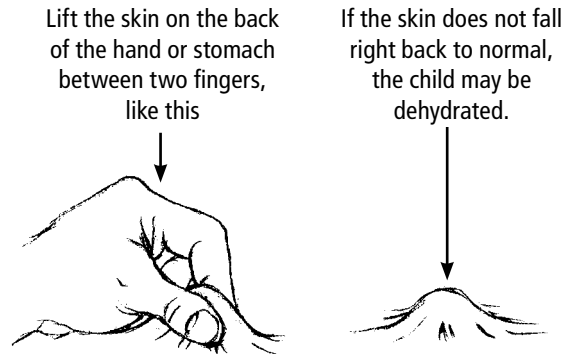
SIGNS

- Diarrhea **even if there are no other signs of dehydration**
- Thirst (but children do not always say they are thirsty)
- Dry mouth and tongue (when you touch the inside of the child's cheek, it feels dry)
- Urinating less often and the urine is dark-colored

Start treatment right away, before the signs get any worse.

SIGNS THAT DEHYDRATION IS GETTING WORSE

- Lethargy: tired, low-energy
- Fast heartbeat
- Breathing more deeply
- Sunken, tearless eyes
- Skin stays in a pinched shape when you pinch it



When dehydration becomes severe like this, the child is in serious danger. Quick treatment can save the child's life.

TREATMENT AND PREVENTION

The treatment for dehydration is simple: **give fluids to drink**. See the recipe for life-saving rehydration drink on page 22 of *Belly Pain, Diarrhea, and Worms*. If the child does not start to improve quickly, get help.

Breast milk

If you are breastfeeding a dehydrated child, continue to nurse and also give rehydration drink. Breastfeed the child more often – at least every 2 hours. Let the child breastfeed for as long as she wants.

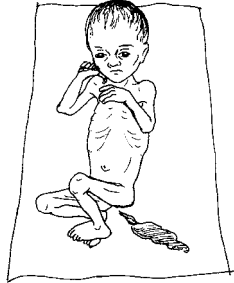
Diarrhea

Loose, watery stools are called diarrhea. Children get diarrhea for many reasons, most often from germs spread by bad sanitation and because of poor nutrition. Most of the time diarrhea will get better without medicines. But there is one treatment that is essential for everyone with diarrhea, and that is giving fluids to replace the liquid lost in the stool. Without drinking fluids, a child with diarrhea can lose so much fluid she can die.

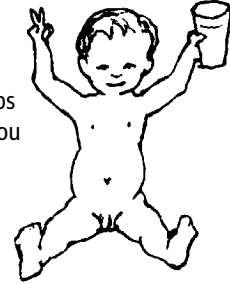
To save a child's life, give fluids to replace what she has lost.

Do you believe that giving a child something to drink will make diarrhea worse? It is easy to think this as you watch liquid diarrhea come from a child. **But fluids do not cause diarrhea.**

Holding back fluids does not make the diarrhea better. It puts the child in danger.



Drinking fluids keeps you healthy when you have diarrhea.



More information on diarrhea can be found on page 25 of *Belly Pain, Diarrhea, and Worms*. The treatment information here is especially for children.

TREATMENT

1. Give rehydration drink. For a child under 2, give at least $\frac{1}{4}$ cup after each watery stool. For a child of 2 or older, give $\frac{1}{2}$ to 1 cup after each watery stool. Rehydration drink is water mixed with a little salt and some sugar or cooked grain. Some people add a little lemon juice for flavor. For a recipe, see page 22 of *Belly Pain, Diarrhea, and Worms*.



2. Give food. Often the child will not say he is hungry, but if he does not eat he will get weaker and sicker. Be patient. Give just a few spoonfuls, 6 times a day or more. Give bigger portions as the child improves. Enrich the child's porridge with high-energy foods like groundnuts (crushed), eggs, dried fish, yogurt, avocados, or bananas. At times when you have no protein or vegetables, add a spoon of oil to the porridge.



3. Avoid anti-diarrhea medicines.

They just act like plugs and keep the diarrhea and infection inside the child. Antibiotics are only useful for certain cases of cholera and bloody diarrhea. See page 40.

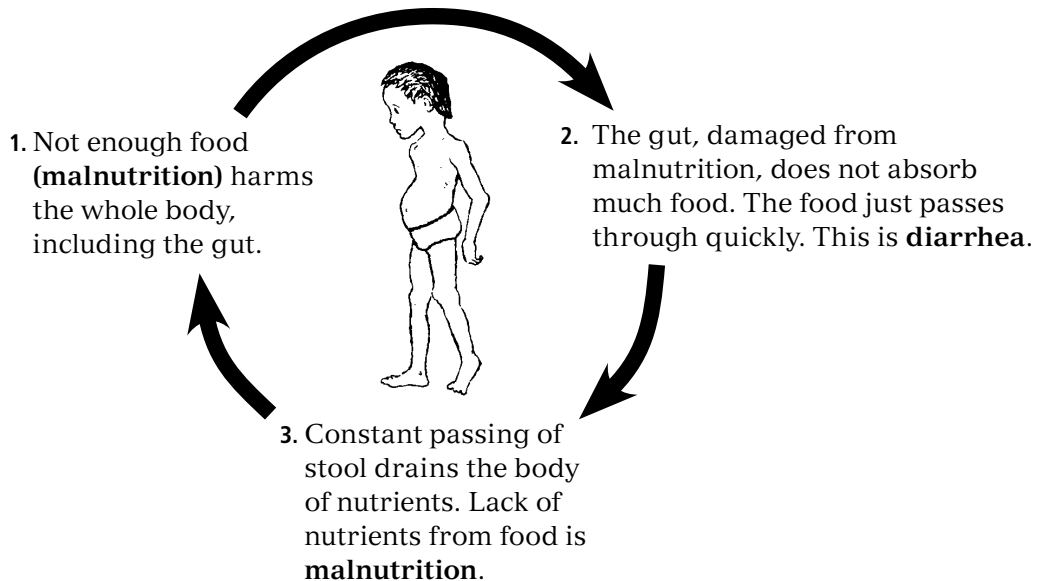
4. Prevent diarrhea from happening again by improving sanitation and nutrition.



Breast milk replaces the fluids and nutrients lost with diarrhea.

Malnutrition and diarrhea

Poorly nourished children get diarrhea more often. And they have more difficulty recovering from it. That is because these 2 diseases work together in a harmful cycle.



Malnutrition causes diarrhea – diarrhea causes malnutrition.

Stopping this terrible cycle will prevent a child from dying from a combination of diarrhea and malnutrition, or from one of the many infections that attack children who are weakened from constant diarrhea and hunger.

If you have only a little money, spend it on food for your child. Food will strengthen the child so he will recover faster and will be less likely to get diarrhea again.

To treat severe malnutrition, see page 23 in Good Food Makes Good Health.

Zinc helps stop diarrhea

Zinc (a mineral, see page 52) helps lessen diarrhea in children. For this reason it should be given to children with diarrhea if you can get it.

For a baby 2 months to 6 months old: Give 10 mg zinc each day for 10 days. Grind up the tablet and mix with a little breast milk.

From 6 months to 5 years old: Give 20 mg a day for 10 days.

Vomiting

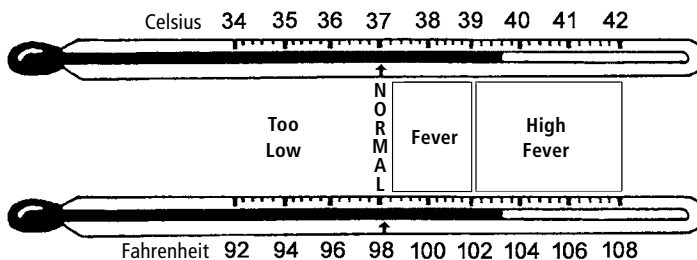
Some children vomit more often than others. But when a child vomits a lot or shows signs of dehydration, give rehydration drink (see page 22 in *Belly Pain, Diarrhea, and Worms*). At first, give just a spoonful every 15 minutes, even if he continues to vomit. If the drink stays down, give a spoonful every 5 minutes. Then give larger sips. By giving more fluids and food as soon as possible, you can help the child regain his strength.

Fever

Children often get fevers as their bodies fight an illness, and their fevers can get quite high. Help the child feel better with paracetamol (acetaminophen) or ibuprofen. Cool wet cloths or a cool (but not cold) bath can also help. Give plenty of fluids to prevent dehydration. A severe fever in a young child can lead to a seizure, see page 12. But a fever – especially a high fever – can be a sign of a severe infection. The most important care for the child with fever is to try to find and treat the cause.

DANGER SIGNS AND CAUSES OF FEVER

Fever with the problem below	Could be...	See page
Stiff neck or severe headache	Meningitis	13
Rash	Measles	22
Long-lasting cough	Tuberculosis	17
Stomach ache and diarrhea or constipation, sometimes with pink spots on the belly or sides. (In typhoid, the fever usually increases gradually over about a week, then the stomach ache starts.)	Typhoid	Some Serious Infectious Illnesses (in development)
Chills or any fever if you live where malaria is common	Malaria	11



Malaria

Malaria is explained in detail in *Some Serious Infectious Illnesses* (in development). It is one of the main causes of death for children in places where it is common.

SIGNS

- Fever
- Chills or sweats
- Headache, sore muscles, belly ache
- Vomiting or diarrhea

TREATMENT

Whenever possible, test before you treat malaria. But if you cannot give a test, and malaria is common where you live, and you cannot find another cause of the fever, start malaria medicines right away.

Anemia is common in children with malaria, so they should also take iron supplements (see page 53).

DANGER SIGNS

- Trouble breathing
- Seizures, unclear thinking, loss of consciousness, or any other signs of brain infection (see meningitis, page 13).

These are life-threatening signs that the child needs urgent medical help. Inject artesunate on the way. If you do not have artesunate, inject quinine. See *Some Serious Infectious Illnesses: Medicines* (in development).

PREVENTION

See *Some Serious Infectious Illnesses* (in development) for many ways to reduce malaria for your family and community.



Keep out malaria with bed nets and window screens.

Seizures, convulsions

Seizures are sudden, usually brief, periods of unconsciousness or changes in mental state, often with jerking movements. Sometimes the child is very still instead.



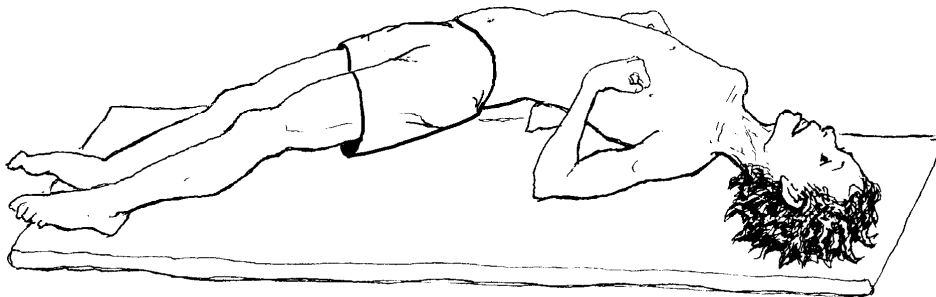
A young child can have seizures because of high fever, dehydration, an injury, malaria, or for other reasons. Seizures that recur are called epilepsy. Recurring seizures are explained in Head and Brain Problems (in development).

During a seizure, clear the space around the child so he does not hurt himself. Turn him on his side so he does not choke if he vomits. **Do not hold a seizing child down or try to hold his tongue.**

- For seizure from **malaria**, get medical help. On the way, give diazepam (see page 46). Treat with malaria medicines (see Some Serious Infectious Illnesses: Medicines - in development).
- For seizure from **dehydration**, get medical help. After the seizure is over, give rehydration fluids (see page 22 in Belly Pain, Diarrhea, and Worms).
- For a seizure from **meningitis** (see page 13), get medical help.

If none of these dangerous causes of seizure seem likely, a single seizure may not be a problem (although they are very frightening to watch). If seizures recur, see a health worker.

The spasms of **tetanus** can be mistaken for seizures. The jaw shuts tightly (lockjaw) and the body suddenly bends back. Learn to spot early signs of tetanus, see First Aid (in development).



Meningitis

Meningitis is a rare but very serious infection around the brain and spinal cord. Most often, it starts with no clear cause and fever is the first sign. Sometime it comes as a result of another illness such as malaria, tuberculosis, measles, or mumps.

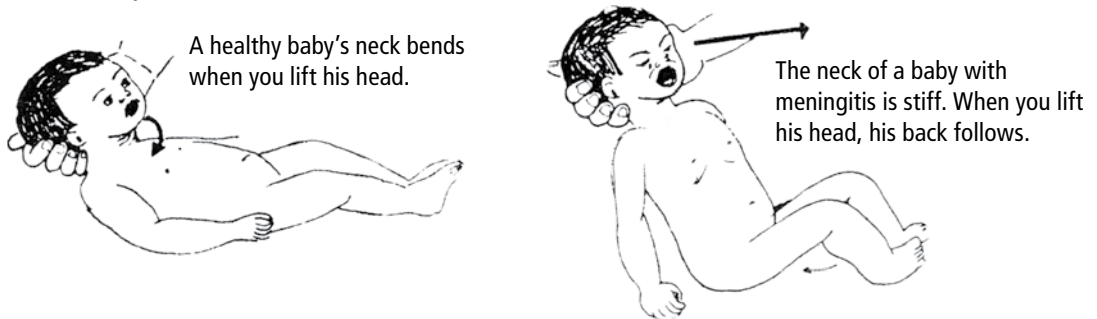
Meningitis from tuberculosis may take weeks to develop. Meningitis from malaria can start in just a few hours.

SIGNS

- Fever
- Very bad headache
- Vomiting
- Seizures
- Stiff neck – the person cannot put his head between his knees
- The person does not want to be touched – trying to hold a child makes him cry
- Sensitive to light
- Irritable, sensitive, and upset
- Lethargy: weakness, sleepiness, or losing consciousness

SIGNS IN A NEWBORN

The soft spot (fontanelle) on top of the head may bulge out. The child may have vomiting or diarrhea. There may be a fever or the temperature may be unusually low.



TREATMENT

Get medical help right away. On the way, give an injection of ampicillin and an injection of gentamicin. See page 43.

If the meningitis came after malaria or tuberculosis, treat those diseases as well. For cerebral malaria or cerebral tuberculosis, see Some Serious Infectious Illnesses (in development).

Pneumonia (lung infection)

Coughs, colds, and breathing problems can be mild or severe. One of the most serious is pneumonia, a lung infection. Pneumonia is described in more detail in Problems with Breathing and Coughing (in development). It is one of the most common causes of death in young children.

SIGNS

- **Breathing fast** is the most important sign of pneumonia. Fast breathing means:

In a newborn baby until 2 months: more than 60 breaths a minute.

From 2 months to 12 months: more than 50 breaths a minute.

From 12 months through 5 years: more than 40 breaths a minute.

All children breathe fast when they are crying. Try to calm the child. When she is no longer crying, rest a hand on her belly to feel it rise and fall. Watch and feel how many breaths she takes each minute.

- Fever
- Cough
- Skin on chest visibly sucks in with each breath
- Loss of appetite (not wanting to eat)



TREATMENT

If you believe a young child may have pneumonia, treat with antibiotics right away.

Give 325 mg amoxicillin, 2 times a day for 5 days. For a baby under 1 year, give 187.5 mg ($\frac{3}{4}$ of a 250 mg tablet, ground up) in a little breast milk. See page 43 for more on amoxicillin. Cotrimoxazole also works against pneumonia. See page 46.

Give plenty of fluids to drink and food to eat.

The child should start to get better within 2 days. If she does not, there may be another cause, like tuberculosis, asthma, or a worm infection that has spread to her lungs. If the child's health worsens, if she has serious trouble breathing, loses consciousness, or has a seizure, she needs ampicillin and gentamicin injections and, if possible, medical help. See page 43.

PREVENTION

Anything that irritates the lungs makes it easier for them to get an infection. Smoke weakens the lungs and makes pneumonia more common. If there are smokers in the house, they should always smoke outside and away from children.

A stove with a chimney will pull smoke out of the house and protect the lungs of the girls and women who do the cooking, and other children who are near.

Pneumonia and malnutrition

Most children who die from pneumonia are malnourished. Malnutrition makes them too weak to fight off the infection.



*Everyone breathes easier when children
get enough healthy food every day.*

Cough

A cough is usually caused by a simple cold, and medicines will not be of use. Soothe the child with warm, sweet teas, steam, or just by holding and comforting her. She should get better in a week or so.

SIGNS OF DANGEROUS COUGHS

Signs	Could be...	See Page
Cough for 2 weeks or more, losing weight, and fever	Tuberculosis	Problems with Breathing and Coughing (in development)
Cough with fast breathing	Pneumonia	14
A dry cough at night when the child does not otherwise seem sick (especially if there is also wheezing).	Asthma	Problems with Breathing and Coughing (in development)

Croup (barking cough)

A barking cough or a lasting cough with a hoarse voice might be croup. You may also hear a high-pitched sound as the child breathes in.

Croup is caused by an infection in the breathing tube in the throat. Antibiotics usually do not help. Breathing steam or taking the child outside at night to breathe cool air may help a little.

Sometimes the inside of the throat becomes so swollen the child has trouble breathing. Listen to her breaths and take her to a health center if you think she may not be getting enough air. There are medicines that can reduce the swelling.

Whooping cough (pertussis)

Whooping cough starts like a cold – with fever, runny nose, and a cough. A week or two later, the cough gets worse. It comes in uncontrollable bursts, with lots of quick coughs in a row. The coughing can be strong enough to make the person vomit.



After a burst of strong coughing, the person gasps to get air. When she breathes in, there may be a high-pitched “whoop” sound. Whooping cough can last for months.

Whooping cough is miserable for anyone but is hardest on children. A baby under 1 year old can die from the constant coughing. Babies do not always have the typical “whoop,” so it can be hard to know if they have this infection.

TREATMENT

- Rest to avoid triggering the cough.
- Breastfeed more or give extra fluids and food.
- If a child loses weight or seems to have trouble breathing, get medical help.

The best way to protect against whooping cough is to make sure children get the pertussis vaccine (DPT). See Vaccines (in development).

Tuberculosis

Tuberculosis affects children more quickly than adults. For a child with a cough lasting 3 weeks or more, especially if there is fever or if someone in the house might have tuberculosis, see Problems with Breathing and Coughing (in development).

Wheezing

Wheezing is a high-pitched whistling sound when breathing. It is caused by tightness inside the lungs or throat and can come with a cold or a more serious problem. If wheezing keeps coming back again and again, it is probably asthma. It could also be a sign of tuberculosis, especially if the wheezing is heard more on one side of the chest. See Problems with Breathing and Coughing (in development).

Colds

A runny nose, sore throat, or cough in a child will go away with rest, plenty of fluids, and enough food. The child will get better on her own without medicines. Antibiotics are useless for a cold. Colds sometimes lead to ear infections (page 18) or sore throats (page 20).



Ear infections

If the baby or child is rubbing her ear and crying, an ear infection may be the cause. Ear infections are very common in children, especially after a cold or runny nose. The inside of the nose is connected to the inner part of the ear and germs easily pass the short distance between the two parts.

SIGNS

- An older child can tell you that his ear hurts.
- Babies cry, or rub their ears or the sides of their heads.
- There may be fever, lack of appetite, difficulty sleeping, or just general fussiness.

TREATMENT

An ear infection may be very painful and cause children a lot of tears. But if the child is generally healthy and well-nourished, it will most often go away on its own. Acetaminophen can help with the pain.

You can also try garlic oil, a home remedy that may help. Soak a garlic clove in vegetable oil overnight. Then drip a little of the oil into the ear a few times a day.

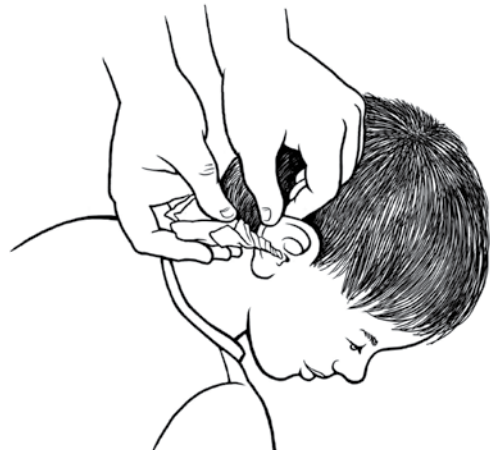


WHEN TO GIVE ANTIBIOTICS

Treating with amoxicillin or cotrimoxazole may be a good idea for a child who is already in poor health. These children have a hard time fighting off infection, so ear infections tend to last a long time. A long-lasting ear infection or getting ear infections often can lead to deafness. Always give antibiotics when:

- pus or blood drains from the ear.
- the ear infection does not start to improve after a few days.
- a baby 6 months or younger has an ear infection.

See pages 43 and 46 for antibiotic doses.



Wick away pus with a twist of soft paper or fabric.

DANGER SIGNS

Get help for any of these signs:

- Pain in the bone behind the ear
- Headaches, dizziness, or a seizure
- Lethargy (very tired or weak)
- Hearing loss, deafness



Tenderness and swelling behind the ear may be a dangerous bone infection called mastoiditis.

PREVENTION

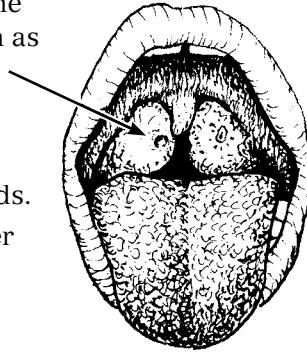
Sometimes a child gets something inside her ear. Try flushing the ear using a syringe with no needle, and filled with a mixture of half water and half hydrogen peroxide or vinegar. Or, if you are very careful not to poke the inside of the ear, you can take it out with a small pair of tweezers. Otherwise, avoid putting objects in anyone's ear. You can spread germs into the ear or accidentally puncture the eardrum. Even a tiny scratch can become infected.



Breastfed babies get fewer ear infections.

Sore throat

Sore throats usually come from the common cold. The throat may look red inside and hurt when the child swallows. The tonsils (2 lymph nodes seen as lumps on each side of the back of the throat) may become large and painful or drain pus.



TREATMENT

- Give plenty of fruit juices, teas, and other fluids.
- Teach the child to gargle with warm salt water (½ teaspoon of salt in a glass of water).
- Give paracetamol for pain – see page 39 for doses.

For most sore throats, antibiotics will do no good and should not be used. But one kind of sore throat in children – called **strep throat** – is dangerous and should be treated with penicillin.

SIGNS OF STREP THROAT

- Swelling and pus (little white patches) on the back of the throat
- Swollen or tender lymph nodes in the neck, below the ears
- Fever
- **No** cough or runny nose

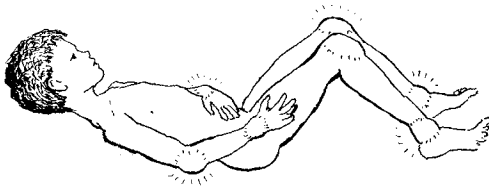
If a child has 3 or 4 of these signs, the infection is likely to be strep throat and should be treated (with penicillin or amoxicillin for 10 days by mouth, or one injection of benzathine penicillin, see page 45). A throat culture is the only sure way to know what causes a sore throat, and should be used where it is available.

Left untreated, strep throat can turn into a painful and dangerous disease called rheumatic fever.

Rheumatic fever

Rheumatic fever comes after a strep throat infection and strikes children usually between 5 and 15 years old. If a child has some of these signs 2 to 4 weeks after having a sore throat, rheumatic fever may be the cause:

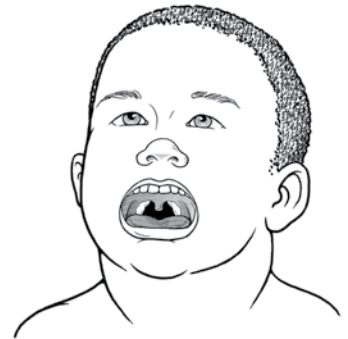
- Pain in the joints, especially the wrists and ankles
- Swollen, hot, and red joints
- Fever
- Curved or ring-shaped rashes or bumps under the skin on the body, arms, or legs, but not on the face
- Uncontrolled movements of the face, feet, or hands (this is called chorea, or Saint Vitus' Dance)
- Weakness, shortness of breath, chest pain



If you think the child may have rheumatic fever, give penicillin (see page 44) to treat the infection. Get medical help. Rheumatic fever damages and weakens the heart. This is called rheumatic heart disease and can disable a person or cause early death.

Diphtheria

Diphtheria is a dangerous disease that starts with a sore throat and mild fever. After a few days, a grey or white coating may appear in the back of the throat. Often the child's voice becomes hoarse, his neck swells, and his breath smells bad. The swelling and the grey or white coating can make it difficult or impossible to breathe.



TREATMENT

- Get medical help. There is an antitoxin that may be available.
- Give erythromycin (page 46) or penicillin (page 45).
- Gargle with warm water and a little salt.
- Breathe steam to make breathing easier.

If the coating on the back of the throat becomes so thick that the child has trouble breathing, wipe it away with a clean cloth.

Diphtheria is easily prevented with the DPT vaccine. Make sure there is a vaccination program in your community and vaccinate your children.

Measles (rubeola)

The first signs of measles are a fever, runny nose, red and sore eyes, and a cough. These signs start about 10 days after being near a person with measles. Next come a sore mouth and diarrhea.

Finally a rash appears behind the ears and on the neck, spreads to the face and body, and then to the arms and legs.



TREATMENT

A child with measles can get well in 5 to 10 days if you help her drink, eat, and rest:

- Give plenty of liquids to drink. If the child has diarrhea or any sign of dehydration, give rehydration drink frequently.
- Continue to breastfeed a child who is still nursing. Let her drink as often as she wants and for as long as she wants. If she has trouble taking the breast, give breast milk with a spoon.
- Offer bites of food many times each day. If she has trouble swallowing solid food, try soups, porridges, and juices.
- Give paracetamol or ibuprofen to relieve the pain and fever. See page 39.
- Give vitamin A. See page 52.

The main danger of measles is that it can lead to other, more serious illnesses. This is most common for children who are malnourished or sick with HIV or another illness. Watch for these problems and treat quickly:

- **Diarrhea:** Treat with rehydration drink. Get help if the child does not improve within a day or two.
- **Ear infection:** Ear infections from measles can cause deafness. Treat any ear pain right away with the antibiotics on page 18.
- **Worsening vision:** Measles can lead to blindness. Prevent this by giving all children with measles vitamin A (see page 52).
- **Pneumonia:** If a child with measles breathes faster than normal, or if breathing is difficult, treat for pneumonia. See page 14.
- **Meningitis:** Get medical help if the child acts confused, has a bad headache, has a seizure, or loses consciousness. See page 13.

PREVENTION

All children should be vaccinated against measles (see Vaccines - in development). If one child gets measles, you may be able to protect the other children in the family and school if you can get them vaccinated quickly. Keep a child with measles at home and, if possible, away from her brothers and sisters if they are not sick. However, her siblings may also be infected even if they have no signs of measles yet. So it is best to keep them at home as well until you know they are all healthy. This will prevent infecting others in the community. You can only get measles once, after that you are immune.

Rubella (German measles)

SIGNS

- Mild fever, under 38.3° C (100° F)
- A mild rash that starts on the face and spreads down the body
- Swollen lymph nodes behind the ears and in the back of the neck and head

In children and young adults, rubella is mild compared to measles. It gets better on its own after 3 or 4 days.

In adult women, rubella can cause sore knees, wrists, and fingers.



Rubella causes serious harm to a pregnant woman's growing baby. Pregnant women should stay far away from children with rubella.

The only reliable way to protect pregnant women from rubella is to vaccinate all children in the community.

Chickenpox (varicella)

Chickenpox causes a low fever and small, red, itchy spots. The spots usually start on the body and spread to the face, arms, and legs. Later they turn into pimples or blisters that pop and scab.

Chickenpox usually goes away in about a week. But scratching the itchy spots lets germs and dirt get under the skin and can lead to skin infections.

Distract the child and help her to not scratch too much. Keep her fingernails short and her hands clean. Or put mittens or socks over her hands. Relieve the itching with cloths soaked in cooled, cooked oatmeal and water. An antihistamine like chlorpheniramine can also help lessen the itching. See page 49.

Chickenpox can be prevented with a vaccine (see Vaccines - in development). If you have had the vaccine or have already had chickenpox, you are immune.

Scabies

Scabies causes an itchy rash on the sides, hands, arms, legs, or penis. It is common in children. For more on scabies and other skin problems, see Skin, Nail, and Hair Problems (in development).



Mumps

Mumps starts with fever, tiredness, headache, or loss of appetite. It may hurt to open your mouth or eat. In 2 days, a soft painful swelling appears under the ears at the angle of the jaw, like this. It may start on one side and then spread to the other.

Mumps goes away on its own after about 10 days. If the swelling does not go away, it may be something else. Both malnutrition (page 20 of Good Food Makes Good Health) and HIV (see HIV and AIDS - in development) can cause long-lasting swelling of the lymph nodes under the ears which looks a lot like mumps.

Rarely, mumps infection spreads to the ears or the brain. Get medical help right away if someone with mumps has any signs of meningitis (page 13) or hearing problems.

Mumps can be prevented with a vaccine (see Vaccines - in development).

Polio

Polio is a serious illness. It starts like a cold, with fever, diarrhea, vomiting, and sore muscles. Usually the child gets well quickly. But for a few children, polio harms the muscles.

These children get weak, usually in one leg. Sometimes the leg becomes paralyzed. If it stays paralyzed, it will remain thin and small while the other leg grows. If you see a child has trouble moving all or part of her body (paralysis), get medical help right away.

Polio can be painful. Acetaminophen or ibuprofen can help. So does soaking the limb in warm water. Regular exercise of the affected limbs is important and limits the disabling effects of the disease. See Chapter 7 of *Disabled Village Children*.



PREVENTION

Vaccinate all children against polio. Vaccination campaigns are so successful that polio has disappeared from many parts of the world. If all children are vaccinated, the disease will eventually disappear.

HIV and AIDS

HIV weakens the body's defenses against illness, making it easier to get sick with pneumonia, tuberculosis, diarrhea, and other diseases. It is important to find out as soon as possible if a child has HIV.

If you answer "yes" to any of these questions, please read HIV and AIDS (in development).

- Is HIV common where you live?
- Are you a mother or father who might have HIV?
- Do you care for a pregnant woman who might have HIV?
- Do you care for a child who might have HIV?
- Do you care for a small child who is not growing well, and gets sick more than other small children?

HIV medicines can help a child with HIV live a long, healthy life.

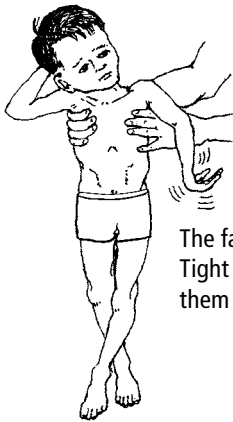
Physical Problems

Cerebral palsy (spastic child)

Cerebral palsy is a disability in the brain that affects the way a child moves and holds his body.

- At birth, the baby may be limp and floppy (but sometimes he seems normal at first).
- As the baby grows, he develops more slowly than other babies. He may be slow to hold up his head, sit, or crawl.
- The baby may have trouble feeding. He may fuss and cry a lot. Or he may be unusually quiet.
- As he grows, his movements are stiff and jerky.

About half of children with cerebral palsy are slower at thinking and learning, but do not assume this will be true. Children with cerebral palsy can play, learn, and go to school.

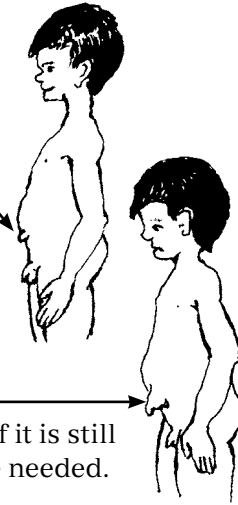


The face, neck or body twist and jerk.
Tight muscles inside the legs cause them to cross, like scissors.

Cerebral palsy cannot be cured. But you can help a child with this disability move more on his own, communicate, and care for himself and others. Seek help from a clinic that provides rehabilitation or physical therapy, and see *Disabled Village Children* for more information about caring for a child with cerebral palsy.

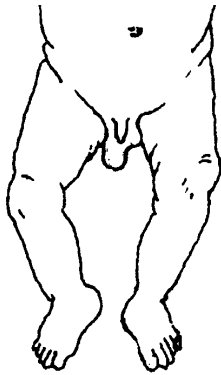
Belly button sticking out (umbilical hernia)

A belly button that sticks out like this is caused by a small separation of the belly muscles. They usually close on their own, and no medicine is needed. Tying a cloth or belly band around it will not help. (But after the cord falls off, it will not hurt either.)



Even a big umbilical hernia like this is not dangerous and will often go away on its own. If it is still there after age 5, get medical advice. Surgery may be needed.

Swollen testicle, hydrocele, and hernia

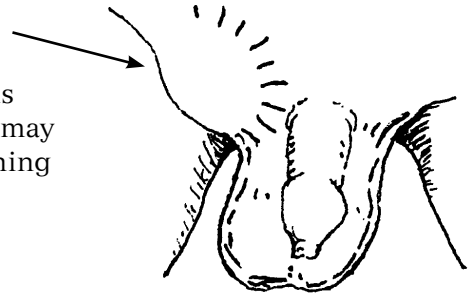


The bag that holds the testicles, called the scrotum, can fill with fluid or a loop of intestine. This causes swelling on the affected side.

You can find the cause of the problem. Shine a light from the back of the scrotum.

- If it shines through, the scrotum is filled with liquid. This is called **hydrocele** and will usually go away on its own. If it lasts more than a year, get medical advice.
- If the light does not shine through and the swelling gets bigger when the child coughs or cries, a loop of intestine (gut) has slipped in. This is called a **hernia**.

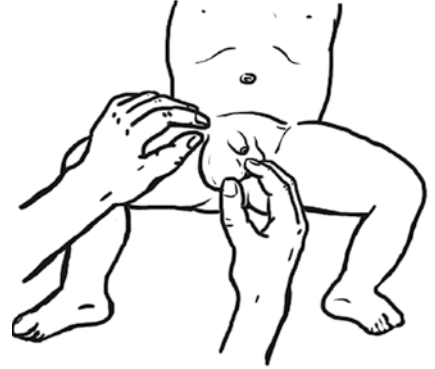
A hernia can also cause swelling here for either a boy or a girl. If the swelling grows when the child cries or coughs, it is probably a hernia. (If it stays the same, it may just be a swollen lymph node, see Examining a Sick Person - in development.)



A hernia needs to be repaired with surgery. You may be able to push it back first:

1. If possible, give diazepam to calm the child (see page 48).
2. Use pillows, or prop up the bottom of a bed or mat to get the child's hips higher than his head.
3. Have him bend his knee and open his leg on the side where the hernia is – like a frog.
4. Put a cold compress or ice wrapped in cloth on the hernia to reduce swelling. Wait 10 minutes or more.
5. If this doesn't work, you can try gently and very slowly pressing the hernia back into place.

The child will still need surgery, even if you have pushed the hernia back into place.



Severe pain in the scrotum, especially if it starts suddenly, is usually a twist of tissue inside the body. This is called testicular torsion and the boy will need surgery right away to save the testicle.

Injuries and Accidents

Children have more injuries and accidents than adults, but for the most part, treatment for accidents and injuries is the same for children as for adults. Look for specific injuries in First Aid (in development).

The most common injuries for children can often be prevented.

Choking

Choking is a serious problem for children under 2 years old. If the child is coughing or can make sounds, watch closely until she coughs the object out. If the child cannot cough or make noise, immediately give back blows and chest thrusts, or for a child over 1 year, give stomach thrusts to force the object out. See First Aid (in development).

Round, firm pieces of food are the most common causes of choking in small children. Avoid giving children hard candy, nuts, large seeds, chunks of meat or cheese, or chunks of raw vegetables. Food for small children is safest when it is cooked well and ground or cut up into small pieces.



Small toys, balls, coins, and balloons are common causes of choking and should be kept away from little children.

Poisoning

Poisons, including pesticides and home cleaners, should be kept on high shelves or in locked cabinets where children cannot get them. For more information on how to treat different types of poisonings, see First Aid (in development).

Drowning

A child can drown in a pond, drainage ditch, or even a bucket of water. Small children should always be watched when close to water. Older children, especially boys, often drown because of lack of caution when swimming in rough or deep waters. Making sure paths near and bridges over waterways are safe, and teaching all children to swim are important ways to keep your community safe.



A 1 year old can get stuck in a bucket and drown.

Burns

Burns can be prevented by keeping children away from stoves, hot pots and pans, fires, and lamps. But when burns do happen, it is important to treat them quickly, both for pain relief and to prevent infection, which can be severe after a burn. Some serious burns do not hurt a lot because of the nerve damage they cause in the skin. Even with no pain, they should still be treated. For how, see First Aid (in development).

Vehicle accidents

Helmets and seatbelts can prevent many injuries and deaths from motorcycle, bicycle, and car accidents. By making roads safe for people walking and riding bicycles, many more injuries and deaths can be prevented.



Protect your child's head with a helmet. And be there to protect your child by wearing one yourself.

Violence

Violence and abuse of children is a common and serious problem and can cause lasting harm to the child – not just in the body, but also in the mind and heart. Keeping children safe from abuse is every adult's responsibility. To learn to identify signs of abuse and for more on this complicated subject, see Violence (in development).

For Health Workers

If you are a health worker, visit with children regularly. The easiest time for these health visits is whenever the child is due for regular vaccinations (see Vaccines - in development), or every couple of months for the first year, then 1 time each year after that.

Visit more often if the child shows signs of trouble, like slow growth. You should also return (or ask the mother to return to you) after treating a child for sickness to see if the child has improved or still needs more care.

While it may be easier to ask mothers to bring their children into a clinic for checkups, it is often better for the health worker to go to the family's home. It is best to keep new babies and young children away from any sick people who may be at the clinic. Also, some mothers cannot leave their other children or their work, so they do not go to the clinic. These mothers especially need the help of a health worker to check their babies and young children.



*The children who need your attention the most
are the ones who do not come to you.*

As the child grows, keep checking up on her. At these visits:

- Ask about how the child has been – if she has generally been healthy and is growing well.
- Look at the child from head to toe. A healthy child is alert and interested. Her skin is clear and her body is growing and strong.
- Ask how the child eats. Encourage breastfeeding and nutritious food.
- Weigh the child. Or if the mother has been participating in a growth monitoring program, look at the record of how the child has been growing (on a Road to Health chart or wherever the weights are written down).
- Look at whether the child is clean and generally has a healthy home. These visits can be a time to teach the family about safety and preventing disease, or to find out what help they need to make the home safer and the child healthier.
- Be sure to share what you learn with the mother and family.

Caring for children is a way for health workers to earn the trust and respect of their community. As parents see you care for their children, they will feel more comfortable asking questions about their own health. Regularly checking on the health and growth of a child is a good way to make sure the mother and other family members are also well and getting the attention they need.

Take advantage of opportunities to teach children about health. Children talk about everything they learn with their families and other children. They can help create an epidemic of healthy habits in their community.

A growing child is a healthy child

Keep track of a child's growth on a chart, like the one on the next page. The mother or caregiver should keep the chart. Explain to her how it works, so she understands if her child is falling behind.

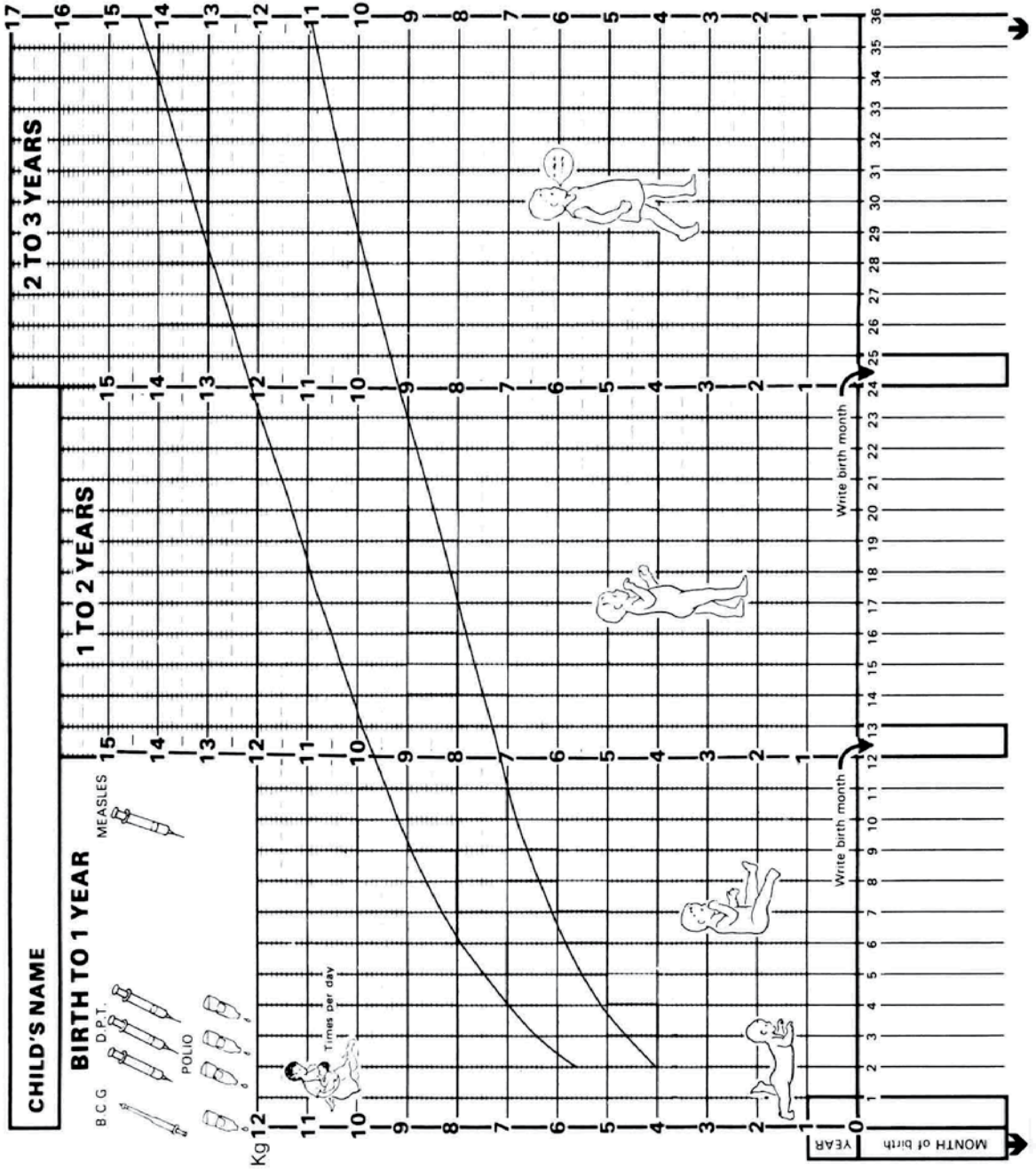
WATCH THE DIRECTION OF THE LINE SHOWING THE CHILD'S GROWTH

- GOOD**
Child growing well
- DANGER**
Not gaining weight, find out why
- VERY DANGEROUS**
Losing weight, May be ill, needs extra care

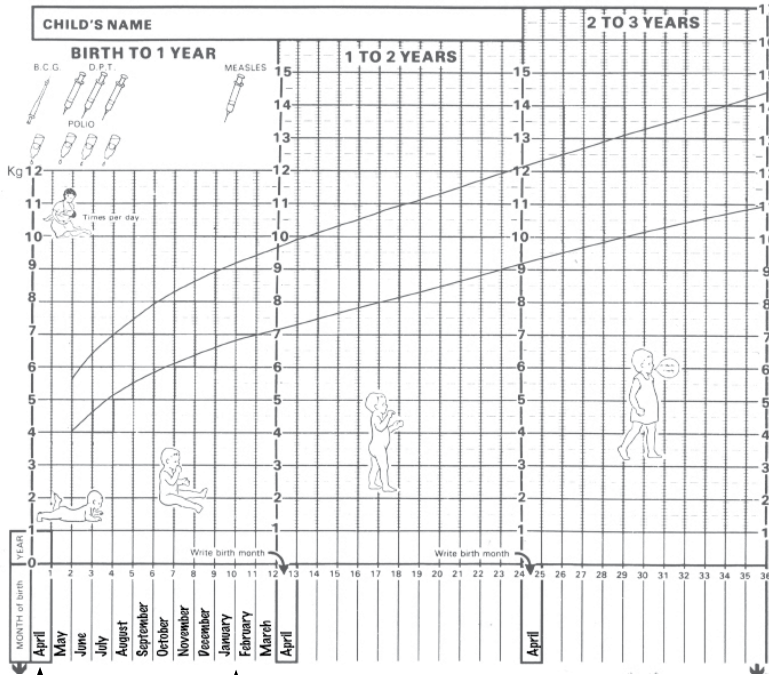
WRITE ON THE CHART

- Any illness e.g. diarrhoea, measles
- Admission to hospital
- Solids introduced
- Breast feeding stopped
- Birth of next child

like this -

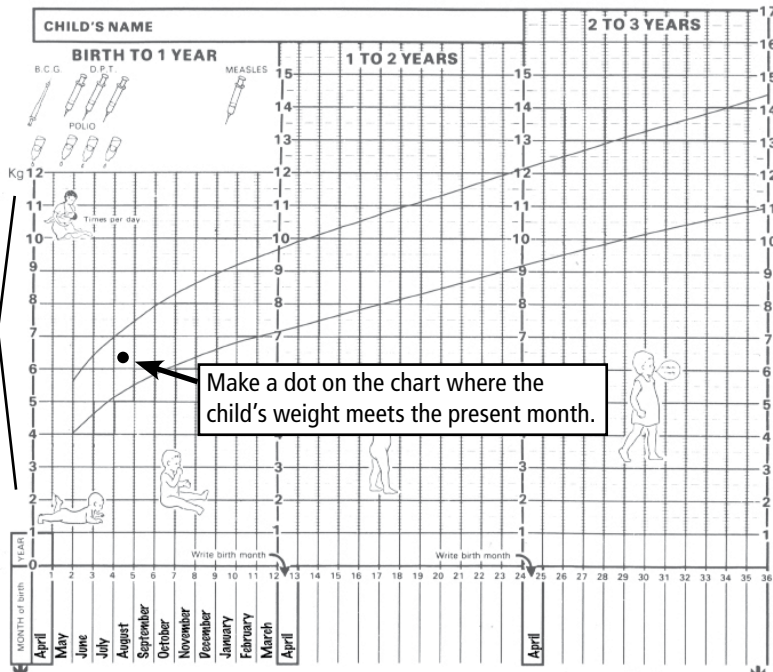


How to use the chart



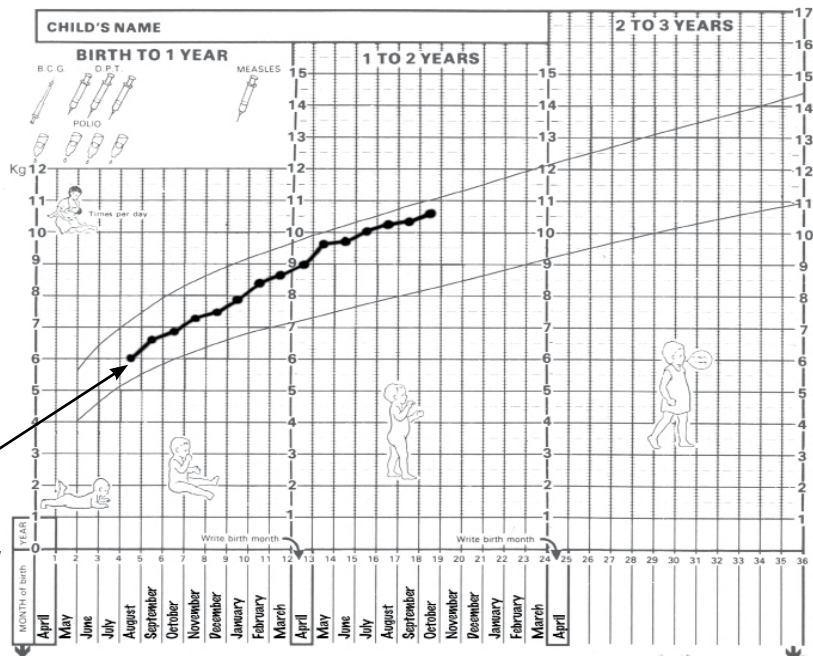
STEP 1
Write the month your child was born, here:
This chart shows the baby was born in April.

STEP 2
Write down the other months, in order, that follow your child's birth month.



STEP 3
Each month find your child's weight in kilograms.

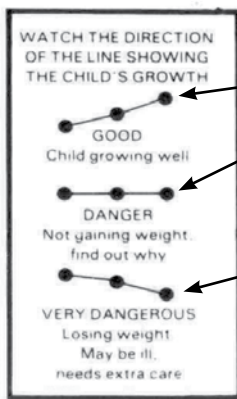
Make a dot on the chart where the child's weight meets the present month.



STEP 4

Each month weigh the child and put another dot on the chart. Join the dots with lines. If the child is healthy, each month the new dot will be higher on the chart than the last.

In most normal, healthy children, the line of dots falls between these 2 lines.



The most important thing is that she continues to grow.

That the line does not flatten out.

Or go down like this.

If you notice a child is not continuing to grow, visit more often. See if you can help to get her more food. Look for sicknesses that could be slowing her growth.

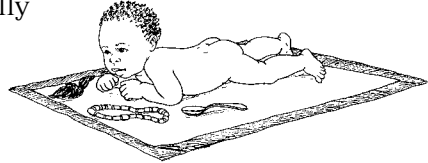
Development

Development means how a child's abilities grow. The way he uses his body and the way he communicates and learns to solve problems will be unique to him. But he should always continue to develop instead of getting "stuck." If a child develops more slowly, he needs more attention.

Why do some children develop more slowly than others? Sometimes there is no reason – differences between people are normal. But sickness and malnutrition can slow development in ways that are not normal. Certain disabilities can affect development too. For example, you may not know right away if a baby is deaf. Instead, you may notice he is not learning to talk as soon as his sisters and brothers did. Watch your child's development because slow development may be a sign that he has a health problem or disability that needs your attention.

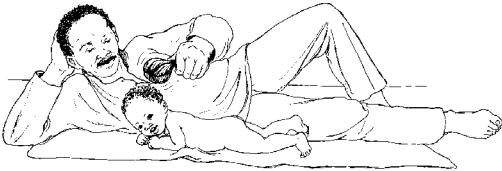
A 3 month old baby should:

- Smile
- React to sound and movement
- Respond to familiar voices and faces
- Notice his own hands
- Cry when he is hungry or uncomfortable
- Breastfeed without much trouble
- Lift his head when lying on his belly



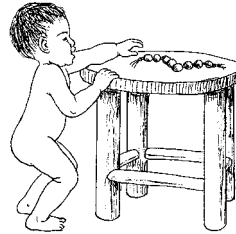
A 6 month old baby should:

- Turn his head toward sounds
- Roll from his belly to his back, and his back to his belly
- Recognize familiar people
- Pick things up and put them in his mouth



A 1 year old baby should:

- Understand and copy sounds and simple words
- Play simple games, like peek-a-boo
- Try to put things inside each other
- Sit up and crawl without help
- Pull himself to a standing position

**A 3 year old child should:**

- Understand and speak simple sentences
- Do little jobs like sweeping
- Notice other people's feelings



- Sort objects
- Run, jump, and climb



If the child develops slowly, you can do 2 things to help:

1. Ask a health worker to look for any medical causes of slow development.
2. Give extra attention to the child in the areas she is taking longer to develop.



Help a child grow in the ways she is falling behind.

See Appendix A (page 54) for all the child development charts. These charts are useful tools for both parents and health workers to keep track of a child's development and to help her along.

Helping children learn

As a child grows, she learns partly from what she is taught. Knowledge and skills she learns in school may help her to understand and do more later. School can be important.

But a child does much of her learning at home, in the fields, or in the streets. She learns by watching, listening, and trying for herself what she sees others do. She learns not so much from what people tell her, as from how she sees them act. Some of the most important things a child can learn — such as kindness, responsibility, and sharing — can be taught only by setting a good example.

A child learns through adventure. She needs to learn how to do things for herself, even though she makes mistakes. When she is very young, protect a child from danger. But as she grows, help her learn to care for herself. Give her some responsibility. Respect her judgment, even if it differs from your own.

When a child is young, she thinks mostly of filling only her own needs. Later, she discovers the deeper pleasure of helping and doing things for others. Welcome the help of children and let them know how much it means.

Children who are not afraid ask many questions. If parents, teachers, and others take the time to answer their questions clearly and honestly — and to say they do not know when they do not — a child will keep asking questions, and as she grows may look for ways to make her village or city a better place to live.



Caring for Children: Medicines

Medicines for Pain and Fever

Medicines for mild pain and lowering fever include paracetamol (the safest and best medicine to use for children), aspirin and ibuprofen. Aspirin and ibuprofen also reduce inflammation (swelling with blood). So, for example, if you twist your ankle, they will not only relieve the pain, but will also reduce the swelling. This helps you heal faster. But children with fevers and viral infections should avoid taking aspirin.

Do not give more than the recommended dose of these medicines. All of these drugs can have bad effects if too much is taken. For example, overuse of aspirin and ibuprofen can cause ulcers. Too much paracetamol is poisonous. For severe fever or pain, you can avoid using too much by alternating paracetamol and ibuprofen.

Paracetamol, acetaminophen

Paracetamol is a good, affordable medicine for fever and mild pain.

Important

Do not take more than the recommended amount. Too much is poisonous to the liver and can kill. Keep this medicine out of the reach of children, especially if you have it as a sweetened syrup.

Cold medicines often contain paracetamol, so do not give them if you are also giving paracetamol or you may give too much.

How to use

- ➔ Give 10 to 15 mg per kg, every 4 to 6 hours. Do not give more than 5 times in 24 hours. If you cannot weigh the child, dose by age:
 - Under 1 year:** give 62 mg ($\frac{1}{8}$ of a 500 mg tablet), every 4 to 6 hours.
 - 1 to 2 years:** give 125 mg ($\frac{1}{4}$ of a 500 mg tablet), every 4 to 6 hours.
 - 3 to 7 years:** give 250 mg ($\frac{1}{2}$ of a 500 mg tablet), every 4 to 6 hours.
 - 8 to 12 years:** give 375 mg ($\frac{3}{4}$ of a 500 mg tablet), every 4 to 6 hours.

Ibuprofen

Ibuprofen relieves muscle pain, joint pain, and headache, and lowers fever.

Side effects

Ibuprofen can cause a stomach ache, but taking it with milk or food lessens that problem.

Important

Do not take ibuprofen if you are allergic to aspirin. Some people who are allergic to one are also allergic to the other. Do not give ibuprofen to babies younger than 6 months.

How to give

→ Give 5 to 10 mg per kg. If you cannot weigh the child, dose by age.

6 months to 1 year: give 50 mg, every 6 to 8 hours.

1 to 2 years: give 75 mg, every 6 to 8 hours.

2 to 3 years: give 100 mg, every 6 to 8 hours.

4 to 5 years: give 150 mg, every 6 to 8 hours.

6 to 8 years: give 200 mg, every 6 to 8 hours.

9 to 10 years: give 250 mg, every 6 to 8 hours.

11 years: give 300 mg, every 6 to 8 hours.

Over 12 years: give 200 to 400 mg, every 4 to 6 hours.

Do not give more than 40 mg per kg in a day. Do not give more than 4 doses a day, and do not give for more than 10 consecutive days.

Antibiotics Fight Infection

Antibiotics are medicines that fight infection from bacteria. They do not help against viral infections like chicken pox, rubella, flu, or the common cold. Not all antibiotics will fight all infections from bacteria. Antibiotics that share the same chemical make-up are said to be from the same family. It is important to know about the families of antibiotics for 2 reasons:

1. Antibiotics from the same family can often treat the same problems. This means you can use a different medicine from the same family.
2. If you are allergic to an antibiotic of one family, you will also be allergic to the other members of the same family of antibiotics. This means you will have to take a medicine from another family instead.

Antibiotics must be given for their full "course." Stopping before you have finished all the days of treatment can make the infection stronger.

The penicillins

Medicines in the penicillin family are some of the most useful antibiotics. Penicillins fight certain infections, including many that produce pus.

Penicillin is measured in milligrams (mg) or units (U). For penicillin G, 250 mg = 400,000 U.

For most people, penicillin is one of the safest medicines. Using more than the recommended dose wastes money but is not likely to harm the person.

Resistance to penicillin

Certain infections have become “resistant” to penicillin. This means that in the past penicillin would have been able to cure someone with these infections, but now penicillin does not work. If the infection does not respond to ordinary penicillin, another antibiotic may be tried or a different form of penicillin may work. For example, pneumonia is sometimes resistant to penicillin. Try cotrimoxazole (page 46) or erythromycin (page 46).

Important for all kinds of penicillin (including ampicillin and amoxicillin) ⚠

Some people are allergic to penicillin. Mild allergic reactions cause a rash. Often this comes several hours or days after taking penicillin and may last for days. Stop taking the penicillin immediately. Antihistamines help calm the itching. Stomach upset and diarrhea from taking penicillin are not signs of an allergic reaction and, while uncomfortable, are not a reason to stop taking it.

Rarely, penicillin can cause a severe allergy called allergic shock. Within a few minutes or hours after taking penicillin, the person becomes flushed, gets a swollen throat and lips, has trouble breathing, feels faint, and goes into a state of shock. This is very dangerous. Epinephrine (adrenalin) must be injected at once. Always have epinephrine ready when you inject penicillin. See First Aid: Medicines (in development).

Someone who has once had an allergic reaction to penicillin should not be given any kind of penicillin – ampicillin, amoxicillin, or others – ever again, either by mouth or by injection. This is because the next time the reaction could be worse and might kill him. People allergic to penicillin can use erythromycin or another antibiotic instead.

Injections

Penicillin usually works well when given by mouth. Injected forms of penicillin can be dangerous. They are more likely to cause severe allergic reactions and other problems, and should be used with caution. Use injectable penicillin only for severe or dangerous infections.

Ampicillin and Amoxicillin: broad-spectrum antibiotics

Ampicillin and amoxicillin are broad-spectrum penicillins, which means they kill more kinds of bacteria than other medicines in the penicillin family. The two are often interchangeable. When you see a recommendation for ampicillin in this book, you will often be able to use amoxicillin in its place, in the correct dose.

Ampicillin and amoxicillin are very safe and are especially useful for babies and small children. They are both useful in treating pneumonia or ear infections. Ampicillin is also useful in treating meningitis and other severe infections in newborns.

Side effects

Both these medicines, but especially ampicillin, tend to cause nausea and diarrhea. Avoid giving them to children who already have diarrhea if you can give another antibiotic instead.

The other common side effect is rash. Raised, itchy bumps that come and go in a few hours are probably a sign of penicillin allergy. Stop giving the medicine right away and do not give the child a penicillin medicine again. Future allergic reactions may be more severe and even life-threatening. For some problems erythromycin can be used instead, see page 46. A flat rash that looks like measles, and usually starts a week after starting the medicine and takes days to go away, is not necessarily an allergy. But it is impossible to know for sure if the rash is from allergy or not, so it is usually better to stop the medicine.

Important

Resistance to these medicines is growing more common. Depending on where you live, they may not work any more against staphylococcus, shigella, or other infections.

How to use

Ampicillin and amoxicillin work well when taken by mouth. Ampicillin can also be given by injection, but should be injected only for severe illnesses such as meningitis, or when the child is vomiting or cannot swallow.

As with other antibiotics, there is a range for how long to continue giving these medicines. Continue the medicine until all signs of infection (including fever) have been gone for at least 24 hours. If the child has HIV, give the medicine for the full number of days listed. Likewise there is a range for how much to give. In general, give the lower amount of the range for a thinner child or for less severe infection, and the higher amount for a bigger child or more severe infection.

AMOXICILLIN (Oral)

For most infections in children

→ Give 25 to 50 mg per kg each day, divided into 3 doses. Or dose by age:

Under 3 years: give 62 mg, 3 times a day for 3 to 7 days.

3 to 7 years: give 125 mg, 3 times a day for 3 to 7 days.

8 to 12 years: give 250 mg, 3 times a day for 3 to 7 days.

Over 12 years: give 250 to 500 mg, 3 times a day, **OR**
500 to 875 mg, 2 times a day for 3 to 7 days.

Continue giving amoxicillin until all signs have been gone for at least 24 hours.

For severe infections you can give up to 95 mg per kg, divided into 3 doses a day.

For pneumonia

→ Give 25 mg per kg, 2 times a day for 5 days.

AMPICILLIN

→ **Inject** 100 to 200 mg per kg each day, divided into 3 or 4 doses a day, until the child starts to improve, then switch to amoxicillin by mouth.

Newborn babies: inject 125 mg (¼ of a 500 mg vial), 3 times a day.

1 month to 1 year: inject 250 mg (½ of a 500 mg vial), 4 times a day.

1 to 3 years: inject 500 mg, 4 times a day.

4 to 7 years: inject 750 mg, 4 times a day.

8 to 12 years: inject 1000 mg, 4 times a day.

Over 12 years: inject 1500 mg, 4 times a day.

For severe infection

Double the doses above. If you suspect meningitis or severe pneumonia, inject both ampicillin and gentamicin (see below). See warnings for gentamicin on page 47.

See Medicines, Tests, and Treatments (in development) for how to inject. Dilute a 500 mg vial of ampicillin with 2.1 ml sterile water. This makes a concentration of 500 mg per 2.5 ml. Use an undiluted 2 ml vial of gentamicin at 40 mg per ml.

AMPICILLIN AND GENTAMICIN

→ AMPICILLIN Inject 50 mg per kg, 4 times a day for at least 5 days,
AND

GENTAMICIN Inject 7.5 mg per kg, once a day for at least 5 days.

2 to 4 months, weighing 4 to 5.9 kg: inject 1 ml ampicillin 4 times a day, **AND**
0.5 to 1 ml gentamicin 1 time a day, for at least 5 days.

4 to 12 months, weighing 6 to 9.9 kg: inject 2 ml ampicillin 4 times a day, **AND**
1.1 to 1.8 ml gentamicin 1 time a day, for at least 5 days.

1 to 3 years, weighing 10 to 13.9 kg: inject 3 ml ampicillin 4 times a day, **AND**
1.9 to 2.7 ml gentamicin 1 time a day, for at least 5 days.

(information for ampicillin and gentamicin continues on next page)

4 to 5 years, weighing 14 to 19 kg: inject 5 ml ampicillin 4 times a day, **AND** 2.8 to 3.5 ml gentamicin 1 time a day, for at least 5 days.

Give the lower amount of gentamicin for children who weigh at the lower end of the range, and the higher amount for the children who weigh at the higher end.

If you are fairly certain the infection is meningitis, increase the ampicillin to as much as 200 mg per kg, 4 times a day.

Penicillin by mouth, penicillin V, penicillin VK

Penicillin by mouth (rather than by injection) can be used for mild and moderately severe infections, including:

- sore throat with sudden, high fever (strep throat)
- ear infection
- sinusitis
- rheumatic fever
- pneumonia

Even if you started with injected penicillin for a severe infection, you can usually switch to penicillin by mouth once the person starts to improve. If improvement does not begin within 2 or 3 days, consider switching to another antibiotic and get medical advice.

How to give

To help the body make better use of the medicine, take penicillin on an empty stomach, at least 1 hour before or 2 hours after meals.

➔ Give 25 to 50 mg per kg each day, divided into 4 doses, for 10 days. If you cannot weigh the child, dose by age:

Under 1 year: give 62.5 mg, 4 times a day for 10 days.

1 to 5 years: give 125 mg, 4 times a day for 10 days.

6 to 12 years: give 125 to 250 mg, 4 times a day for 10 days.

Over 12 years: give 250 to 500 mg, 4 times a day for 10 days.

For more serious infections, double the doses above.

For rheumatic fever

➔ **Children:** give 250 mg, 2 times a day for 10 days.

Adults: give 500 mg, 2 times a day for 10 days.

Injectable penicillin, penicillin G

Injectable penicillin should be used for certain severe infections, including:

- tetanus
- severe pneumonia
- badly infected wounds
- when a bone pokes through the skin
- syphilis

Injectable penicillin comes in different forms. The main difference is how long the medicine lasts in the body: short-acting, intermediate-acting, or long-acting.

How to use

PROCAINE PENICILLIN (intermediate-acting)

Inject only in the muscle (IM), not in the vein (IV).

➔ Give 25,000 to 50,000 units (U) per kg per day. Do not give more than 4,800,000 units. If you cannot weigh the child, dose by age:

2 months to 3 years: inject 150,000 units, 1 time a day for 10 to 15 days.

4 to 7 years: inject 300,000 units, 1 time a day for 10 to 15 days.

8 to 12 years: inject 600,000 units, 1 time a day for 10 to 15 days.

Over 12 years: inject 600,000 to 4,800,000 units, 1 time a day for 10 to 15 days.

Do not use for babies under 2 months unless no other penicillin or ampicillin is available. If this is your only choice, inject 50,000 units, 1 time a day for 10 to 15 days.

For very severe infections in any age, double the above dose.

The dose for procaine penicillin combined with a short-acting penicillin is the same as the dose for procaine penicillin alone.

BENZATHINE BENZYL PENICILLIN, PENICILLIN G, BENZATHINE PENICILLIN (long-acting)

Inject only in the muscle (IM), not in the vein (IV).

➔ **Children under 30 kg, or 1 to 7 years:** inject 300,000 units to 600,000 units, 1 time a week. For mild infections, 1 injection may be enough.

Adults and children over 30 kg, or over 8 years: inject 1.2 million units. For mild infections, 1 injection may be enough.

For strep throat, give 1 injection of the dose above.

For someone who has had rheumatic fever, inject the dose above 1 time every 4 weeks. Continue this treatment for 5 to 10 years to prevent rheumatic heart disease.

For syphilis in newborns, inject 1 dose of 50,000 units per kg.

Other antibiotics

Erythromycin

Erythromycin works against many of the same infections as medicines in the penicillin family but is a little more expensive. In many parts of the world, erythromycin now works better than penicillins for some cases of pneumonia. It can also be used for diphtheria and pertussis.

For people who are allergic to penicillins, erythromycin is a good replacement. For many infections, it can also be used instead of tetracycline.

Side effects

Erythromycin often causes nausea and diarrhea, especially in children. Do not use for more than 2 weeks as it may cause jaundice.

How to use

→ Give 30 to 50 mg per kg, divided into 2 to 4 doses a day. Give for 7 to 10 days or until 24 hours after all signs of infection are gone.

Newborns: give 65 mg, 2 times a day for 7 to 10 days.

Under 2 years: give 125 mg, 3 times a day for 7 to 10 days.

2 to 8 years: give 250 mg, 3 times a day for 7 to 10 days.

Over 8 years: give 250 to 500 mg, 4 times a day for 7 to 10 days.

For severe infections, double the doses above.

Cotrimoxazole, sulfamethoxazole with trimethoprim, TMP-SMX

This combination of 2 antibiotics is inexpensive and fights a broad-spectrum of infections such as bladder infections (urinary tract infections), typhoid, and ear infections. It is an important medicine for people with HIV and can prevent the many infections that occur as a result of HIV infection.

Important

Avoid giving cotrimoxazole to babies less than 6 weeks old. Allergy to this medicine is common. Signs of allergic reaction are fever, difficulty breathing, or rash. Stop giving cotrimoxazole if the child develops a rash or if you think there may be an allergy.

How to use

Cotrimoxazole comes in different strengths of each of the 2 medicines it contains. So it may say 200/40 (meaning 200 mg sulfamethoxazole and 40 mg trimethoprim) or 400/80 or 800/160. Dose is sometimes described only in terms of the amount of trimethoprim.

For most infections

- ➔ **6 months to 5 years:** give sulfamethoxazole 200 mg + trimethoprim 40 mg, 2 times a day.
- 6 to 12 years:** give sulfamethoxazole 400 mg + trimethoprim 80 mg, 2 times a day.
- Over 12 years:** give sulfamethoxazole 800 mg + trimethoprim 160 mg, 2 times a day.

For children with HIV, to prevent pneumonia

- ➔ **Under 6 months:** give sulfamethoxazole 100 mg + trimethoprim 20 mg, 1 time a day, every day.
- 6 months to 5 years:** give sulfamethoxazole 200 mg + trimethoprim 40 mg, 1 time a day, every day.
- 6 to 14 years:** give sulfamethoxazole 400 mg + trimethoprim 80 mg, 1 time a day, every day.
- Over 14 years:** give sulfamethoxazole 800 mg + trimethoprim 160 mg (two 400/80 tablets, or one “double strength” tablet), 1 time a day, every day.

Gentamicin

Gentamicin is a very strong antibiotic of the aminoglycoside family. It can only be given by injection or IV (in the vein). This drug can damage the kidneys and hearing, and therefore should only be used in emergencies.

For pneumonia or meningitis in babies and children, give a combination of gentamicin and ampicillin. For doses, see page 43.

Important

Gentamicin must be given in the exactly correct dose. Giving too much can cause kidney damage or permanent deafness. Give the right dose for the child’s weight – do not base the dose on the child’s age. And do not give gentamicin for more than 10 days.

Medicines for seizures

Diazepam

Diazepam can be used to stop a single seizure. For people with ongoing seizures (epilepsy), use a different medicine, one that can be taken every day.

Side effects

Sleepiness.

Important

Too much diazepam can slow down or stop breathing. **Do not give more than the recommended dose and do not give more than two doses.**

Diazepam is a habit-forming (addictive) drug. Avoid long-term or frequent use.

Do not inject diazepam unless you have experience or training to do so. It is very difficult to give safely this way. Instead, during a seizure, you can put it into the anus.

How to give

For a seizure

Use the liquid solution for injection, or grind up 1 tablet and mix with water. Take the needle off a syringe, then draw up the medication and put it inside the anus. Or use diazepam gel made for use in the anus.

→ **Under 7 years:** give 0.2 mg per kg, one time.

7 to 12 years: give 3 to 5 mg, one time.

Over 12 years: give 5 to 10 mg, one time.

If the seizure is not controlled 15 minutes after giving the medicine, repeat the dose. Do not repeat more than once.

To relax muscles and calm pain

Give diazepam tablets by mouth 45 minutes before a painful procedure like pushing in a hernia or setting a bone.

→ Give 0.2 to 0.3 mg per kg. If you cannot weigh the child, dose by age:

Under 5 years: give 1 mg.

Over 5 years: give 2 mg.

Antihistamines: Medicines for Allergy

Itching, sneezing, and rashes caused by allergy can usually be treated with antihistamines. Any antihistamine works about as well as any other. So you if you do not have chlorpheniramine (described below), use diphenhydramine or another antihistamine in the right dose (this will vary for each drug). All antihistamines make people drowsy, but some more than others.

These drugs are not helpful for the common cold.

For a severe allergic reaction where there is difficulty breathing, epinephrine (adrenaline) is needed as well as antihistamines. See First Aid: Medicines (in development).

Chlorpheniramine, chlorphenamine

Chlorpheniramine is an antihistamine that reduces itching, sneezing, rashes, and other problems caused by allergies. It can be used after an insect bite, a mild food or drug allergy, or for "hay fever" (sneezing and itchy eyes from pollen in the air).

Side effects



Sleepiness (but this is less likely than with other antihistamines).

How to give



→ **1 to 2 years:** give 1 mg, 2 times a day until the person feels better.

3 to 5 years: give 1 mg, every 4 to 6 hours until the person feels better.

6 to 12 years: give 2 mg, every 4 to 6 hours until the person feels better.

Over 12 years: give 4 mg, every 4 to 6 hours until the person feels better.

For severe allergic reaction, first inject epinephrine (see First Aid: Medicines - in development). Following with an injection of chlorpheniramine will help prevent the reaction from coming back when the epinephrine wears off. (If you do not have injectable chlorpheniramine, give tablets by mouth in the doses listed above.)

→ **1 to 5 years:** inject 2.5 to 5 mg, every 4 to 6 hours until the signs of allergic reaction are gone.

6 to 12 years: inject 5 to 10 mg, every 4 to 6 hours until the signs of allergic reaction are gone.

Over 12 years: inject 10 to 20 mg (no more than 40 mg in 24 hours), every 4 to 6 hours until the signs of allergic reaction are gone.

Medicines for worms

Medicines by themselves are not enough to get rid of worm infections for very long. Personal and public cleanliness is also necessary. Worm infections can spread easily among family members, so when one person has worms it is wise to treat the whole family.

Mebendazole

Mebendazole works against hookworm, whipworm, roundworm, pinworm (threadworm), and another worm called strongyloides. It may do some good against trichinosis, but is not the best medicine for this. Although side effects are not common, there may be some gut pain or diarrhea if the person is infected with a lot of worms.

Important

Avoid mebendazole during the first 3 months of pregnancy when it can harm the developing baby. Do not give to children under 1 year old.

How to use

For pinworm

→ **1 year to adult:** give 100 mg, one time by mouth. Repeat in 2 weeks if necessary.

For roundworm (Ascaris), whipworm (Trichuris) and hookworm

→ **1 year to adult:** give 100 mg, 2 times a day for 3 days (6 tablets in all). **OR** give one 500 mg tablet, one time only.

To prevent roundworm where this infection is common

→ **1 year to adult:** give 500 mg, every 4 to 6 months.

For trichinosis

→ **1 year to adult:** give 200 to 400 mg, 3 times a day for 3 days. Then give 400 to 500 mg, 3 times a day for another 10 days. If there is pain or vision problems, also give a steroid, for example prednisolone, 40 to 60 mg, once a day for 10 to 15 days.

Albendazole

Albendazole is similar to mebendazole, but often more expensive. It works against hookworm, whipworm, strongyloides, roundworm, pinworm, and trichinosis. Side effects are rare.

Important

Avoid albendazole during the first 3 months of pregnancy when it can harm the developing baby. Do not give to children under 1 year old.

How to use

For pinworm, roundworm (Ascaris), whipworm (Trichuris), and hookworm

→ **1 to 2 years:** give 200 mg, one time.

Over 2 years: give 400 mg, one time. Repeat in 2 weeks if needed.

For strongyloides

→ Give 400 mg, 2 times a day for 7 days.

For trichinosis

→ Give 400 mg, 2 times a day for 8 to 14 days. If there are pain or vision problems, also give a steroid, for example prednisolone, 40 to 60 mg, once a day for 10 to 15 days.

Pyrantel pamoate, pyrantel embonate

Pyrantel works for pinworm, hookworm, and roundworm (Ascaris), but it may be expensive. It occasionally causes vomiting, dizziness, or headache. Do not give it to someone also taking piperazine (another anti-worm medicine).

How to use

For hookworm and roundworm: give one dose only.

For pinworm: give one dose, wait 2 weeks, then give another dose.

→ Give 10 mg per kg. If you cannot weigh the child, dose by age:

Under 2 years: give 62 mg (¼ of a 250 mg tablet).

2 to 5 years: give 125 mg (½ of a 250 mg tablet).

6 to 9 years: give 250 mg (one 250 mg tablet).

10 to 14 years: give 500 mg (two 250 mg tablets).

Over 14 years: give 750 mg (three 250 mg tablets).

Vitamin and Mineral Supplements

Vitamin A, retinol

To prevent night blindness and xerophthalmia.

In areas where night blindness and xerophthalmia are common problems, people need more yellow fruits and vegetables and dark green leafy foods, as well as animal foods such as eggs and liver. Since this is not always possible – at least in the short term – it may be a good idea to give children and new mothers a vitamin A supplement every 6 months.

Important

You cannot usually get too much vitamin A from food. But too much in the form of capsules, tablets, or oil is dangerous. Do not use more than the suggested amount.

How to use

For young children, you can crush tablets and mix them with a little breast milk. Or cut open capsules and squeeze the liquid into the child's mouth.

To prevent or treat vitamin A deficiency

→ **6 months to 1 year:** give 100,000 Units by mouth one time.

Over 1 year: give 200,000 Units by mouth one time. Repeat every 6 months.

For mothers: give 200,000 Units by mouth within 6 weeks of giving birth. The vitamin A protects the mother and also passes to the baby through breast milk.

For children with measles

Vitamin A prevents pneumonia and blindness, two common complications of measles.

→ **6 months to 1 year:** give 100,000 Units by mouth, 1 time a day for 2 days.

Over 1 year: give 200,000 Units by mouth, 1 time a day for 2 days.

(If the child has already received a dose of vitamin A in the last 6 months, give this treatment for one day only.)

If someone is severely malnourished or already starting to lose their vision, repeat the dose of vitamin A after 2 weeks.

Zinc

Zinc helps children with diarrhea to get better faster. It should be given along with rehydration drink.

How to use

For babies, tablets can be ground up and mixed with breast milk or a little water. You may be able to get a “dispersible tablet” which dissolves quickly and easily in liquid.

→ **Newborn to 6 months:** give 10 mg, once a day for 10 to 14 days.

Over 6 months: give 20 mg, once a day for 10 to 14 days.

Iron, ferrous sulfate, ferrous gluconate

Iron is useful in the treatment or prevention of most cases of anemia. Treatment with iron by mouth usually takes at least 3 months.

Iron works better when taken with vitamin C (either by eating fruits and vegetables, or taking a vitamin C tablet).

Side effects



Iron sometimes upsets the stomach and is best taken with meals. Also, it can cause constipation especially in older people, and it may make the stools (feces) look black. See advice for constipation on page 37 in *Belly Pain, Diarrhea, and Worms*.

Drinking liquid iron supplements blackens the teeth. Drink it through a straw or brush your teeth after drinking.

Important

Be sure the dose is right. Too much iron is poisonous. Do not give iron to severely malnourished persons. Wait until they have recovered their health before giving them iron.

How to use



Different forms of iron contain different concentrations of this mineral. For example, a 300 mg tablet of ferrous sulfate contains about 60 mg of iron. But a 325 mg tablet of ferrous gluconate contains 36 mg of iron. So read the label of your tablets, syrup, or other iron supplement to learn the iron content.

To PREVENT anemia in pregnant and breastfeeding women

- ➔ Give 300 mg ferrous sulfate (60 mg iron) each day. It should also be taken daily by women who plan to become pregnant. A combined iron and folic acid supplement is even better because folic acid helps prevent birth defects.

To TREAT an anemic child

- ➔ Give ferrous sulfate once a day, or divide into 2 doses if it upsets the stomach.

DOSE BY AGE FOR FERROUS SULFATE

AGE GROUP	HOW MUCH PER DOSE	HOW MANY 300 MG TABLETS	HOW MUCH TOTAL IRON
Under 2 years	➔ 125 mg ferrous sulfate	➔ Use iron syrup, or crush about ¼ of a 300 mg ferrous sulfate tablet in breast milk	➔ Give enough to provide 25 mg iron
2 to 12 years old	➔ 300 mg ferrous sulfate	➔ 1 tablet of 300 mg ferrous sulfate	➔ Give enough to provide 60 mg iron
Over 12 years	➔ 600 mg ferrous sulfate	➔ 2 tablets of 300 mg ferrous sulfate	➔ Give enough to provide 120 mg iron

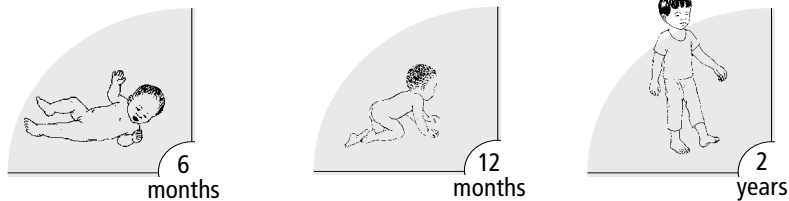
Appendix A: Child Development Charts

How to use these child development charts

Children develop in several main areas: **physical** (body), **mental** (mind), **communication** (gesturing or talking), and **social** (relating to other people). Some skills a child learns include all these areas. For example, when a child reaches her arms up to be held, she is using a:

- physical skill – she holds up her arms.
- mental skill – she recognizes you.
- communication skill – she tells you what she wants.
- social skill – she enjoys being held by you.

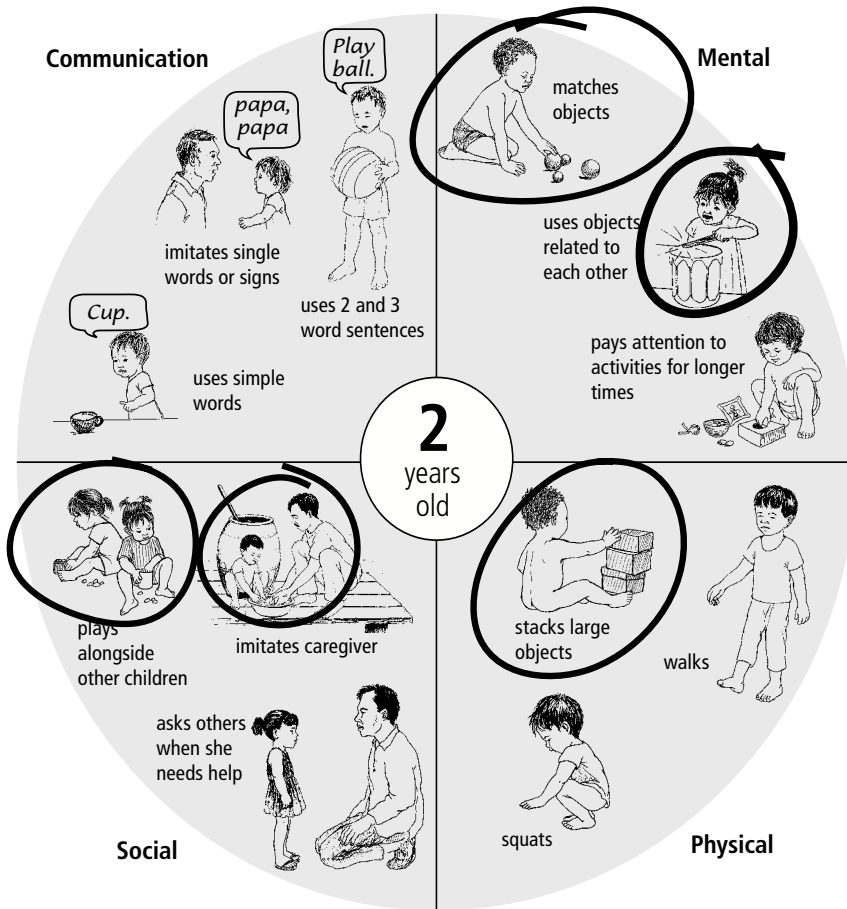
The charts on the next pages show some of the skills children learn and when most children learn them. You can use the chart to get general information about how children develop and to help you decide what skills the child needs to learn.



The charts show how children's physical skills change as children grow.

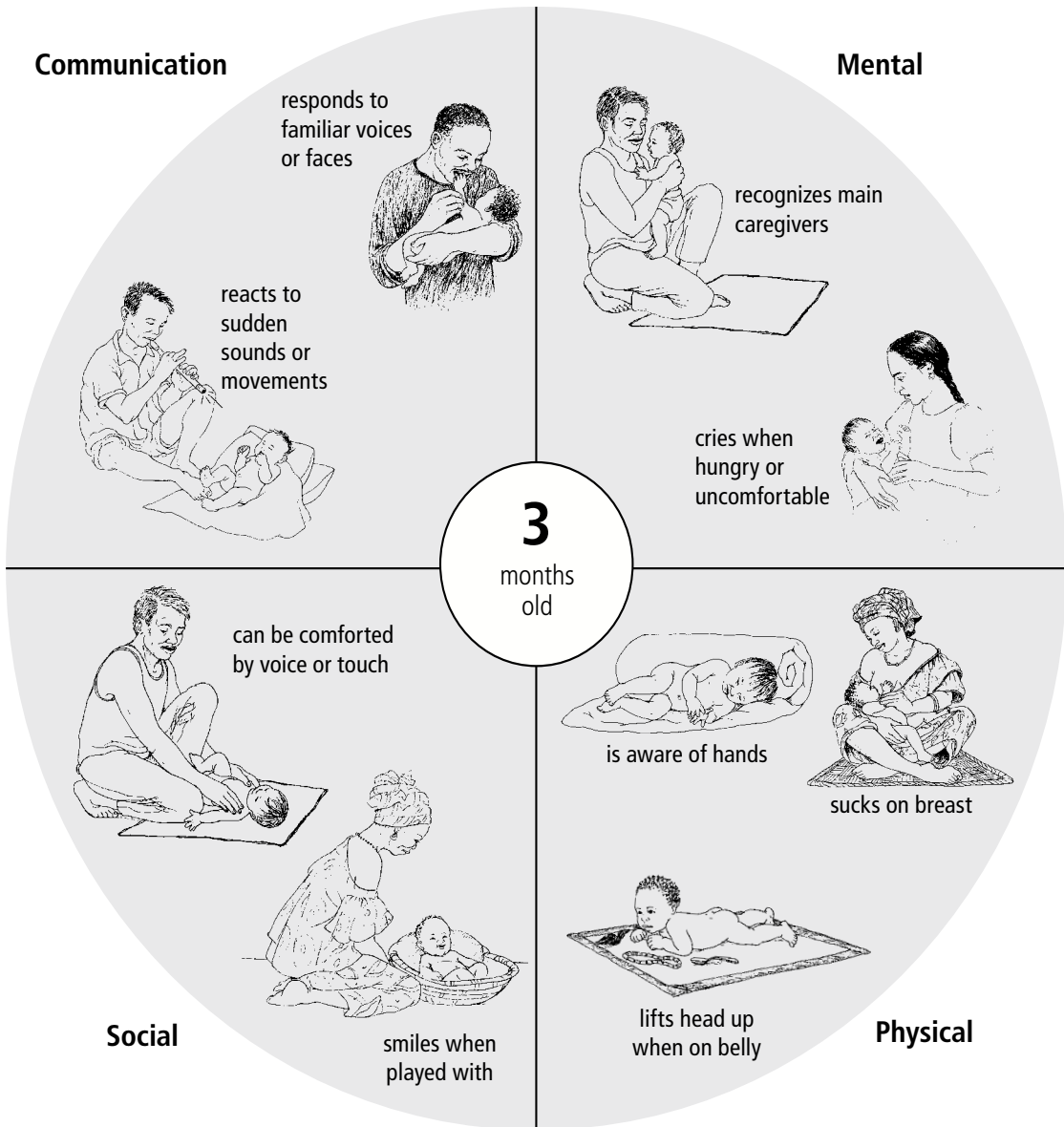
To help you decide what skills the child needs to learn

Find the chart for the age group closest to the child's age. On the chart, circle the skills your child has. You may find your child does not have some skills that other children his age have. Knowing this can help you decide which activities you want to work on with the child.



In the chart above, a mother has circled the skills her 20-month-old daughter can do. Her child needs activities to help her gain physical and communication skills.

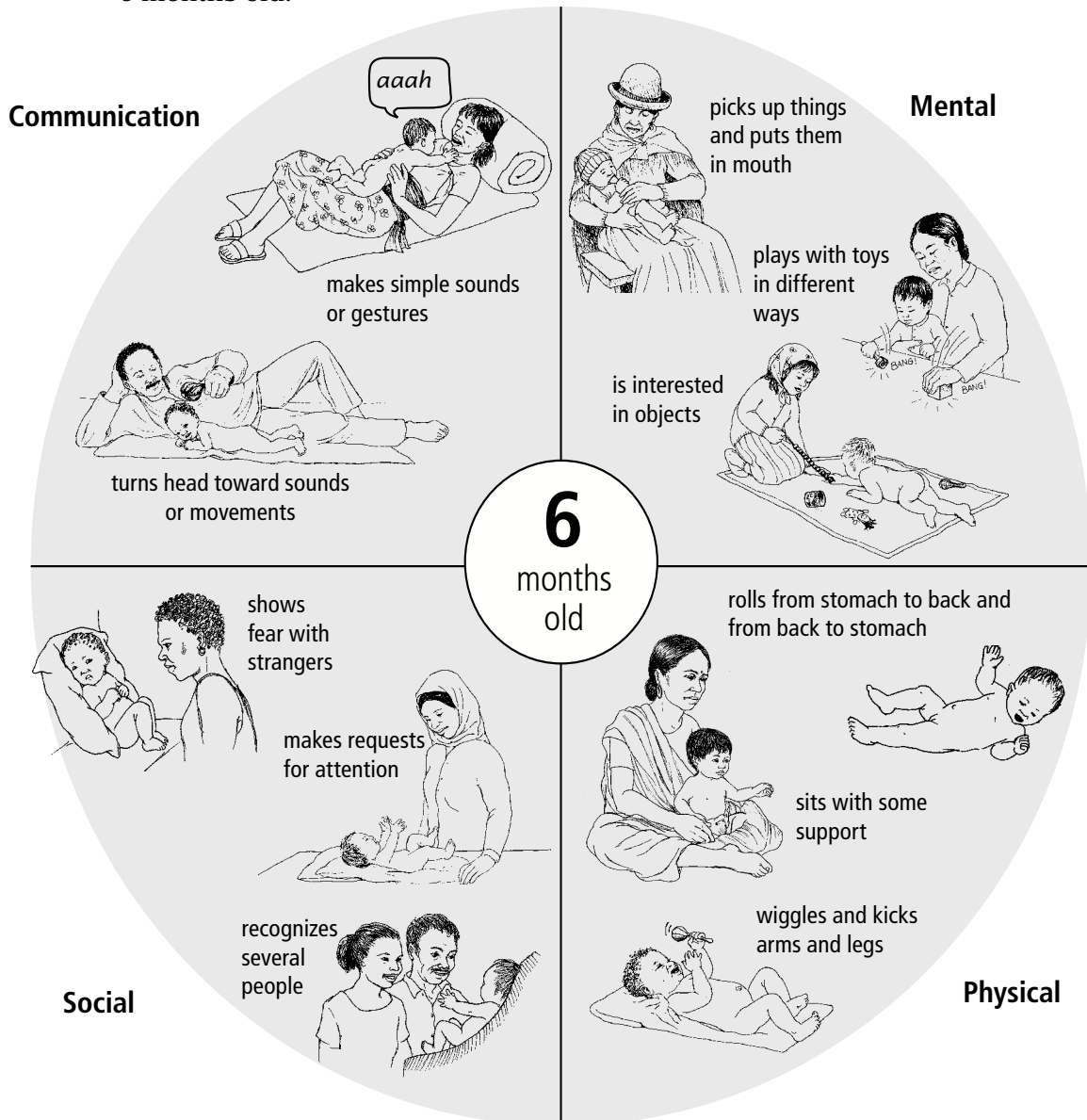
Each part of this circle shows a different area of development. The pictures and words are examples of skills that many babies have when they are **3 months old**.



Babies who cannot do 2 skills in any part of the circle will benefit from activities that help babies develop in that area. But the pictures are only examples of skills. For example, in the Communication part of the circle: you do not have to play the flute! The question to ask yourself is if your baby reacts to a sudden sound.

Keep in mind that a baby will learn best by doing activities that other babies the same age do in your community.

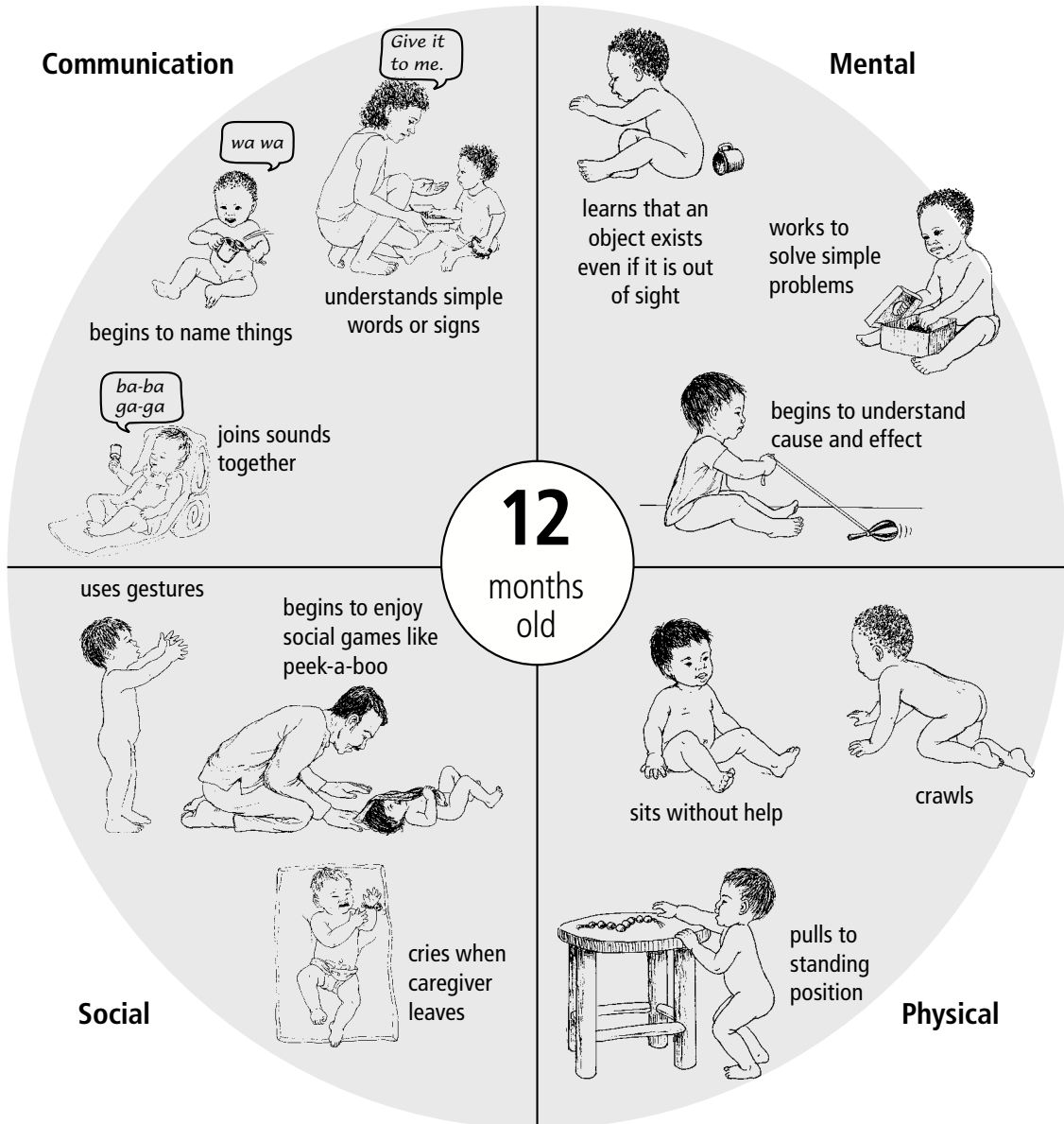
Each part of this circle shows a different area of development. The pictures and words are examples of skills that many babies have when they are **6 months old**.



Babies who cannot do 2 skills in any part of the circle will benefit from activities that help babies develop in that area. But the pictures are only examples of skills. For example, in the Physical part of the circle: your baby does not have to play with a rattle. The question to ask yourself is if your baby wiggles and kicks.

Keep in mind that a baby will learn best by doing activities that other babies the same age do in your community.

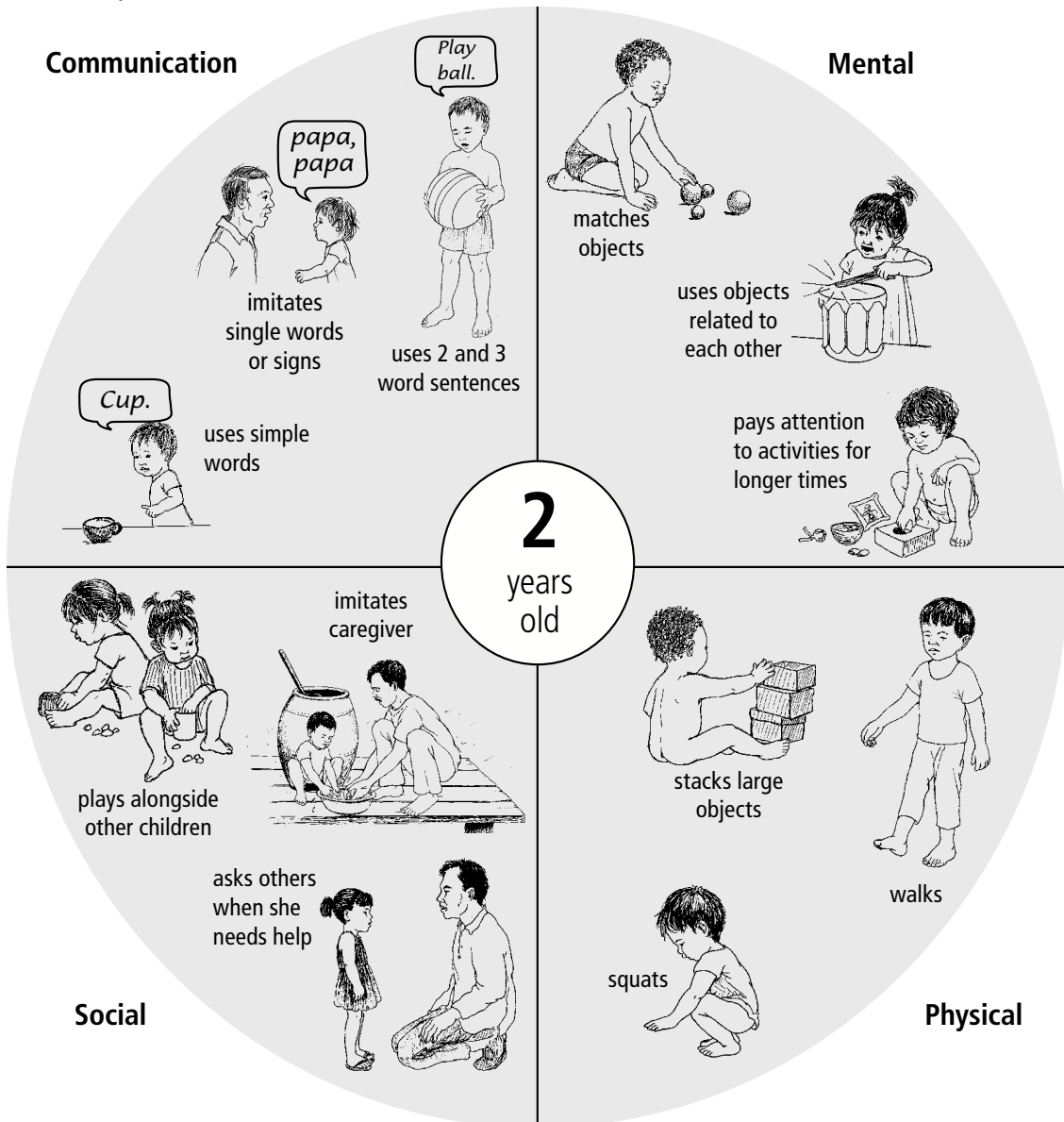
Each part of this circle shows a different area of development. The pictures and words are examples of skills that many babies have when they are **12 months old**.



Babies who cannot do 2 skills in any part of the circle will benefit from activities that help babies develop in that area. But the pictures are only examples of skills. For example, in the Social part of the circle: you do not have to play peek-a-boo with your baby. The question to ask yourself is if your baby enjoys social games.

Keep in mind that a baby will learn best by doing activities that other babies the same age do in your community.

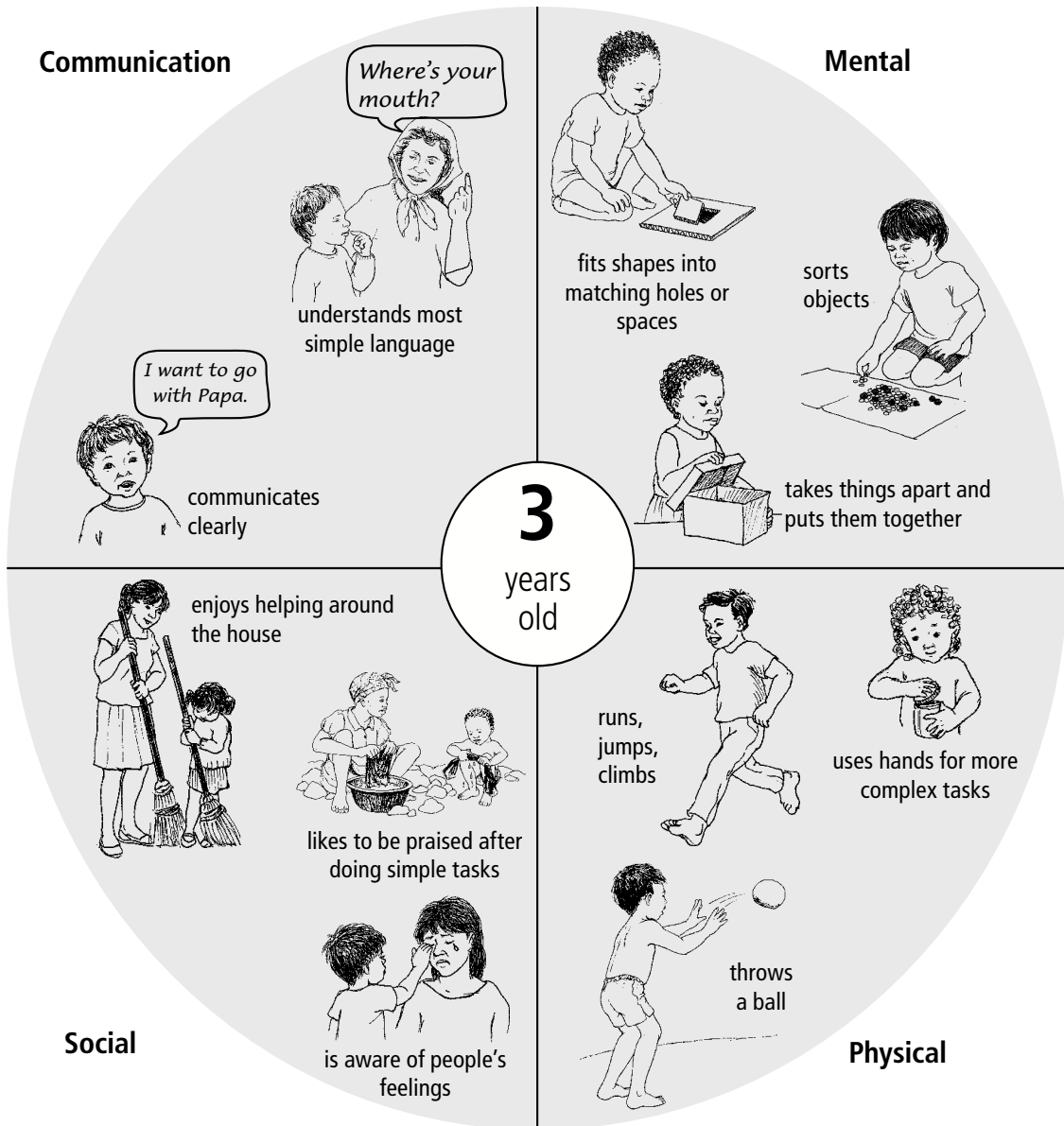
Each part of this circle shows a different area of development. The pictures and words are examples of skills that many children have when they are 2 years old.



Children who cannot do 2 skills in any part of the circle will benefit from activities that help children develop in that area. But the pictures are only examples of skills. For example, in the Mental part of the circle: your child does not have to be able to play a drum. The question to ask yourself is if your child uses 2 objects together.

Keep in mind that a child will learn best by doing activities that other children the same age do in your community.

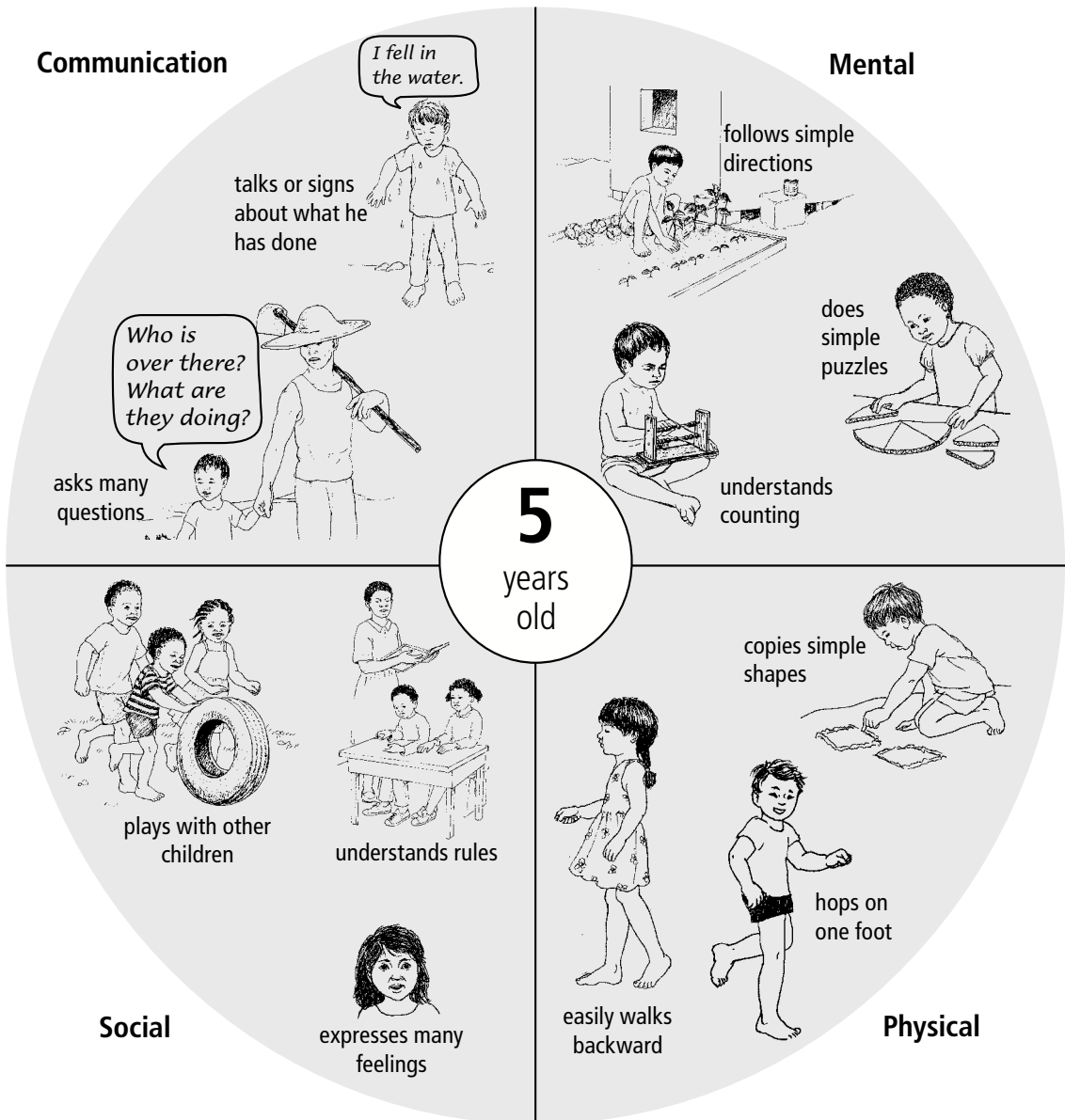
Each part of this circle shows a different area of development. The pictures and words are examples of skills that many children have when they are 3 years old.



Children who cannot do 2 skills in any part of the circle will benefit from activities that help children develop in that area. But the pictures are only examples of skills. For example, in the Social part of the circle: your child does not have to sweep the floor. The question to ask yourself is if your child enjoys helping work with the family.

Keep in mind that a child will learn best by doing activities that other children the same age do in your community.

Each part of this circle shows a different area of development. The pictures and words are examples of skills that many children have when they are 5 years old.



Children who cannot do 2 skills in any part of the circle will benefit from activities that help children develop in that area. But the pictures are only examples of skills. For example, in the Social part of the circle: your child does not have to be listening to a teacher. The question to ask yourself is if your child understands rules like other children do.

Keep in mind that a child will learn best by doing activities that other children the same age do in your community.