



HEALTH SERVICES AGENCY

Public Health Services

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Dear Colleagues,

Pertussis is a highly contagious bacterial disease that can be spread by coughing. The best way to prevent pertussis is to get vaccinated. Infants too young for vaccination are at greatest risk for life-threatening cases of pertussis.

Statewide data show that while pertussis cases occur every year in California, there are cyclical increases in disease incidence with epidemics occurring every 3-5 years. The last pertussis epidemic years in California were 2010 and 2014, when more than 9,000 and 11,000 cases were reported, respectively; the next pertussis epidemic is anticipated in 2018 or 2019.

To confer the most protection to infants, the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) recommends that pregnant women should receive Tdap as soon as possible between 27-36 weeks gestation. This is for EACH pregnancy, regardless of past Tdap immunizations. Postpartum immunization is not optimal as it does not provide direct antibody protection to the infant. If you are currently unable to vaccinate on-site California Department of Public Health (CDPH) recommends that you:

1. Strongly consider stocking Tdap vaccinations at your site
2. Make a strong recommendation and referral for your patient to receive Tdap vaccination
3. Assist patients in locating a local immunization provider/clinic that is covered by their insurance
4. Ensure patients' ability to travel to the provider/clinic and that they will administer Tdap to your patient
5. Provide patients with a prescription
6. Follow-up at subsequent appointments to ensure that your patient received Tdap vaccination
7. Document recommendation and receipt of Tdap vaccine or patient declination (if applicable) in the medical records of all prenatal patients

Like many respiratory illnesses, pertussis spreads by coughing and sneezing while in close contact with others. The CDC recommends practicing good respiratory hygiene to prevent the spread of respiratory illnesses.

- Cover mouth and nose with a tissue when coughing or sneezing.
- Put used tissue in the waste basket.
- Cough or sneeze into upper sleeve or elbow, not in their hands, if no tissue is available.
- Wash hands often with soap and water for at least 20 seconds.
- Use an alcohol-based hand rub if soap and water are not available.

You play a crucial role in helping keep pregnant women and their newborns healthy. Assuring your patients are protected by recommended vaccines is key. Thank you for all your work to protect our community.

Most Sincerely,

Julie Vaishampayan, MD, MPH
Public Health Officer

Provide the best prenatal care to prevent pertussis



Strategies for healthcare professionals



Pertussis is on the rise and outbreaks are happening across the United States. In recent years, up to 1,450 infants have been hospitalized and about 10 to 20 have died each year in the United States due to pertussis. Most of these deaths are among infants who are too young to be protected by the childhood pertussis vaccine series that starts when infants are 2 months old.

These first few months of life are when infants are at greatest risk of contracting pertussis and having severe, potentially life-threatening complications from the infection. To help protect babies during this time when they are most vulnerable, women should get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine during **each** pregnancy. A strong recommendation from you may ultimately be what most influences whether or not your patients' newborns are protected against pertussis.

Strongly recommend Tdap to your patients during the 3rd trimester of each pregnancy.

5 Facts about Tdap and Pregnancy

1. Tdap during pregnancy provides the best protection for mother and infant.

- Recommend and administer or refer your patients to receive Tdap during every pregnancy.
- Optimal timing is between 27 and 36 weeks gestation to maximize the maternal antibody response and passive antibody transfer to the infant.
- Fewer babies will be hospitalized for and die from pertussis when Tdap is given during pregnancy rather than during the postpartum period.

2. Postpartum Tdap administration is NOT optimal.

- Postpartum Tdap administration does not provide immunity to the infant, who is most vulnerable to the disease's serious complications.
- Infants remain at risk of contracting pertussis from others, including siblings, grandparents, and other caregivers.
- It takes about 2 weeks after Tdap receipt for the mother to have protection against pertussis, which means the mother is still at risk for catching and spreading the disease to her newborn during this time.

3. Cocooning alone may not be effective and is hard to implement.

- The term "cocooning" means vaccinating anyone who comes in close contact with an infant.
- It is difficult and can be costly to make sure that everyone who is around an infant is vaccinated.

4. Tdap should NOT be offered as part of routine preconception care.

- Protection from pertussis vaccines does not last as long as vaccine experts would like, so Tdap is recommended during pregnancy in order to provide optimal protection to the infant.
- If Tdap is administered at a preconception visit, it should be administered again during pregnancy between 27 and 36 weeks gestation.

5. Tdap can be safely administered earlier in pregnancy if needed.

- Pregnant women should receive Tdap anytime during pregnancy if it is indicated for wound care or during a community pertussis outbreak.
- If Tdap is administered earlier in pregnancy, it should not be repeated between 27 and 36 weeks gestation; only one dose is recommended during each pregnancy.

Resources about Tdap and Pregnancy for Healthcare Professionals

Get Reimbursed for Tdap Vaccination

Coding and billing are known barriers to administering vaccines during pregnancy. Correct coding enables an office to report these activities to third-party payers and receive appropriate reimbursement for these services.

- ACOG's Tdap Toolkit provides coding and billing information for Tdap: www.acog.org/TdapToolkit

Get Vaccine Referral Tips

Not all clinicians are able to stock and administer Tdap or influenza vaccines in their office.



- Making a Strong Vaccine Referral to Pregnant Women fact sheet offers tips to increase patient follow through for referrals:

www.cdc.gov/pertussis/pregnant/hcp

Read the Current Recommendations

Advisory Committee on Immunization Practices:
www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm

American College of Obstetricians and Gynecologists:
www.acog.org/TdapCommitteeOpinion

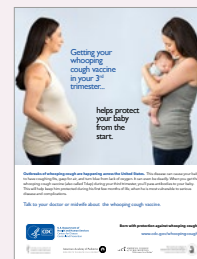
American College of Nurse-Midwives:
<http://www.midwife.org/Immunization-in-Pregnancy-and-Postpartum>

Stay up to date on the studies that support the safe and effective use of the Tdap vaccine in pregnant women at www.cdc.gov/pertussis/pregnant/research.html

Get Free Materials for Your Patients

The following resources help explain the importance of and health benefits behind the Tdap recommendation. They are free to download and ready for color or black and white printing and reproduction. English and Spanish language versions are available.

Posters/Print Ads



English



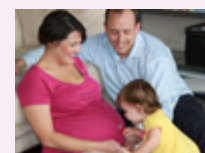
Spanish

Q&A Fact Sheet



You can start protecting your baby from whooping cough before birth

Informational Article for Patient Newsletters and Websites



Record High Cases of Whooping Cough: Vaccinate to Protect



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention



American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

AMERICAN COLLEGE
of NURSE-MIDWIVES
With women, for a lifetime®

The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS



www.cdc.gov/whoopingcough

Pertussis (Whooping Cough): Questions and Answers

Information about the disease and vaccines

What causes pertussis?

Pertussis, commonly known as whooping cough, is caused by a bacterium, *Bordetella pertussis*.

How does pertussis spread?

Pertussis is spread through the air by infectious droplets and is highly contagious.

How long does it take to show signs of pertussis after being exposed?

The incubation period of pertussis is commonly 7 to 10 days, with a range of 4–21 days.

What are the symptoms of pertussis?

Pertussis disease can be divided into three stages:

Catarrhal stage: can last 1–2 weeks and includes a runny nose, sneezing, low-grade fever, and a mild cough (all similar symptoms to the common cold).

Paroxysmal stage: usually lasts 1–6 weeks, but can persist for up to 10 weeks. The characteristic symptom is a burst, or paroxysm, of numerous, rapid coughs. At the end of the cough paroxysm, the patient can suffer from a long inhaling effort that is characterized by a high-pitched whoop (hence the name, "whooping cough"). Infants and young children often appear very ill and distressed, and may turn blue and vomit. "Whooping" does not necessarily have to accompany the cough.

Convalescent stage: usually lasts 2–6 weeks, but may last for months. Although the cough usually disappears after 2–3 weeks, paroxysms may recur whenever the patient suffers any subsequent respiratory infection. The disease is usually milder in adolescents and adults, consisting of a persistent cough similar to that found in other upper respiratory infections. However, these individuals are still able to transmit the disease to others, including unimmunized or incompletely immunized infants.

How serious is pertussis?

Pertussis can be a very serious disease, especially for infants. Infants (6 months of age and younger) are the children most likely to die from this disease. Rates of hospitalization and complications increase with decreasing age. The breathing difficulties associated with this disease can be very distressing and frightening for the patient and his or her family.

Although adults are less likely than infants to become seriously ill with pertussis, most make repeat-

ed visits for medical care and miss work, especially when pertussis is not initially considered as a reason for their long-term cough. In addition, adults with pertussis infection have been shown to be a frequent source of infection to infants with whom they have close contact.

What are possible complications from pertussis?

Younger patients have a greater chance of complications from pertussis than older patients. The most common complication is secondary bacterial infection, which is the cause of most pertussis-related deaths. Pneumonia occurs in one out of 20 cases; this percentage is higher for infants younger than age 6 months.

Infants are also more likely to suffer from such neurologic complications such as seizures and encephalopathy, probably due to the reduction of oxygen supply to the brain. Other less serious complications include ear infection, loss of appetite, and dehydration.

Adults with pertussis can have complications such as pneumonia (up to 5% of cases) and rib fracture from coughing (up to 4% of cases). Other reported side effects include (among others), loss of consciousness, female urinary incontinence, hernias, angina, and weight loss.

How do I know if my child has pertussis?

The diagnosis of pertussis is usually made based on its characteristic history and physical examination. A laboratory test may be done, which involves taking a specimen from the back of the patient's throat (through the nose).

Is there a treatment for pertussis?

Antibiotics are necessary in treating pertussis cases. The drug of choice is usually a form of erythromycin that is also given to all household and other close contacts of the patient to minimize transmission, regardless of age and vaccination status.

Patients also need supportive therapy such as bed rest, fluids, and control of fever.

All close contacts younger than seven years of age should complete their DTaP vaccine series if they have not already done so. If they have completed their primary four dose series, but have not had a

dose from age 4 to 6 years, they should be given a booster dose if it has been at least 6 months since the last dose. People age 10 years and older should receive a dose of Tdap if they haven't received it already.

How long is a person with pertussis contagious?

People with pertussis are most infectious during the catarrhal period and during the first two weeks after onset of the cough (approximately 21 days).

How common is pertussis in the United States?

Before a vaccine against pertussis was available, pertussis (whooping cough) was a major cause of childhood illness and death in the United States. From 1940–1945, over one million cases of pertussis were reported. With the introduction of a vaccine in the late 1940s, the number of reported pertussis cases in the U.S. declined from approximately 200,000 a year in the pre-vaccine era to a low of 1,010 cases in 1976.

Since the 1980s, the number of cases of pertussis has increased, especially among babies younger than 6 months and teenagers. In recent years, several states have reported a significant increase in cases, with outbreaks of pertussis reaching epidemic levels in some states. Many infants have died from whooping cough during this epidemic.

Can you get pertussis more than once?

Reinfection appears to be uncommon but does occur. With natural infection, immunity to pertussis will likely wane as soon as seven years following disease; reinfection may present as a persistent cough, rather than typical pertussis.

When did vaccine first become available for diphtheria, tetanus, and pertussis?

The first inactivated toxin, or toxoid, against diphtheria was developed around 1921, but it was not widely used until the 1930s. In 1924, the first tetanus toxoid (inactivated toxin) was produced and was used successfully to prevent tetanus in the armed services during World War II. The first pertussis vaccine was developed in the 1930s and was in widespread use by the mid-1940s, when pertussis vaccine was combined with diphtheria and tetanus toxoids to make the combination DTP vaccine. A series of 4 doses of whole-cell DTP vaccine was quite (70–90%) effective in preventing serious pertussis disease; however, up to half of the children who received the vaccine developed local reactions such as redness, swelling, and pain at the injection site. In 1991, concerns about safety led to the development

of more purified (acellular) pertussis vaccines that are associated with fewer side effects. These acellular pertussis vaccines have replaced the whole cell DTP vaccines in the U.S.

In 2005, two new vaccine products were licensed for use in adolescents and adults that combine the tetanus and diphtheria toxoids with acellular pertussis (Tdap) vaccine. These vaccines are the first acellular pertussis-containing vaccines that make it possible to vaccinate adolescents and adults against pertussis.

How are vaccines made that prevent diphtheria, tetanus and pertussis?

These vaccines are made by chemically treating the diphtheria, tetanus, and pertussis toxins to render them nontoxic yet still capable of eliciting an immune response in the vaccinated person. They are known as “inactivated” vaccines because they do not contain live bacteria and cannot replicate themselves, which is why multiple doses are needed to produce immunity.

What's the difference between all the vaccines containing diphtheria and tetanus toxoids and pertussis vaccine?

It's like alphabet soup! Here is a listing of the various products:

- DTaP: Diphtheria and tetanus toxoids and acellular pertussis vaccine; given to infants and children ages 6 weeks through 6 years. In addition, three childhood combination vaccines include DTaP as a component.
- DT: Diphtheria and tetanus toxoids, without the pertussis component; given to infants and children ages 6 weeks through 6 years who have a contraindication to the pertussis component.
- Tdap: Tetanus and diphtheria toxoids with acellular pertussis vaccine; given to adolescents and adults, usually as a single dose; the exception is pregnant women who should receive Tdap during each pregnancy.
- Td: Tetanus and diphtheria toxoids; given to children and adults ages 7 years and older. Note the small “d” which indicates a much smaller quantity of diphtheria toxoid than in the pediatric DTaP formulation.

How are these vaccines given?

The DTaP and DT preparations are all given as an injection in the anterolateral thigh muscle (for infants and young toddlers) or in the deltoid muscle (for older children and adults). Tdap and Td are given

in the deltoid muscle for children and adults age 7 years and older.

Who should get these vaccines?

All children, beginning at age 2 months, and all adults need protection against these three diseases—diphtheria, tetanus, and pertussis (whooping cough). Routine booster doses are also needed throughout life.

How many doses of vaccine are needed?

The usual schedule for infants is a series of four doses of DTaP given at 2, 4, 6, and 15–18 months of age. A fifth shot, or booster dose, is recommended between age 4 and 6 years, unless the fourth dose was given late (after the fourth birthday).

For people who were never vaccinated or who may have started but not completed a series of shots, a 3-dose series of Td should be given with 1 to 2 months between dose #1 and #2, and 6 to 12 months between dose #2 and #3. One of the doses, preferably the first, should also contain the pertussis component in the form of Tdap.

Because immunity to diphtheria and tetanus wanes with time, boosters of Td are needed every ten years.

When adolescents and adults are scheduled for their routine tetanus and diphtheria booster, should they get vaccinated with Td or Tdap?

Immunization experts recommend that the first dose of Tdap be given to all adolescents at age 11–12 years as a booster during the routine adolescent immunization visit if the adolescent has finished the childhood DTaP schedule and has not already received a dose of Td or Tdap. If a child age 7–10 years did not complete a primary series in childhood, a dose of Tdap may be given earlier as part of the catch-up vaccinations.

All adults should receive a single dose of Tdap as soon as feasible. Then, subsequent booster doses of Td should be given every ten years. Pregnant teens and women should receive Tdap during each pregnancy. Adolescents and adults who have recently received Td vaccine can be given Tdap without any waiting period.

If someone experiences a deep or puncture wound, or a wound contaminated with dirt, an additional booster dose may be given if the last dose was more than five years ago. This could be a dose of Td or Tdap, depending on the person's vaccination history. It is important to keep an up-to-date record of all immunizations so that repeat doses don't be-

come necessary. Although it is vital to be adequately protected, receiving more doses than recommended can lead to increased local reactions, such as painful swelling of the arm.

Who recommends the use of these vaccines?

The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), and the American College of Physicians (ACP) all recommend this vaccine.

What side effects have been reported with these vaccines?

Local reactions, such as fever, redness and swelling at the injection site, and soreness and tenderness where the shot was given, are not uncommon in children and adults. These minor local and systemic adverse reactions are much less common with acellular DTaP vaccine; however, a determination of more rare adverse effects can only be made when additional data are available following extended use of DTaP.

Side effects following Td or Tdap in older children and adults include redness and swelling at the injection site (following Td) and generalized body aches, and tiredness (following Tdap). Older children and adults who received more than the recommended doses of Td/Tdap vaccine can experience increased local reactions, such as painful swelling of the arm. This is due to the high levels of tetanus antibody in their blood.

How effective are these vaccines?

After a properly spaced primary series of DTaP or Td/Tdap, approximately 95% of people will have protective levels of diphtheria antitoxin and 100% will have protective levels of tetanus antitoxin in their blood. However, antitoxin levels decrease with time so routine boosters with tetanus and diphtheria toxoids are recommended every 10 years. Estimates of acellular pertussis vaccine efficacy range from 80% to 85%—a level believed to be far more efficacious than the previously-used whole cell pertussis vaccine.

Can a pregnant woman receive Tdap vaccine?

Yes. All pregnant women should receive Tdap during each pregnancy, preferably between 27 and 36 weeks' gestation. Because infants are not adequately protected against pertussis until they have received at least 3 doses of DTaP, it is especially important that all contacts (family members, caregivers) of infants younger than age 12 months are vaccinated with Tdap. If a new mother hasn't been vaccinated with

Tdap, she should receive it before hospital discharge, even if she is breastfeeding.

Who should not receive these vaccines?

Generally, any person who has had a serious allergic reaction to a vaccine component or a prior dose of the vaccine should not receive another dose of the same vaccine. People who had a serious allergic reaction to a previous dose of DTaP or Tdap vaccine should not receive another dose.

Certain rare adverse events following pertussis vaccination usually serve as a precaution against receiving further doses. Such events include a temperature of 105°F or higher within two days, collapse or shock-like state within two days, persistent crying for more than three hours within two days, or convulsions within three days. Even if one of these precautions exists, there may be occasions when the benefit of immunization outweighs the risk (for example, during a community-wide outbreak of pertussis). A person who developed one of these adverse events after pediatric DTaP vaccine may receive Tdap as an adolescent or adult.

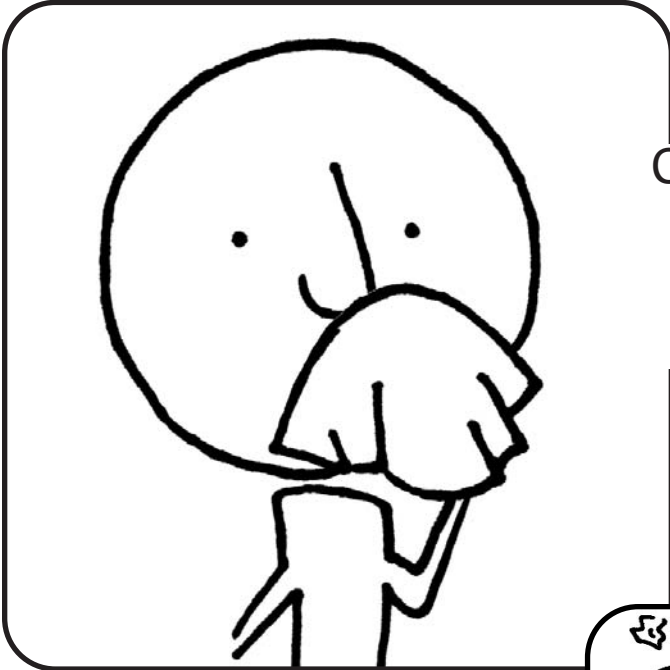
A person with a recognized, possible, or potential neurologic condition should delay receiving DTaP or Tdap vaccine until the condition is evaluated, treated, and/or stabilized. Although DTaP vaccine does not cause neurological disorders, receiving the vaccine can cause an already-present underlying condition to show itself.

Can the vaccine cause the disease?

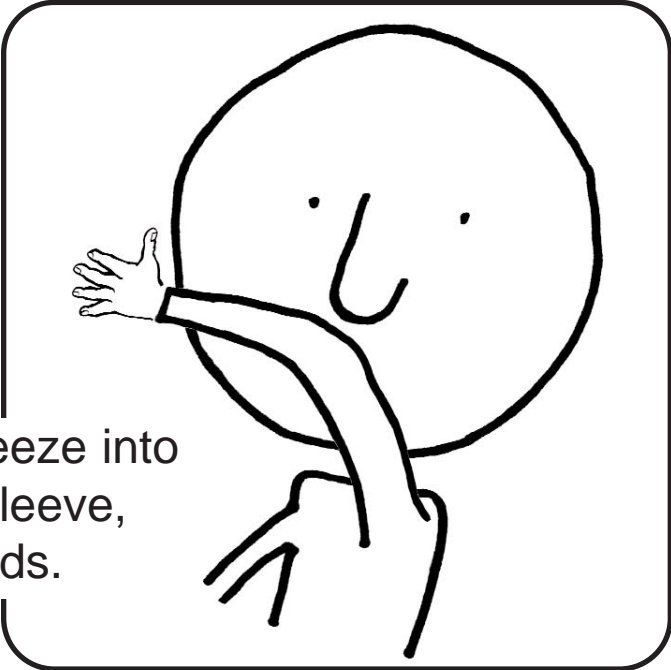
No.

Stop the spread of germs that make you and others sick!

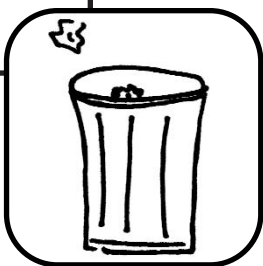
Cover your Cough



Cover your mouth
and nose with a
tissue when you
cough or sneeze
or
cough or sneeze into
your upper sleeve,
not your hands.

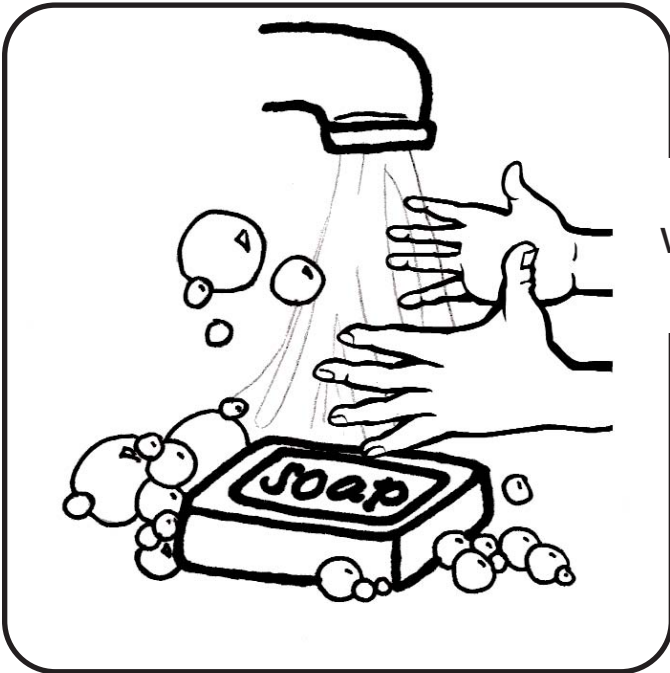


Put your used tissue in
the waste basket.



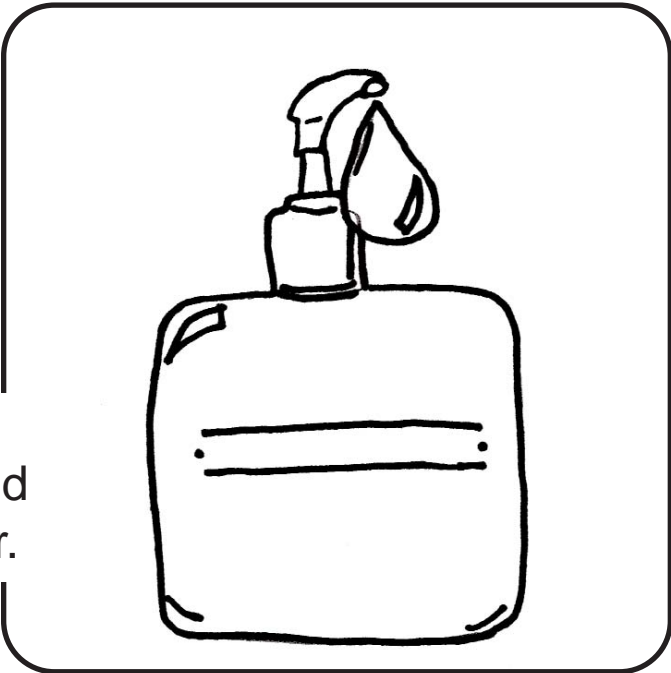
Clean your Hands

after coughing or sneezing.



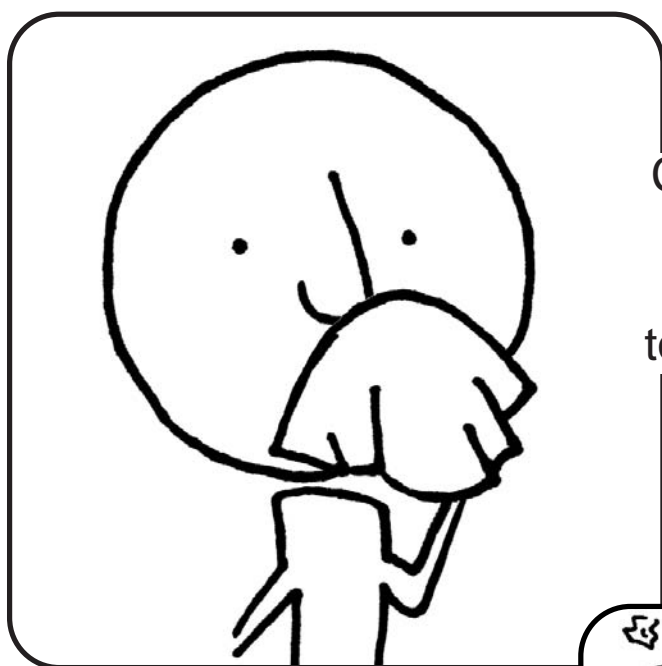
Wash hands
with soap and
warm water

or
clean with
alcohol-based
hand cleaner.



¡Pare la propagación de gérmenes que lo enferman a usted y a otras personas!

Cubra su tos



Cubra su boca y
nariz con un
kleenex cuando
tosa o estornude

o
tosa o estornude en la
manga de su camisa,
no en sus manos.

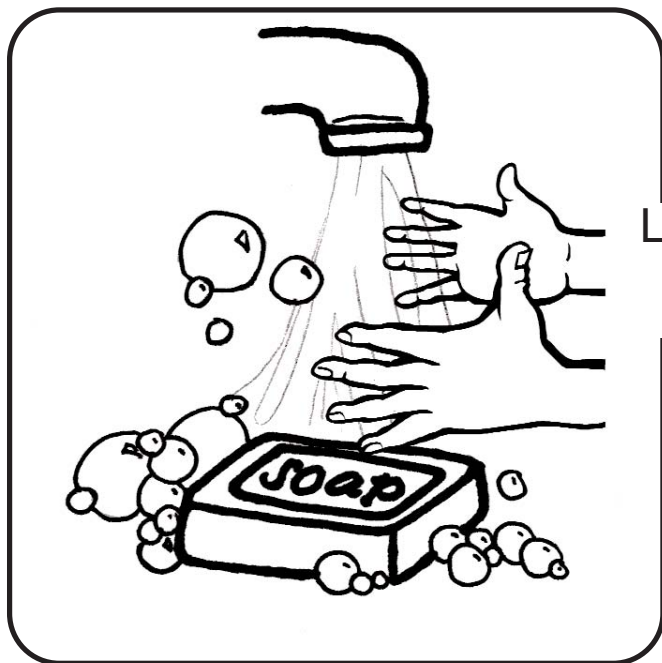


Deseche el kleenex
sucio en un basurero.



Lávese las manos

después de toser o estornudar.



Lávese con agua
tibia y jabón

o
límpiase con un
limpiador de manos
a base de alcohol.

