

Anthrax Emergency: How to Take Doxycycline to Prevent Anthrax Fact Sheet for Recipients

During an anthrax emergency, you will be given a medicine called **doxycycline** (DOX-i-SYE-kleen) because you **may** have breathed in anthrax germs. These germs can be **deadly**. Taking certain medicines called antibiotics (like doxycycline) reduces your chance of getting sick and dying. Until officials know for sure who breathed in the germs, it is important to start taking this medicine as soon as possible after the emergency starts. Public health officials will provide information on who should get the medicine. If you have questions, talk to a doctor or healthcare provider about taking doxycycline.

People who may have breathed in anthrax germs should take the medicine twice a day for 60 days. Most people will be given a 10-day supply to start. Public health officials will tell you whether you need more and how to get it. To reduce your chance of getting sick, avoid stopping early. If you already started taking another medicine (like ciprofloxacin) to prevent anthrax and are now being switched to doxycycline, it is important that you take doxycycline for as long as you are directed.

What is anthrax?

Anthrax is a serious disease that can be deadly. You can get sick if you breathe in the anthrax germs. **You cannot get anthrax from another person who has anthrax.**

- Early on, you could have any of the following symptoms: fever, chills, tiredness, cough or headache.
- Later, you could develop shortness of breath, chest discomfort, confusion or nausea. Symptoms usually start within 7 days of breathing in anthrax germs, but can start within 24 hours or take up to 7 weeks. See a doctor right away if you have symptoms. **If you take doxycycline as directed and begin to feel sick anyway or show any of the symptoms mentioned above, get medical care right away.**

What is doxycycline?

Doxycycline is a prescription antibiotic approved by the Food and Drug Administration (FDA) to prevent anthrax. FDA is allowing certain uses of doxycycline, including its use without a prescription, during an anthrax emergency. If you were given doxycycline that has an expired date on the container, please note that FDA is allowing the use of certain lots of doxycycline beyond the expiration date on the container based on FDA's scientific review. For more information, go to the FDA website at www.fda.gov (search for "doxycycline expiration").

Who should **NOT** take doxycycline?

Do not take doxycycline if you have had a severe allergic reaction to doxycycline or similar medicines known as tetracyclines. A severe reaction may include closing of the throat, trouble breathing, or swelling of the lips, tongue or face. Talk to your doctor or public health official about other medicines available to prevent anthrax.

How do I take doxycycline or give doxycycline to my child?

For children weighing 76 pounds (35 kg) or more and adults aged 18 years or older:

- Take 1 pill (100 mg) in the **morning** with a full glass of water (with or without food or milk) **and**
- Take 1 pill (100 mg) in the **evening** with a full glass of water (with or without food or milk).
 - Morning and evening doses should be taken 12 hours apart each day for as long as directed.
 - Doxycycline works just as well whether you take it with or without food or milk.
 - If you cannot swallow pills, follow the instructions on [crushing and mixing doxycycline tablets with food](#) (which can also be found by searching "doxycycline crushing instructions" on www.cdc.gov).

For children weighing less than 76 pounds (35 kg), the dose is determined based on weight:

- If you received liquid doxycycline, follow instructions you were given. To prepare liquid doxycycline at home:
 - If you received bottles of doxycycline powder, follow the [instructions for doxycycline oral suspension](#).
 - If you received doxycycline tablets, follow instructions for [crushing and mixing doxycycline tablets with food](#).
- Take the same amount in the morning and evening (12 hours apart) each day for as long as directed.
- Do not skip doses. However, if you miss a dose, **do NOT take 2 doses at once**. Take the next dose as scheduled.
- Keep the pills dry. Store doxycycline pills and liquid at room temperature (between 68–77°F or 20–25°C).
- If you get an upset stomach when you take the medicine, take it with food.
- Keep doxycycline away from children and pets. Call the poison control center if children or pets ingest the medicine by accident (1-800-222-1222).

How long do I take doxycycline for?

If you started with a different antibiotic to prevent anthrax (such as ciprofloxacin or amoxicillin) and now switching to doxycycline, you will need to take doxycycline until you complete a **total of 60 days** of antibiotics. If you are also receiving anthrax vaccine (BioThrax®), it is important to take doxycycline for as long as your healthcare provider tells you to. Healthy adults 18 to 65 years of age can stop taking antibiotics 42 days after the first dose of the anthrax vaccine or 2 weeks after the last dose, whichever happens later. Older adults, pregnant women, and people with certain conditions should take antibiotics for 60 days.

What are common side effects of doxycycline?

KEEP taking doxycycline if you have mild nausea, vomiting and/or diarrhea, a mild sunburn or a vaginal yeast infection. If these symptoms become severe, talk to your doctor.

What are possible serious side effects of doxycycline?

Serious side effects from doxycycline are rare. **STOP** taking doxycycline and get medical care right away (go to the emergency room or call 911) if you have:

- Closing of the throat or trouble breathing
- Swelling of the lips, tongue or face
- Severe itching or rash, especially hives and wheals (red, swollen bumps on the skin)
- Severe stomach cramps with fever or bloody or watery diarrhea
- Yellowing of the eyes or skin or dark brown or tea-colored urine
- Pain when swallowing (esophageal ulcers)
- Unusual bleeding or bruising
- Severe headaches, dizziness or double vision

What if I am taking other medicines?

- Talk to your doctor if you are on a blood thinner like warfarin or seizure medicine like phenytoin. Doxycycline may affect how much of these medicines you need.
- Doxycycline might not work as well when taken with some medicines. Take doxycycline at least 2 hours before or 2 hours after taking:
 - Multivitamins, supplements or antacids with aluminum, calcium, iron or magnesium
 - Helidac, Kaopectate, Pepto-Bismol or other products with bismuth subsalicylate used for indigestion, nausea or diarrhea

What else do I need to know about doxycycline?

- It can cause your skin to be more sensitive to the sun. Use sunscreen and cover exposed skin.
- It can slow bone growth in children.
- Birth control pills may not work as well while you take doxycycline. Use another form of birth control until you finish taking all of your doxycycline.
- Long-term use can cause discolored teeth or poor tooth enamel in children younger than 8 years and in infants whose mothers took doxycycline during the last half of pregnancy or while nursing.
- Tell your doctor if you are or become pregnant or are breastfeeding.
- If you receive anthrax vaccine (BioThrax®), your healthcare provider will tell you how long you need to take doxycycline.

What other antibiotics can I take instead of doxycycline?

Public health officials will tell you if other antibiotics (such as ciprofloxacin, levofloxacin or amoxicillin) are available. The risks and benefits of other available antibiotics will be explained in separate instructions.

Risk-Benefit Statement

Although doxycycline has some potential and serious side effects, the expected benefit of doxycycline in helping to prevent disease and death associated with anthrax exposure outweighs these risks.

How do I report side effects or medication errors?

Tell your doctor or healthcare provider right away and report side effects or medication errors to **FDA MedWatch** at www.fda.gov/medwatch or 1-800-FDA-1088.

A federal program called the Countermeasures Injury Compensation Program (CICP) may help pay for costs of medical care and other specific expenses of certain people who have been seriously injured by some medicines or vaccines. To learn more about this program, visit www.hrsa.gov/cicp or call 1-855-266-2427 (toll-free).

Space Reserved for State/Local Public Health Information

DRAFT

At-Home Mixing Instructions for Doxycycline Oral Suspension (60 mL bottle with 25mg/5mL)

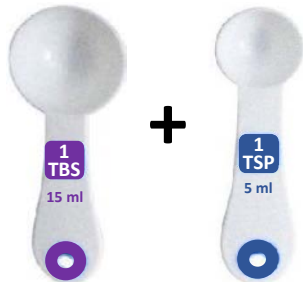
These instructions show you how to prepare any 60 mL bottle of doxycycline (25mg/5mL) regardless of what manufacturer's name is on the bottle. The label on your doxycycline powder bottle may tell you to measure a different volume of water from what is recommended in these instructions. This small difference will not affect how well the medicine works.

Step 1. Gather the supplies you need.

- Bottle of Doxycycline for Oral Suspension (60 mL bottle with 25mg/5mL)
- Drinkable water (50 mL of distilled or bottled water)
 - If you do not have access to distilled or bottled water, you may use drinkable tap water
- Tools to accurately measure and pour 50 mL of water:
 - Common household kitchen tools like a tablespoon **and** teaspoon **OR** a measuring container with a marking for 50 milliliters (mL). Clean thoroughly before use.
 - A bowl or cup with a spout to hold the measured water and help pour it into the doxycycline powder bottle **OR** a funnel to pour the measured water into the powder bottle. Clean thoroughly before use.

Examples of Measuring Tools to Use to Measure 50 mL of Water

Tablespoon and teaspoon
measuring spoons



+

OR

Baby bottle or measuring cup
with a 50 mL marking*



*If using a baby bottle to measure water, be sure the bottle is clean and contains no milk.

Note: The baby bottle shown is only an option for measuring the water for mixing, **not** for giving the medicine to a child.

Step 2. Measure out 50 mL of drinkable water and pour the water into a container.

- **Option A:** If using a tablespoon and teaspoon to measure the water, measure 3 TABLEspoons + 1 TEAspoon of water and add to a container. You now have 50 mL of water.



OR

- **Option B:** If using a baby bottle or measuring container with a 50 mL marking, fill the baby bottle or container with 50 mL of water.

Step 3. Add water in two parts to the doxycycline powder bottle and mix.

1. Making sure the cap is tightly closed, turn the doxycycline bottle upside down and back upright to help loosen the powder. Lightly tap the sides and bottom of the bottle to help prevent the powder from sticking to the sides when water is added.

Open the cap and remove the inner seal, if present.

2. Add about half of the measured water (from **step 2**) to the doxycycline powder bottle.
3. Screw the cap completely back on the doxycycline bottle. Shake vigorously for about 15 seconds.
4. Remove the cap of the doxycycline bottle again and add the rest of the water. Screw the cap completely back on the doxycycline bottle. Shake vigorously again (about 15 seconds). Make sure all the powder gets mixed with the water. There should be no visible dry powder.
 - *If some powder sticks to the sides or does not mix completely, tap the bottle firmly using the palm of your hand until no clumps are visible. **Do not** put a utensil into the bottle to stir since this doesn't help to mix and may cause some medicine to be removed. Since the powder doesn't dissolve completely in water, shake the bottle before giving each dose.*

In this bottle, you now have well-mixed (reconstituted) doxycycline liquid ready for use.

Step 4. Write the expiration date and store the reconstituted doxycycline bottle.

1. Figure out the expiration date by counting 14 days from the day you mixed the powder with water (reconstituted) and write that date on the bottle. For example, if you mixed the doxycycline powder with water on January 1, write January 15 on the bottle.

Do not use any medicine remaining in the bottle after the expiration date. Start a new bottle and follow the mixing instructions above. Throw away the expired bottle.

2. Store the mixed bottle at room temperature out of the reach of children and pets. Keep the bottle tightly closed.

Step 5. Give the correct dose.

1. **Shake** the bottle very well before each dose.
2. In the table below, follow the row of your child's weight to find the correct dose (mL). This is one dose.
3. Use the oral dosing syringe or medicine cup provided with the medicine to measure and give the correct dose to your child. Give this amount once **every 12 hours** (once in the morning AND once at night) each day for as long as directed.

Dosage using Doxycycline Bottle 25 mg/5 mL

Weight*	Amount of liquid doxycycline to measure*
5 pounds or less	1 mL
6 to 10 pounds	2 mL
11 to 15 pounds	3 mL
16 to 20 pounds	4 mL
21 to 25 pounds	5 mL
26 to 30 pounds	6 mL
31 to 35 pounds	7 mL

*If your child weighs more than 35 pounds, ask a healthcare provider how much to give.

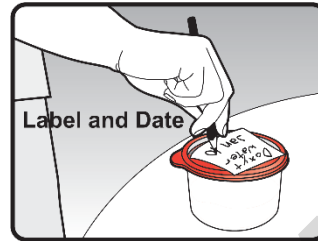
**Weight range dosing based on 2.2 mg/kg derived dose calculation

What should you do with any leftover doxycycline and water mixture remaining in the first bowl?

Throw it away if your child weighs 51 pounds or more (or is 6 years or older). You do NOT have enough left over to make another dose.

Keep it if your child weighs 50 pounds or less (or is 5 years or younger). You will have enough left over to make another dose.

- **Store** the **doxycycline and water mixture** in a covered bowl or cup at room temperature (between 68–77°F or 20–25°C) for up to 24 hours.
- **Write** the date, time and container contents on a label.
- **Keep** the mixture in a safe place, out of the reach of children or pets.
- **Throw away** any unused mixture after 24 hours and make a new doxycycline and water mixture for the next dose.



What should you know about side effects?

- Do not take doxycycline if you are allergic to an ingredient in doxycycline hyclate or any tetracycline antibiotics.
- Get emergency help if you have any signs of an allergic reaction, including hives, difficulty breathing or swelling of your face, lips, tongue or throat.
- Doxycycline may cause diarrhea, skin reaction to the sun, loss of appetite, nausea and vomiting. Refer to “Anthrax Emergency: How to Take Doxycycline to Prevent Anthrax” instructions for more information on possible side effects.
- Report any reaction to doxycycline to MedWatch at www.fda.gov/medwatch or 1-800-FDA-1088.



In an Emergency: How to Prepare Doxycycline Hyclate for Children and Adults Who Cannot Swallow Pills

During a public health emergency, you might need to prepare emergency doses of doxycycline for children and adults who cannot swallow pills. This pamphlet shows you how to mix doxycycline hyclate 100 mg tablets with food or drink.

Follow the instructions below to prepare and give your child the **right amount** of medicine **every 12 hours** (once in the morning and once at night) **each day**, as long as directed. Use the same directions for adults who cannot swallow pills.



Get the supplies you need.

You will need these items to make doses of doxycycline for children and adults who cannot swallow pills:

- 1 doxycycline hyclate **tablet** (100 mg)
- 1 metal teaspoon
- 1 oral syringe or medicine spoon (if available)
- 2 small bowls
- small amount of drinking water (4 teaspoons or 20 mL)
- 1 of these foods or drinks to make the crushed doxycycline taste better*:
 - milk, including breast milk and formula for infants
 - chocolate milk
 - chocolate pudding
 - apple juice mixed with 2 to 4 teaspoons of sugar

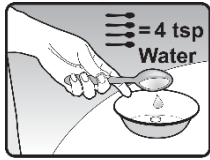


*Doxycycline works just as well whether you take it with or without food or milk.

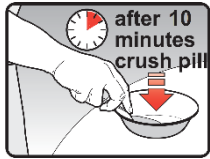
A [supplemental video](#) of these instructions is available by searching “doxycycline crushing instructions” on www.cdc.gov



B Soak the tablet in water and crush it.








1. Put 1 doxycycline hyclate tablet in a small bowl.
2. Add 4 teaspoons (20 mL) of water to the same bowl.
3. Let the tablet **soak** in the water for at least **10 minutes** to soften it.
4. **Crush** the tablet with the back of the metal spoon until you can't see any pieces of the tablet in the water.
5. Stir the tablet and water to mix it well.



You have now made the doxycycline and water mixture.

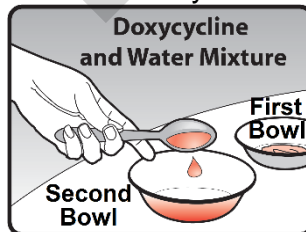
C Measure the right amount of doxycycline.

1. **Find your child's weight** on the chart below.
*Weight is better, but if you don't know how much your child weighs, find your child's **age** on the chart.*
2. Follow the row of your child's weight or age across to the column "**Amount of Doxycycline & Water Mixture to Measure.**"

Weight	Age	Amount of Doxycycline & Water Mixture to Measure*
12 pounds or less	Less than 1 month	½ teaspoon (2.5 mL) 
13 to 25 pounds	1 to 11 months	1 teaspoon (5 mL) 
26 to 50 pounds	1 to 5 years	2 teaspoons (10 mL) 
51 to 75 pounds	6 to 8 years	3 teaspoons (15 mL) 
76 pounds or more (Adult Dose)	9 years or older	4 teaspoons (20 mL) 

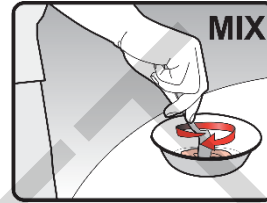
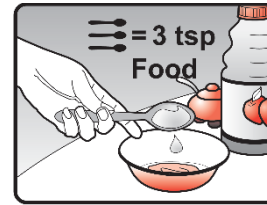
*Weight-range dosing based on 2.2 mg/kg derived dose calculation.

3. **Measure** the amount of doxycycline and water mixture for your child's weight or age from the first bowl.
*For a ½ **teaspoon** dose, fill the teaspoon halfway or use an oral syringe (if available). It is better to give a little more of the medicine than not enough.*
4. Place this amount into the **second bowl**.
This is **one dose** that should be mixed with food or drink.



For children weighing 76 pounds or more and adults who cannot swallow pills, **use all** of the doxycycline and water mixture in the first bowl (4 teaspoons); the **entire contents of the first bowl** makes **one dose** that should be mixed with food or drink.

D Mix the dose with food or drink.



1. **Mix the dose** (measured amount of doxycycline and water mixture) in the second bowl with **3 teaspoons** of one of the following:
 - Milk, including breast milk and formula for infants
 - Chocolate milk
 - Chocolate pudding**OR**
 - Apple juice mixed with 2 to 4 teaspoons of sugar

You now have one dose, mixed with food or drink.

2. Stir well before giving it to your child.

E Give the dose.

1. Give your child **all** of the doxycycline, water and food mixture from the second bowl. Make sure your child swallows all of it. This is one dose.
2. Do this once **every 12 hours** (once in the morning AND once at night) **each day** for as long as directed.

