

ESBL (Extended-spectrum Beta-Lactamase)-Producing Bacteria

What are ESBL?

ESBL, which stands for **extended-spectrum beta-lactamase** [LAK-tah-meys], are a group of bacteria that break down and destroy most antibiotics. This makes it very difficult to treat infections.

Some people carry the bacteria (it is inactive or “sleeping”). They are not sick and do not need treatment, but they can spread the bacteria to others and make them sick.

ESBLs can cause urinary tract infections (affecting the kidney and bladder), pneumonia (affecting the lungs), wound infections, or life-threatening bloodstream infections.

How are ESBL spread?

ESBLs are spread by contact with the bacteria when proper handwashing is not done before touching:

- Someone who either carries the bacteria or has the infection.
- Surfaces that an infected person touched (such as toilets or furniture)

What are the symptoms?

Symptoms of ESBL can differ from patient to patient, depending on where the infection occurs:

- **Urinary tract infections** cause fever, pain, and burning with urination (peeing)
- **Wound infections** cause redness and oozing from the wound
- **Bloodstream infections** cause fever, chills, confusion, and shortness of breath
- **Intestinal infections** cause fever, diarrhea, nausea or vomiting, and abdominal pain

Contact your doctor right away if you experience any of these symptoms. These infections are treated with certain antibiotics that are not resistant to the ESBL bacteria and may require a stay in the hospital.

What is an antibiotic-resistant infection?

Germ (bacteria) cause infections. Antibiotic medicines are used to treat infections because they kill germs. Over time, some germs develop the ability to survive when exposed to commonly used antibiotics.

When this happens, the infection that can no longer be cured with these antibiotics is referred to with an antibiotic-resistant bacteria name.

For example, extended-spectrum beta-lactamase is the name for a group of bacteria that have become “resistant” (no longer killed by) to most antibiotics. They do this by producing an enzyme that destroys antibiotics.

Who is most at risk?

People most at risk for exposure to and infections from ESBLs are those who:

- Have a weakened immune system or chronic illness
- Are currently or have recently been in the hospital or long-term care facility
- Have had a recent surgery
- Have a urinary catheter or other tubes or drains inserted in the body
- Have open wounds or sores
- Frequently take antibiotics
- Are exposed to environmental, animal, or food contamination
- Are elderly
- Are on hemodialysis for kidney failure or have an IV catheter or some types of feeding tubes
- Travel to regions in Asia

How can ESBL be prevented?

Good hand hygiene is probably the most effective way to prevent the spread of ESBL. In general, preventing antibiotic-resistant infections depends on:

- **Avoiding infections in the first place.** Limiting the need to take antibiotics makes it easier to avoid dangerous bacterial infections in the future.
- **Taking antibiotics only as directed.** When you don't finish a full course of antibiotics, bacteria can easily become more resistant to that antibiotic in the future.
- **Asking everyone involved in your care, including doctors, nurses, other medical staff, and visitors, to wash their hands** before touching you or any medical equipment or personal items that touch the skin (see information on page 3).

***Preventing ESBL infections* IN THE HOSPITAL**

If you are hospitalized and either have the ESBL bacteria or are actively infected, you will need to be placed in a private room with contact isolation precautions. There will be a sign on the door to let staff know what precautions are required.

YOUR HEALTHCARE PROVIDERS will do these things:

- **Clean their hands** with soap and water or with hand sanitizer **before and after** caring for each patient (see page 3).
- **Carefully clean and disinfect** all hospital rooms and medical equipment on a regular basis. Some medical equipment will be used only in your room while you are in the hospital.
- **Wear gloves and a protective gown** before entering your room and remove them before leaving.
- **Only prescribe antibiotics when necessary.**
- **Remove temporary medical devices** such as catheters and ventilators as soon as possible.
- (In some cases) Test you for ESBL bacteria early in your care.

YOUR VISITORS can do these things:

- **Clean their hands** with soap and water or with hand sanitizer **before and after** entering and leaving your room (see page 3).
- **Wear gloves and a protective gown** while in your room and if providing any care (changing a bandage, assisting with feeding or dressing, etc.). It is fine for visitors to hug, kiss, and hold a patient's hand.
- **Always use public restrooms** instead of the bathroom in your room.

YOU can do these things:

- **Take antibiotics only as prescribed.**
- **Make sure all healthcare providers clean their hands** before and after touching your body or tubes going into your body (see page 3). If they don't, ask them to do so.
- **Clean your own hands often**, especially after using the bathroom and before eating.
- **Stay in your hospital room** as much as possible. Avoid common areas, such as the cafeteria and family waiting rooms.
- **Ask lots of questions.** Make sure you understand what is being done to you and why. **Use the space on page 4 to write down your questions.**

Preventing ESBL infections AT HOME

If you are discharged from the hospital with an ESBL infection, there is only a small chance that it can be spread to others.

The most important ways to prevent spreading ESBL bacteria at home is for:

- **Everyone** in the household to:
 - Wash their hands often (see instructions at right), especially after using the toilet and before preparing food or eating
 - Never share the infected person's personal items that touch the skin, such as towels, bar soap, razors, and unwashed clothing
- The **infected person** to always wash their hands:
 - After going to the bathroom
 - When touching a catheter or wound

At home, it is not necessary to wash the infected person's clothes separately from other items or to specially clean furniture or dishes.



Hand washing with soap and water

-  1 Wet hands with warm, running water.
-  2 Apply liquid soap or use a clean bar of soap. Lather well.
-  3 Rub your hands together vigorously for at least 15 to 20 seconds. Be sure to scrub all surfaces of your hands and fingers.
-  4 Rinse well. Dry your hands with a clean or disposable towel.
-  5 Use a towel to turn off the faucet.

Hand washing with a hand sanitizer

-  1 Use an alcohol-based hand sanitizer that contains at least 60% alcohol. Apply it to the palm of your hand. Read the label to see how much to apply.
-  2 Be sure to cover all surfaces of your hands and fingers. Rub your hands together until they are dry.

People can become infected if they touch surfaces that are contaminated with germs. Healthcare providers can spread the germs if they don't wash their hands often enough. If you don't see your healthcare providers clean their hands, please ask them to do so.

