

ESBL

Extended Spectrum Beta-Lactamase producing bacteria

What are ESBLs?

ESBL stands for extended spectrum beta-lactamase-producing bacteria. These bacteria produce enzymes that can break down many common antibiotics and make them ineffective in fighting infections caused by the bacteria.

How do ESBLs spread?

The main reservoir of ESBL-producing bacteria is found on the lower digestive tract and in urine. They can spread from one person to another by direct skin-to-skin contact (e.g., unwashed hands) or indirect contact by touching surfaces contaminated with ESBL (e.g., soiled equipment, such as catheters and urinals). Touching someone with hands that are contaminated with ESBL can lead to colonization in the digestive tract of this person. It is very important to practice good hand washing, especially after caring for someone with ESBL. ESBLs are not spread through the air.

What if I am colonized with ESBLs?

ESBL colonization means the organism is living in the digestive tract or urine without causing any illness. Some people can be colonized with ESBLs for a year, and then rid them on their own. It is very important to practice good hand washing, especially after using the toilet.

Who is likely to get an ESBL infection?

An ESBL infection can occur when the bacteria enters the urinary tract, a break in the skin or in the bloodstream. Complications of ESBLs can include urinary tract infections, wound infections or pneumonia. Patients who are hospitalized or residents of a long-term care home are more at risk, as well as those who have weakened immune systems, a low functional level and those with a history of using many antibiotics. Healthy people do not usually become colonized with ESBLs.

How is ESBL treated?

ESBL infections are difficult to treat and require a combination of antibiotics which are not always effective. A physician will determine the best course of treatment.



What can be done to stop the spread of ESBLs?

1. **Practice good hand washing.** This is the most effective way to stop the spread of ESBLs.



- **Wash hands frequently** for at least 15 seconds using the 6-step method OR
 - **Use a hand sanitizer** when handwashing facilities are not available and hands are not visibly soiled. When using a hand sanitizer, apply enough to wet the entire hand and rub solution into hands until completely dry.
2. **Clean the environment.** Our environment plays a crucial role in disease spread. In addition to practicing good hand hygiene, it is important to clean and disinfect highly touched surfaces following the two-step method:
- **Step#1 - Cleaning.** Remove dirt and debris from a surface. Clean with an all-purpose detergent, water and friction, and clean from least soiled to heaviest soiled areas.
 - **Step#2 – Apply a disinfectant.** Disinfectants need to be applied to a clean surface for the correct period of time and at the correct strength to achieve proper disinfection. Disinfectants must have a Drug Identification Number (DIN); the exceptions are common household bleach and isopropyl alcohol. Always follow manufacturer’s recommendations. If you are using a bleach solution, ensure it remains wet on the surface for five minutes to allow for proper disinfection.



A 500ppm bleach solution will kill ESBL (concentration of 1:100).

To make this solution follow these steps:

- Use undiluted household bleach (5.25% or ~50,000ppm)
- Add bleach to water - do not add water to bleach

Recipes to make a 500ppm bleach solution:

- Mix ¼ cup + 2 t (50 ml) of bleach with 19 ¾ cups (5L) of water OR
- Mix 5 t (25 ml) of bleach with ~10 cups (2.5L) of water OR
- Mix 2 t (10 ml) of bleach with ~4 cups (1L) of water
- Store bleach solutions in closed, properly labelled containers, away from heat and light

Note: No special precautions are required for handling dishes or waste.

3. Clean clothes/fabric. Wash clothes/fabric separately if they are heavily soiled with feces. First rinse off feces, and then clean in a hot water cycle with soap. Dry items in the dryer with high heat if possible. Dry clean where appropriate.

4. Use antibiotics wisely. To limit the development of new antibiotic resistant organisms, antibiotics must be used properly. It is important to take and finish any antibiotics as prescribed for you (do not share with others) and use antibiotics only for serious bacterial infections (they do not work against viruses).

Can people with ESBLs have visitors?

Yes they can. Restrictions on activities or visitors at home or in the community are not necessary.

- If you are visiting a person with ESBLs in a hospital or a long-term care home, staff may ask you to wear gloves and a gown before having contact with the person or his/her environment. It is very important to perform hand hygiene after visiting these facilities.
- If you have ESBL, it is important to inform health care providers in the community (e.g., doctor, nurse, physiotherapist) so they can take the appropriate precautions (e.g., hand washing, use of gloves).

