



Extended Spectrum Beta Lactamase (ESBL)

What is it?

Extended spectrum beta lactamase (ESBL) microbes are specific bacteria that produce enzymes (extended spectrum beta lactamases) that can break down many common antibiotics, making the antibiotics ineffective. ESBL microbes have been present in Europe and the USA for almost 20 years. Only recently have these bacteria been detected in Canada in significant numbers. The types of bacteria that are most commonly associated with ESBL are *E. coli* and *Klebsiella*.

E. coli is a bacteria found in the normal human bowel and is necessary for digestion.

Sometimes *E. coli* will get into tissues or organs that it does not belong, such as the urinary tract, and can lead to infection and symptoms. *E. coli* is the most common cause of bladder infection and is usually treated with antibiotics. ESBL *E. coli* means that some commonly used antibiotics may not be effective to cure symptomatic infections.

This is not the same E. coli that causes “hamburger disease” or caused the water-borne outbreak in Walkerton, Ontario.

How is it spread?

Poor personal hygiene, especially after using the washroom can spread the bacteria from the bowels of one carrier or infected person to the mouth of another person. The spread of ESBL *E. coli* in an institution occurs most commonly through direct contact with someone with ESBL, a contaminated environment or on the contaminated hands of care providers. Careful cleaning of areas that might be touched by hands is important to reduce the spread of this organism in a facility. Faucets, door handles, bedrails, bathrooms, and other surfaces that people touch must be kept clean.



How is it detected?

Currently, testing for ESBL *E. coli* is only done at specific hospitals. Testing can be arranged through the Health Department. For screening, a swab of the rectum is taken. For people with symptoms, urine, blood, wound or phlegm samples may be required.

What do I look for?

For most people, ESBL *E. coli* does not cause harm and does not cause any symptoms. People who are carriers of ESBL do

not require antibiotic treatment since this could lead to increased resistance. For the few people who develop symptoms including symptoms of urinary tract, wound, pneumonia or blood infections, antibiotics should be used. These infections can be serious so knowing whether a person has ESBL *E. coli* is important to ensure the most appropriate treatments are prescribed. Risk factors for ESBL infection for people in hospital include previous antibiotic use, catheters, length of stay, frail health,

and admission to an intensive care unit.

The risk of ESBL microbes to the general public is low.

Appropriate use of all antibiotics is important to ensure effective treatments are available should the need arise.

How is it treated?

For people who carry ESBL *E. coli* but are not ill (i.e., carriers), no treatment is needed. Antibiotics to clear ESBL *E. coli* should only be taken if someone has symptoms (i.e., of urinary tract, blood, wound or lung infections). Not treating carriers of ESBL *E. coli* helps prevent further resistance and allows optimum treatment should the need arise. Carriers can clear this organism

without any treatment. All persons, especially those with ESBL, should only be prescribed antibiotics when needed. Treatment should rely on culture and sensitivity of the test. Consultation with an infectious disease specialist should be considered for those with symptoms from ESBL E. coli.

How can I protect myself and prevent the spread?

- **Wash hands** after going to the washroom and before eating or preparing food.
- Everyone working or visiting health care facilities **must wash their hands** prior to entering and upon leaving the resident's room, and prior to assisting a resident with feeding. Wash hands using an soap and/or alcohol handsanitizer.
Note: alcohol handsanitizers should not be rinsed off.
- All staff in health care facilities **must wash their hands** before and after every contact with residents.
- Gloves should be worn when providing direct personal care or cleaning the environment. Gloves must be changed and **hands washed** between procedures and between resident contact.
- No masks are required. Gowns are only required if the environment is grossly contaminated.
- Good environmental cleaning and infection control procedures must be carried out in all facilities.

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