



# *Enterococcus faecalis* & *Enterococcus faecium*

## General Information

*Enterococcus faecalis* and *Enterococcus faecium* are opportunistic pathogens. They are Gram-positive, non-motile, and facultatively anaerobic bacteria that are normally found in the gastrointestinal tract and can form biofilms.

## Host Range

Wide host range, including humans and other mammals.

## Incubation Period

Unknown. Estimates of the incubation period for Vancomycin resistant enterococci (VRE) varies from days to weeks or longer.

## Survival Outside Host

Enterococci can survive 5 days to 4 months on dry inanimate surfaces. Enterococci can grow, survive, and persist in many environments including soil, plants, water, and food.

## Laboratory Hazards

Person-to-person transmission; primary lab hazards are ingestion and parenteral inoculation.

## Symptoms of Exposure

Symptoms depend on the location of the infection. *E. faecalis* and *E. faecium* can cause urinary tract (UTI), wound, and soft tissue infections. General symptoms include fever, fatigue, and swollen lymph nodes (flu-like symptoms). Wound or soft tissue: pain, swelling, tenderness, and pus formation. UTI: abdominal pain, cloudy urine, and burning sensation.

## Lab Acquired Infections (LAIs)

None reported.

## Personal Protective Equipment



Lab Coat



Gloves



Closed-toed  
Shoes

\* For potential  
splashes, sprays or  
droplets



\*Eye Protection

## Disinfection & Inactivation

Enterococci are resilient bacteria. They can survive in hot, salty, or acidic environments. There are some alcohol tolerant *E. faecium*. 3% hydrogen peroxide is ineffective. Refer to [EPA list H](#) for effective VRE disinfectants. Can be inactivated by autoclaving (121°C for 60min).

## Waste Management

Refer to [USC's Biological and Infectious Waste Management Plan](#).

## Lab Containment

[Biosafety Level 2 \(BSL-2\)](#) for activities with materials and cultures known or reasonably expected to contain *E. faecalis* or *E. faecium*.

## Animal Containment

[Animal Biosafety Level 2 \(ABSL-2\)](#) for activities with experimentally infected animals.

## Medical Surveillance/Treatment

**Surveillance:** Monitor for symptoms; identified by bacteriological culture

**Prophylaxis:** None

**Vaccines:** None

**Treatment:** Antibiotics; *E. faecalis* and *E. faecium* are intrinsically resistant to cephalosporins.

## Spill Procedures

See [USC Biological Spill Procedures](#)

## Exposure Procedures

See [USC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited. A biosafety cabinet should be used when there is a potential to create aerosols or droplets.

## References

Agudelo Higuera NI, Huycke MM. Enterococcal Disease, Epidemiology, and Implications for Treatment.

[https://www.medicinenet.com/vancomycin-resistant\\_enterococci\\_vre/article.htm](https://www.medicinenet.com/vancomycin-resistant_enterococci_vre/article.htm)

Pidot SJ et al. Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols. *Sci Transl Med* 2018 Aug 1; 10:452.

Public Health Agency of Canada. Pathogen Safety Data Sheets: Infectious Substances – *Enterococcus faecalis* and *Enterococcus faecium*