



# Campylobacter spp.

## General Information

*Campylobacter* spp. are Gram-negative, motile, curved, or spiral rod-shaped cells. They are fastidious and microaerophilic (require lower oxygen levels) bacteria that have a growth temperature of 30 to 45°C. The *Campylobacter* genus contains more than 30 species with *C. jejuni* and *C. coli* being the leading causes of campylobacteriosis.

## Host Range

Pigs (main host), humans, birds, wide range of animals

## Incubation Period

2-5 days after infection, but can range from 1-10 days

## Survival Outside Host

*Campylobacter* spp. can survive for many weeks in water at 4°C, but only a few days above 15°C, and for 2-10 hours when exposed to drying.

## Laboratory Hazards

Person-to-person transmission is uncommon; primary lab hazards are ingestion or parenteral inoculation.

## Special Hazard

If contacted during pregnancy, *C. jejuni* and *C. coli* may have adverse effects on the fetus.

## Symptoms of Exposure

*Campylobacter* spp. cause gastroenteritis (diarrhea, cramps, nausea, vomiting, and fever). Severe infection may lead to hospitalization and life-threatening illness in immunocompromised individuals. *Campylobacter* spp. infection may cause inflammatory bowel disease.

## Lab Acquired Infections (LAIs)

Several cases have been reported.

## Personal Protective Equipment



## Disinfection & Inactivation

*Campylobacter* are susceptible to 70% ethanol, 1: 50,000 quaternary ammonium compound, 0.15% phenolic compound, >1.5% NaCl, and 5mg/L sodium hypochlorite. Can be inactivated by heat, irradiation, hydrostatic pressure, and pH levels below 5.0 and above 9.0.

## 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 *Campylobacter* spp.

## 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: Supportive treatment (e.g., hydration); antibiotics may be needed for immunocompromised patients

## 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

D. Wooley and K. Byers, "Campylobacteriosis," in *Biological Safety Principles and Practices*, Washington, DC, ASM Press, 2017, pp. 28,170.

"[Guidance on Waterborne Pathogens](#)," Government of Canada Public Health Agency of Canada. Pathogen Safety Data Sheets: Infectious Substances – *Campylobacter jejuni*, *Campylobacter coli* Ghsssein, Ghassan et al. "Prevalence, Laboratory Findings and Clinical Characteristics of Campylobacteriosis Agents among Hospitalized Children with Acute Gastroenteritis in Lebanon." *Pediatric gastroenterology, hepatology & nutrition* vol. 24,4 (2021): 346-356. WHO, "Campylobacter," World Health Organization, 05 2020. [Online]. <https://www.who.int/news-room/fact-sheets/detail/campylobacter>. CDC, "Campylobacter (Campylobacteriosis)," Center for Diseases Control and Prevention, <https://www.cdc.gov/campylobacter/index.html>