Microorganisms Causing Foodborne Disease

- Other bacteria
- Parasites
- Viruses

Uncommon foodborne bacterial pathogens

- **Brucella**
  - Associated with non-pasteurized milk products
- **Citrobacter freundii**
  - One outbreak caused by verotoxin-producing *C. freundii*
- **Burkholderia cocovenenans**
  - Produces lethal toxin when growing in coconut and coconut milk

Parasites

- **Nematodes** (roundworms)
  - Associated with uncooked or rare fish, escargot, and similar foods
  - *Trichinella spiralis* is associated with undercooked pork
- **Cestods** (tape worms)
  - *Taenia solium* (pork) and *T. saginata* (beef)
  - Humans can act as intermediary hosts by ingesting the egg
  - *Diphyllobothrium latum* associated with raw or rare fish
- **Protozoa**
  - *Cyclospora cayetanensis* associated with berries and basil
  - *Cryptosporidium parvum* associated with water and unpasteurized apple cider
Major foodborne viruses

- Hepatitis A
- Norwalk
- Rotavirus

- Viruses in foods:
  - Do not grow
  - Survive for a specific period of time
  - Enter the food by direct contact with source