Shigella

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The Organism: *Shigella* are facultative anaerobic bacteria that produces an endotoxin referred to as a shiga toxin. The organism is fragile, easily killed by heat during cooking or processing.

Sources of the organism:
- Fecally contaminated water
- Food handler with poor personal hygiene practices

Associated foods:
- Any food contaminated by a food handler with poor hygiene practices
- Contaminated water
- Salads (potato, tuna, shrimp, macaroni, chicken)
- Raw vegetables
- Sandwiches

Microorganism Characteristics: Gram-negative nonsporeforming facultative anaerobic rod-shaped bacteria which produces an endotoxin

Growth conditions:
- Temperature range: 10-40°C (50-104 ^{o}F).
- Optimum Temperature: 37°C (98.6^{o}F)
- PH range: Organisms do not survive below pH 4.5
- Salt tolerance: 5-6%

The Disease: Shigellosis, also known as bacillary dysentery, is caused by several bacteria of the genus *Shigella*. Numerous species of *Shigella* are associated with food borne illness outbreaks. *Shigella sonnei* is the major cause of shigellosis from food. Virulent *Shigella* organisms attach to and penetrate the epithelial cells of the intestine. After invasion, they multiply and spread to the epithelial cells.

Symptoms include:
- Abdominal cramps
- Diarrhea
- Vomiting
- Fever
- Stools may contain mucus or blood

Onset time:
- 12-48 hours

Infective Dose:
- Small numbers (10-100 cells) of viable S*higella* cells consumed by a susceptible host.

Duration of symptoms:
- 4-7 days

Control:

- Proper hand washing after using the bathroom.
- Use properly treated water.
- Cook foods to appropriate temperatures.
- Chill food to 41°F within 4 hours.