

**Bad
Bug
Book**

U.S. Food & Drug Administration
Center for Food Safety & Applied Nutrition
Foodborne Pathogenic Microorganisms
and Natural Toxins Handbook

Streptococcus spp.

CDC/MMWR

NIH/PubMed

1. Name of the Organism:

Streptococcus spp.

The genus *Streptococcus* is comprised of [Gram-positive](#), microaerophilic cocci (round), which are not motile and occur in chains or pairs. The genus is defined by a combination of antigenic, hemolytic, and physiological characteristics into Groups A, B, C, D, F, and G. Groups A and D can be transmitted to humans via food.

Group A: one species with 40 antigenic types (*S. pyogenes*).

Group D: five species (*S. faecalis*, *S. faecium*, *S. durans*, *S. avium*, and *S. bovis*).

2. Name of Acute Disease:

Group A: Cause septic sore throat and [scarlet fever](#) as well as other pyogenic and septicemic infections.

Group D: May produce a clinical syndrome similar to staphylococcal intoxication.

3. Nature of Illness/Disease:

Group A: Sore and red throat, pain on swallowing, tonsillitis, high fever, headache, nausea, vomiting, malaise, rhinorrhea; occasionally a rash occurs, onset 1-3 days; the infectious dose is probably quite low (less than 1,000 organisms).

Group D: Diarrhea, abdominal cramps, nausea, vomiting, fever, chills, dizziness in 2-36 hours. Following ingestion of suspect food, the infectious dose is probably high (greater than 10⁷ organisms).

4. Diagnosis of Human Disease:

Group A: Culturing of nasal and throat swabs, pus, sputum, blood, suspect food, environmental samples.

Group D: Culturing of stool samples, blood, and suspect food.

5. Associated Foods:

Group A: Food sources include milk, ice cream, eggs, steamed lobster, ground ham, potato salad, egg salad, custard, rice pudding, and shrimp salad. In almost all cases, the foodstuffs were allowed to stand at room temperature for several hours between preparation and consumption. Entrance into the food is the result of poor hygiene, ill food handlers, or the use of unpasteurized milk.

6. Relative Frequency of Infection:	Group D: Food sources include sausage, evaporated milk, cheese, meat croquettes, meat pie, pudding, raw milk, and pasteurized milk. Entrance into the food chain is due to underprocessing and/or poor and unsanitary food preparation.
7. Usual Course of Disease and Complications:	Group A infections are low and may occur in any season, whereas Group D infections are variable.
8. Target Population:	Group A: Streptococcal sore throat is very common, especially in children. Usually it is successfully treated with antibiotics. Complications are rare and the fatality rate is low.
9. Analysis of Foods:	Group D: Diarrheal illness is poorly characterized, but is acute and self-limiting.
10. Selected Outbreaks:	All individuals are susceptible. No age or race susceptibilities have been found.
	Suspect food is examined microbiologically by selective enumeration techniques which can take up to 7 days. Group specificities are determined by Lancefield group-specific antisera.
	Group A: Outbreaks of septic sore throat and scarlet fever were numerous before the advent of milk pasteurization. Salad bars have been suggested as possible sources of infection. Most current outbreaks have involved complex foods (i.e., salads) which were infected by a food handler with septic sore throat. One ill food handler may subsequently infect hundreds of individuals.
	Group D: Outbreaks are not common and are usually the result of preparing, storing, or handling food in an unsanitary manner.
	For more information on recent outbreaks see the Morbidity and Mortality Weekly Reports from CDC.

CDC/MMWR

The CDC/MMWR link will provide a list of Morbidity and Mortality Weekly Reports at CDC relating to this organism or toxin. The date shown is the date the item was posted on the Web, not the date of the MMWR. The summary statement shown are the initial words of the overall document. The specific article of interest may be just one article or item within the overall report.

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mow@cfsan.fda.gov

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