



## Getting it right with *Salmonella* nomenclature

Patricia I. Fields, PhD, Division of Foodborne, Waterborne, and Environmental Diseases, US Centers for Disease Control and Prevention  
John A. Crump, MB ChB, MD, DTM&H, McKinlay Professor of Global Health, Co-Director, Otago Global Health Institute, University of Otago

### ? What are the *Salmonella* species and subspecies that I need to know?

There are two species of *Salmonella*:

*Salmonella enterica*

*Salmonella bongori*

Within *Salmonella enterica*, there are six subspecies which are commonly abbreviated by Roman numerals:

*Salmonella enterica* subspecies *enterica* (subspecies I)

*Salmonella enterica* subspecies *diarizonae* (subspecies IIIb)

*Salmonella enterica* subspecies *salamae* (subspecies II)

*Salmonella enterica* subspecies *hautenae* (subspecies IV)

*Salmonella enterica* subspecies *arizonae* (subspecies IIIa)

*Salmonella enterica* subspecies *indica* (subspecies VI)

Most human infections are associated with *Salmonella enterica* subspecies *enterica*.

### ? How should I abbreviate *Salmonella* serovars?

Main point: Clearly define abbreviation before using it, i.e. *Salmonella enterica* serovar Typhi (*Salmonella* Typhi)

Other points: The White-Kauffman-Le Minor Scheme recommends against abbreviating genus unless species is also provided. For example:

✗ *S. Typhi* is discouraged

✓ *Salmonella* Typhi is acceptable

✓ *S. enterica* serovar Typhi is acceptable

→ 'Serovar Typhi' is particularly useful for multiple serovars, e.g., 'serovars Typhi, Paratyphi A, and Paratyphi B'

→ And remember, there is no such thing as '*Salmonella* Paratyphi'; rather, *Salmonella* Paratyphi A, *Salmonella* Paratyphi B, and *Salmonella* Paratyphi C. These can also be abbreviated as *Salmonella* serovars Paratyphi A, Paratyphi B, and Paratyphi C.

### ? What are appropriate collective terms for serovars?

**Typhoidal *Salmonella*** refers to serovars that cause typhoid or paratyphoid fever.

**Nontyphoidal *Salmonella* (NTS)** refers to all other serovars.

→ 'Serotype' is a widely used alternative to 'serovar'; 'serotyping' is the process of determining serovars.

### ? What are the appropriate terms for the diseases caused by *Salmonella*?

- **Typhoid fever** is caused by *Salmonella* Typhi.
- **Paratyphoid fever** is caused by *Salmonella* Paratyphi A, *Salmonella* Paratyphi B, or *Salmonella* Paratyphi C.
- **Enteric fever** is the collective noun for typhoid and paratyphoid fevers.
- **Nontyphoidal *Salmonella* (NTS)** are important causes of enterocolitis\*, and may cause bloodstream infections and other extraintestinal infections of normally sterile sites. Some serovars and sequence types of NTS cause extraintestinal infections more frequently than others relative to diarrhea.

\*Anatomically and pathologically speaking, NTS cause predominately enterocolitis rather than gastroenteritis.

### ? Where can I find out more?

These websites provide an excellent overview of the history and current status of *Salmonella* taxonomy and nomenclature:

- <http://www.bacterio.net/salmonella.html>
- <http://www.bacterio.net/-salmonellanom.html>
- [https://www.pasteur.fr/sites/default/files/veng\\_0.pdf](https://www.pasteur.fr/sites/default/files/veng_0.pdf)

Learn more and join the effort at [www.takeontyphoid.org](http://www.takeontyphoid.org)

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