



**UW TASP**  
tele-antimicrobial stewardship program



# April 3rd, 2018

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## Agenda

- John Lynch: Fecal Microbiota Transplantation
- Case Discussions
- Open Discussion

# Fecal Microbiota Transplantation?

John Lynch, MD, MPH

Harborview Medical Center

The University of Washington School of Medicine

April 3rd, 2018



# W My hospital and/or clinic is doing FMTs now.



When poll is active, respond at **PollEv.com/johnblynch547**



Text **JOHNBLYNCH547** to **22333** once to join

Yes

No

No idea

**W** My hospital and/or clinic plans on doing FMT in the future.

Yes

No

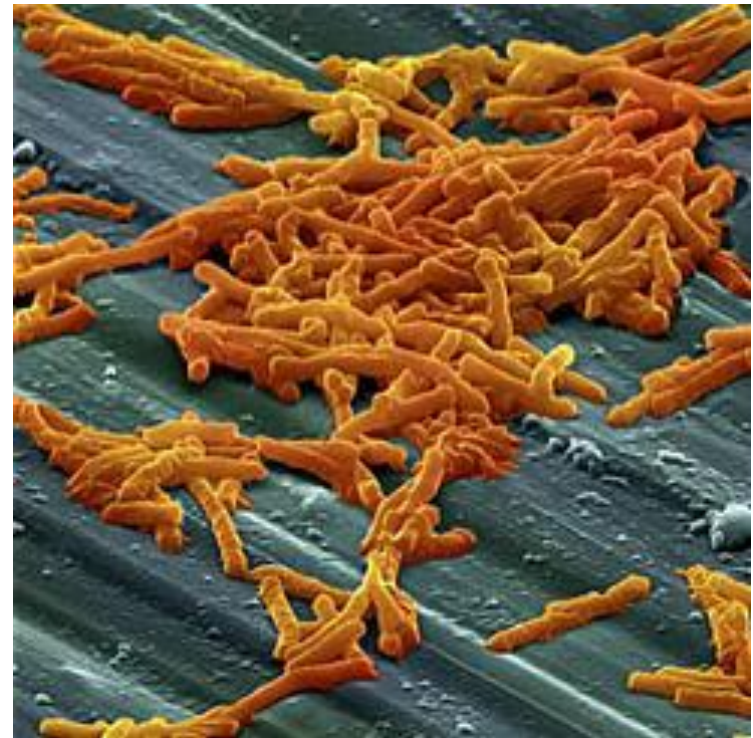
Don't  
know





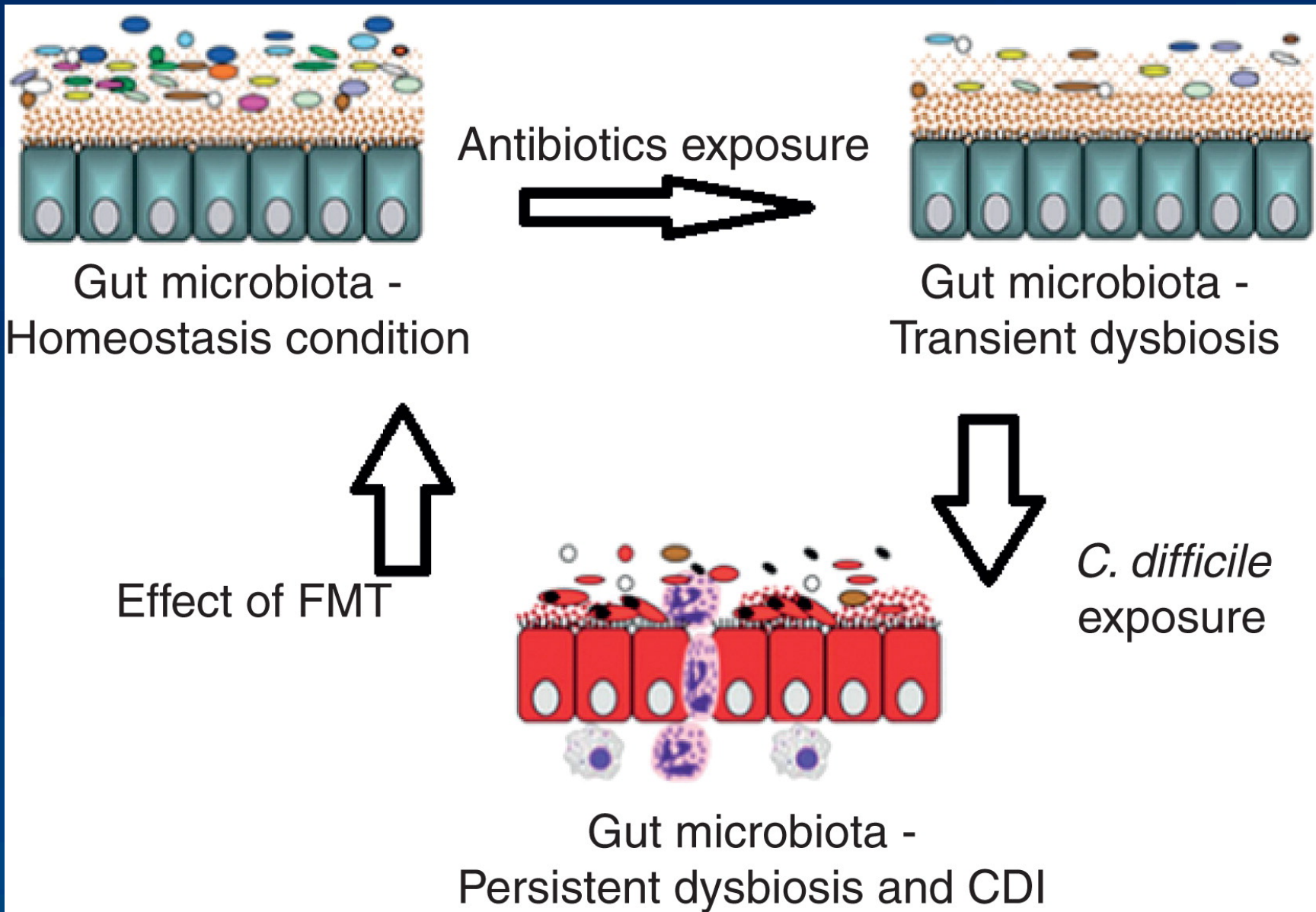
# What is *Clostridioides difficile*

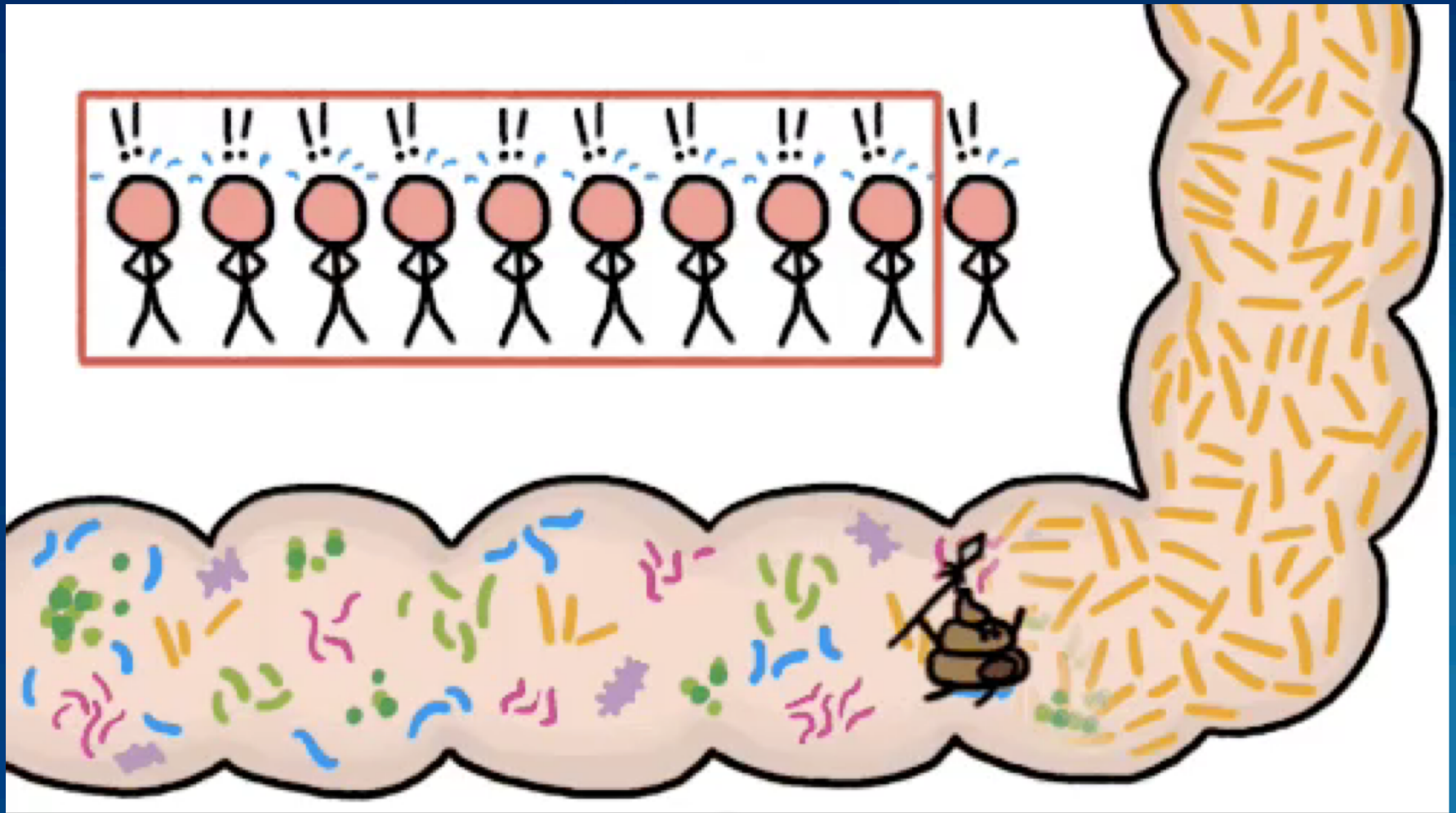
- Gram-positive, anaerobic, spore-forming bacteria (*Firmicutes* family)
- Live as vegetative and spore forms
- Spores are O<sub>2</sub>-tolerant (very hardy)
- Intrinsically drug resistant



# *Clostridioides difficile* Biology

- Genetically diverse
  - Pathogenic, toxin-producing strains
  - Non-pathogenic strains
- 2 protein exotoxins disrupt colonic epithelial cells and stimulate cytokines/chemokines
  - TcdA (toxin A)
  - TcdB (toxin B)
- Toxin production leads to inflammation
- Disease outcome associated with host's immune response





# Fecal Microbiota Transplant: A History

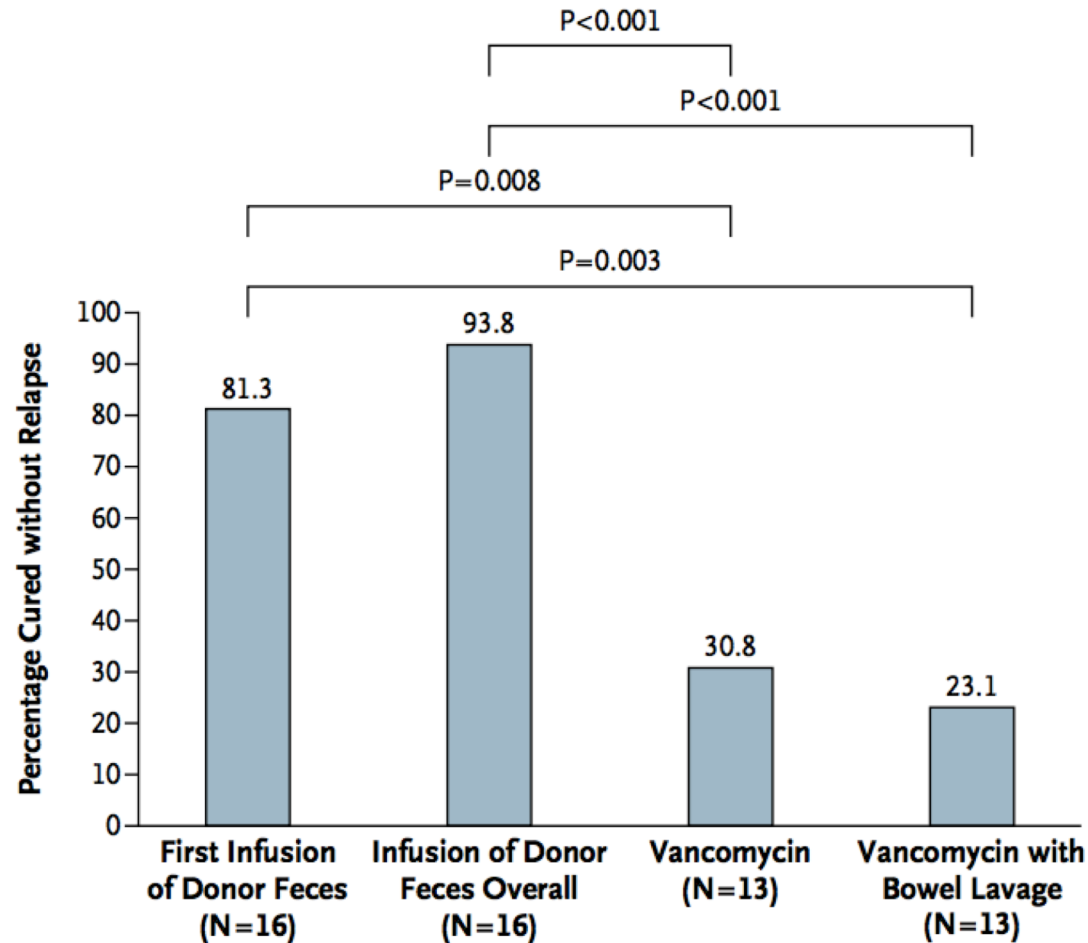
- 4th century, Dong-jin dynasty in China, alchemist Ge Hong, *Handbook of Emergency*, ingest feces to treat GI problems
- Li Shizhen, Ming dynasty, 14th century, fresh/fermented/dried/infant-derived feces ("yellow soups")
- 17th century, transfaunation Italian vet practice in horses/cows
- WW II Bedouins rec German soldiers in NA to ingest warm camel feces for dysentery with good results
- Eiseman, 1st use modern clinical medicine, fecal enemas for pseudomembranous colitis with good results (Surgery, 1958)
- 1st FMT for RCDI 1983 (Schwan, Lancet, 1983)



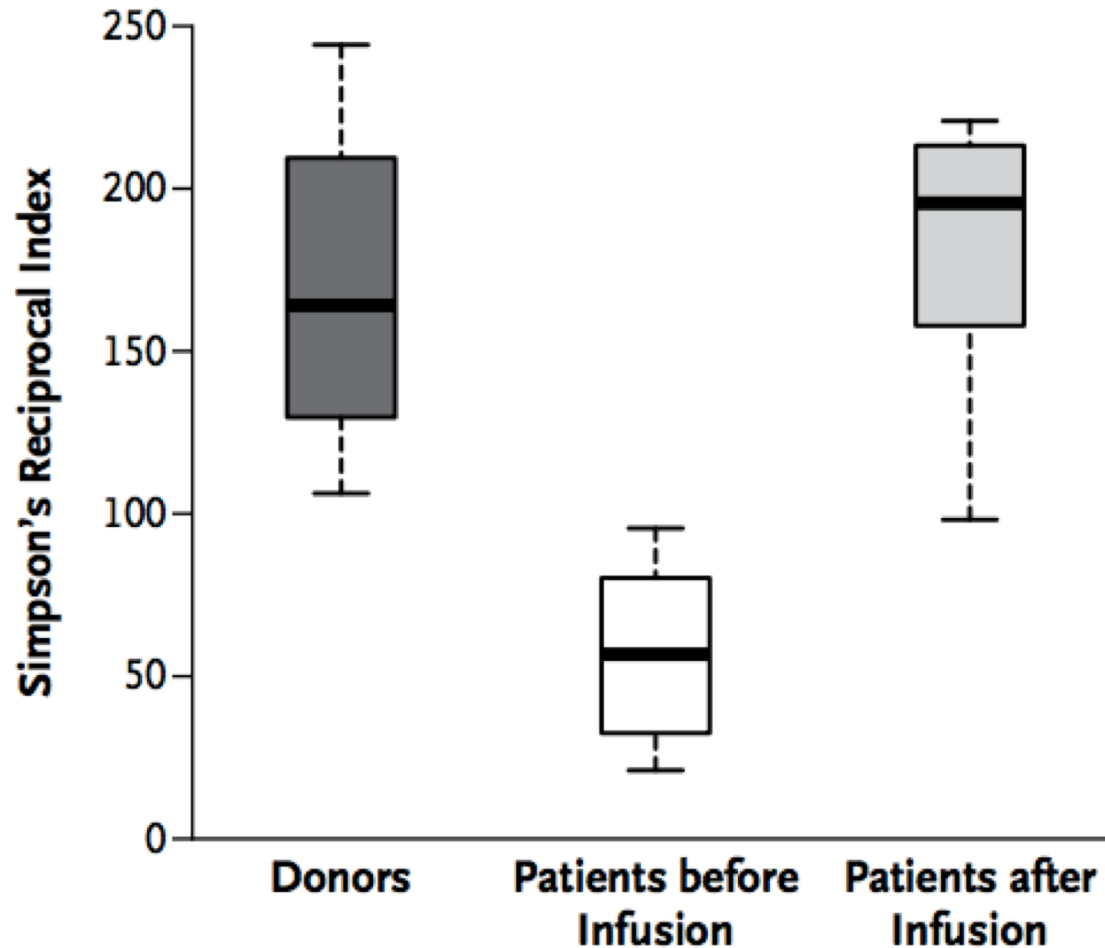
# Fecal Microbiota Transplant (FMT)

- Solid indication for recurrent CDI
- Solid data for safety in immunocompromised patients
- Data exists for FMT in children
- Emerging data on use in severe CDI cases
- Use in primary CDI?
- (use in other diseases...)

# Fecal Microbiota Transplant (FMT)



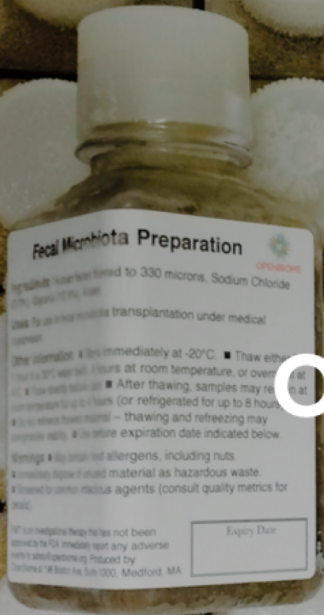
# Fecal Microbiota Transplant (FMT)

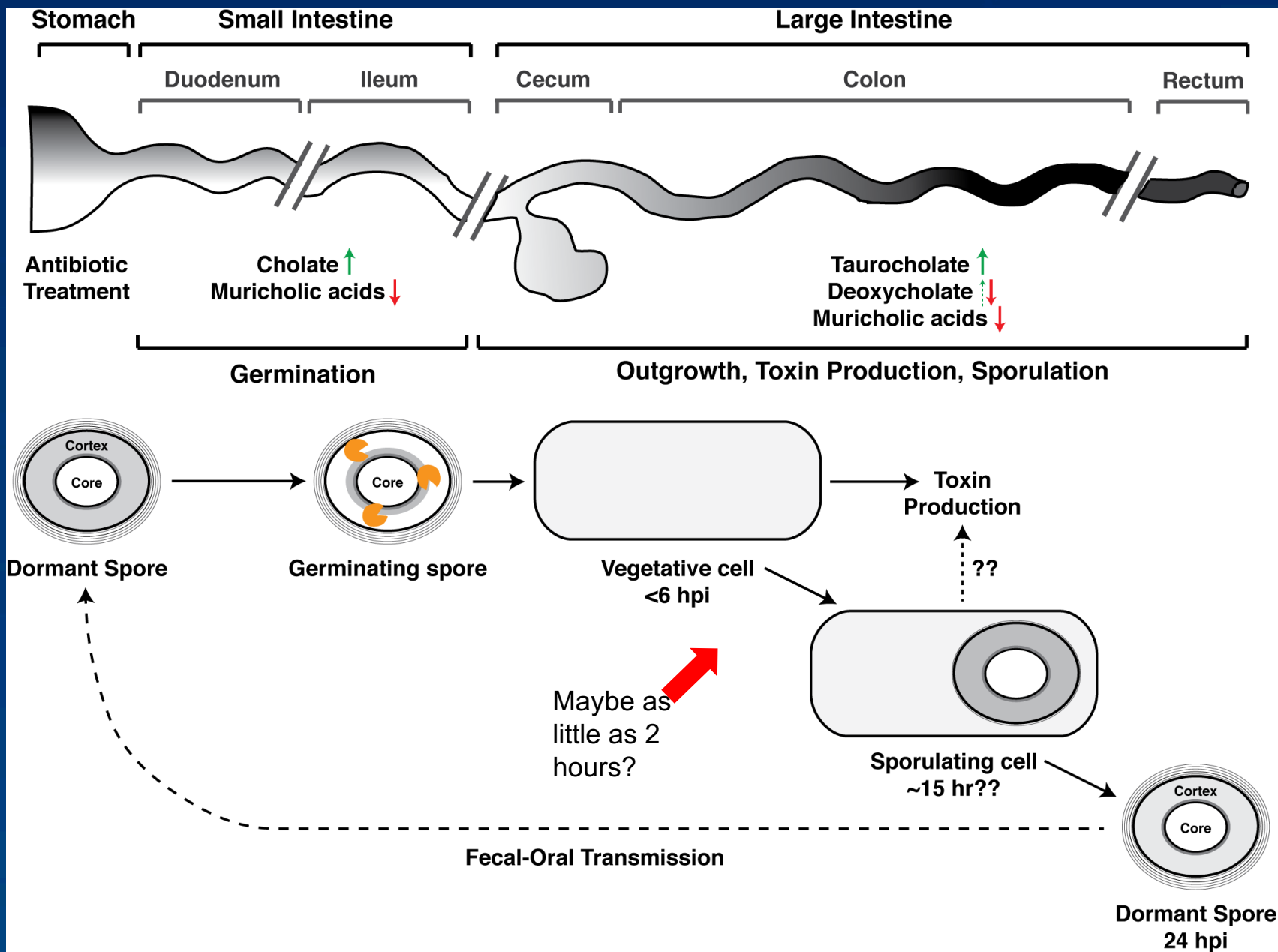


Welcome to

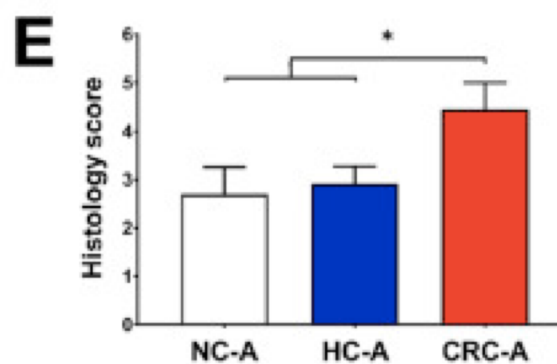
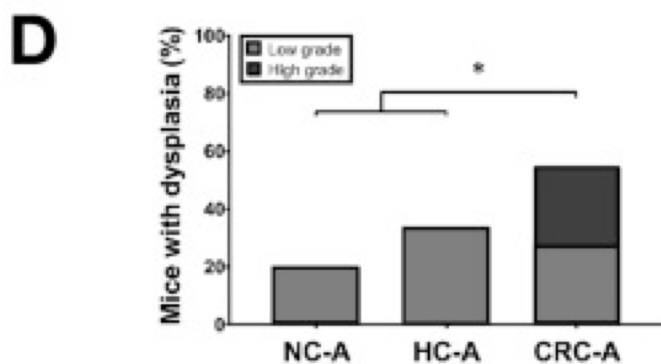
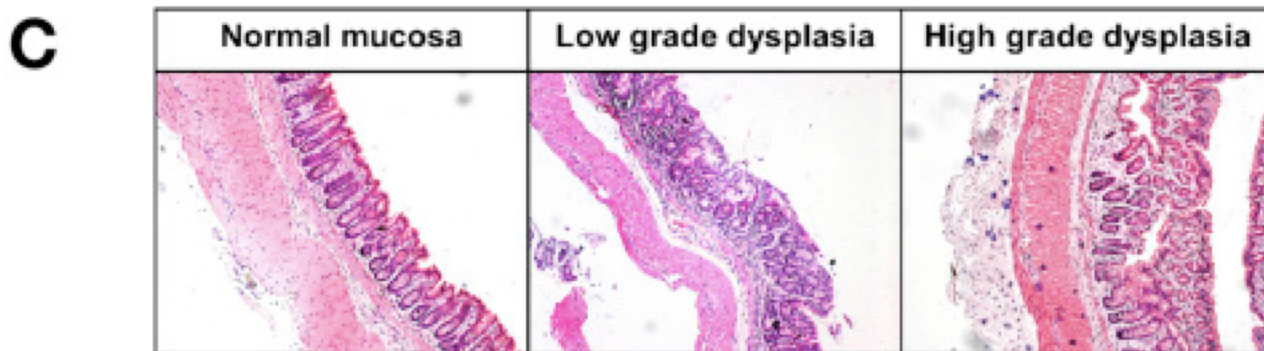
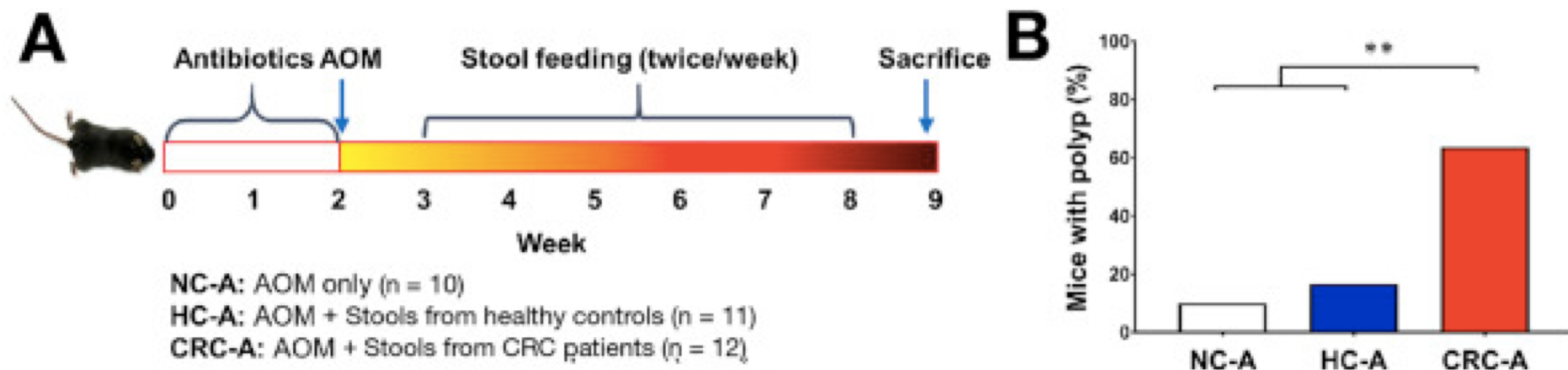
# OPENBIOME

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# Gastroenterology

Volume 152, Issue 4, March 2017, Pages 799-811.e7



Original Research

Full Report: Clinical—Alimentary Tract

## Efficacy of Sterile Fecal Filtrate Transfer for Treating Patients With *Clostridium difficile* Infection

Stephan J. Ott <sup>1, \*</sup>, Georg H. Waetzig <sup>2, \*</sup>, Ateequr Rehman <sup>3, \*</sup>, Jacqueline Moltzau-Anderson <sup>3, 4</sup>, Richa Bharti <sup>3</sup>, Juris A. Grasis <sup>5</sup>, Liam Cassidy <sup>6</sup>, Andreas Tholey <sup>6</sup>, Helmut Fickenscher <sup>7</sup>, Dirk Seegert <sup>2</sup>, Philip Rosenstiel <sup>3, §</sup>, Stefan Schreiber <sup>1, 3, §</sup>  

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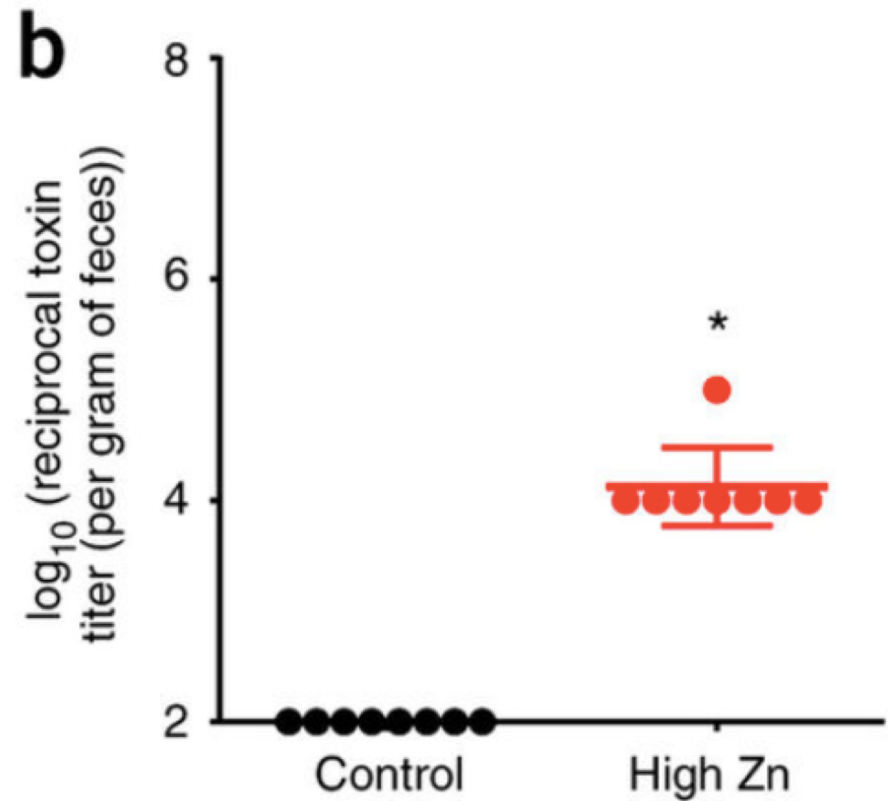
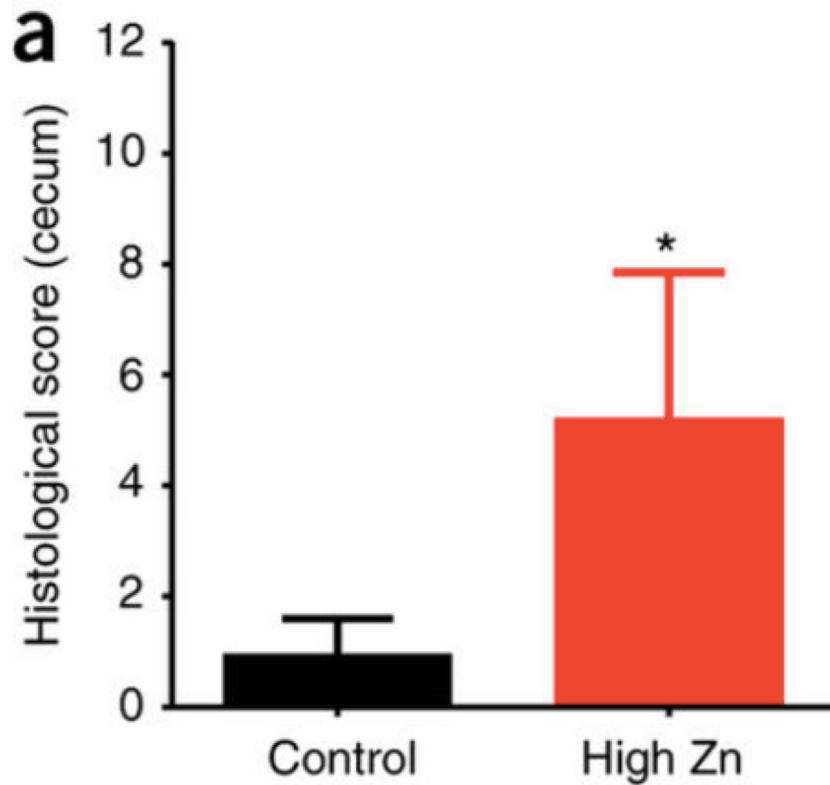
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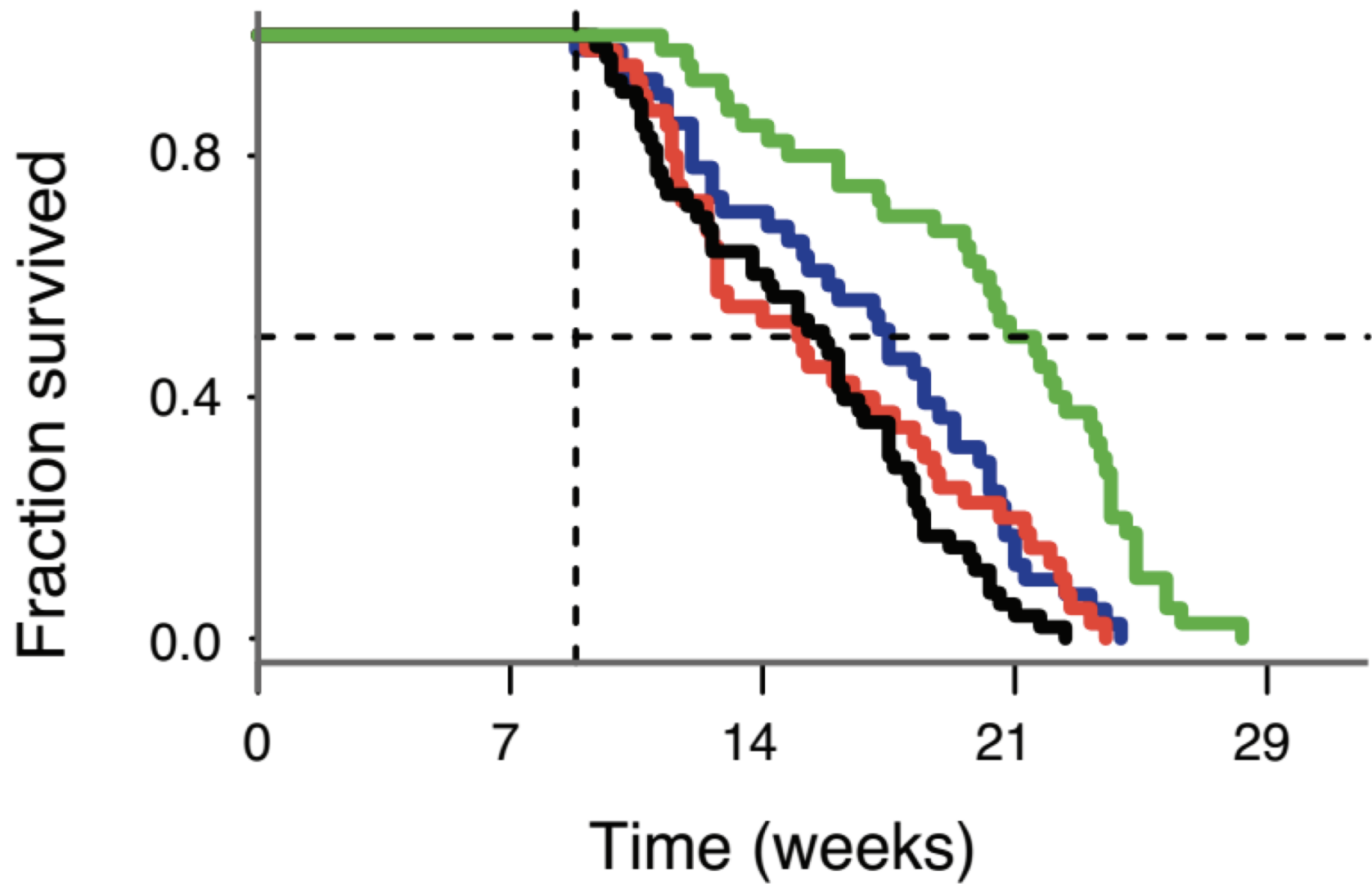
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# Minerals and *C. difficile*









Questions?