



Super Protection from Superbugs

the fight against
antibiotic resistance

condensed, introductory program

Presented by:

MARR

Michigan Antibiotic Resistance
Reduction Coalition

Preventing the Spread of Infection



- **Wear a mask**
- **Cover your mouth when you cough or sneeze**
- **Physical distancing**
- **Stay home when you are sick**
- **Avoid touching your eyes, nose or mouth**
- **Wash hands frequently**



Preventing the Spread of Infection

Cell phones have more germs than toilets!



Clean and disinfect electronics frequently

- Turn off, unplug your device
- Use a lint-free cloth or cotton ball with 70 percent rubbing alcohol
- NEVER spray liquid on your device or use bleach

Which one is more effective?



or



Handwashing Prevents the Spread of Infection

Soap and water is more effective



Soap and water **removes** germs from your hands



Alcohol-based hand sanitizer **kills most germs**, but does not kill them all!

Fight Germs: Wash Your Hands!





When should you wash your hands?

- After using the toilet, changing a diaper
- After touching an animal, animal feed or animal waste
- Before/after preparing food
- Before eating



When should you wash your hands?



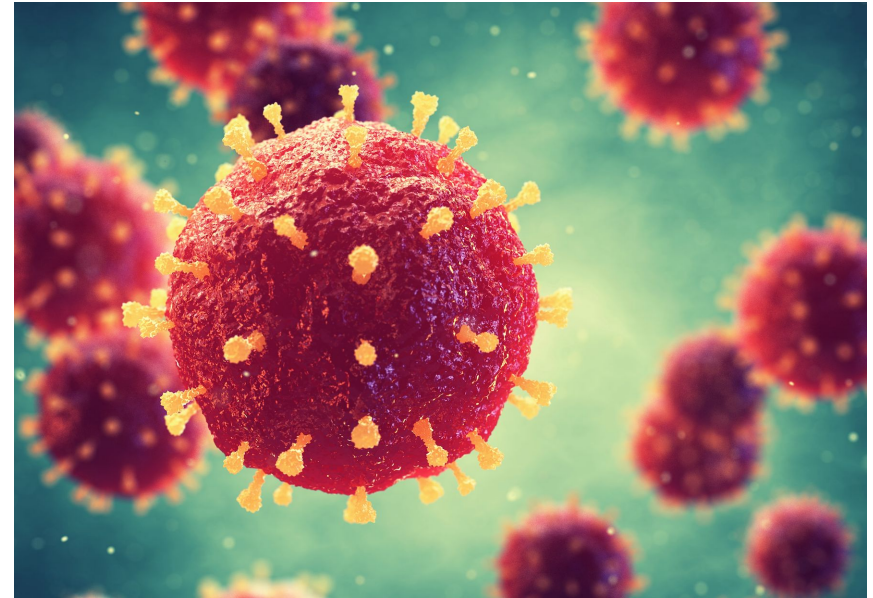
- After sneezing/coughing
- Before/after caring for someone who is sick
- Before/after treating a wound/cut
- After leaving a public place/upon returning home

What's the difference?

Bacteria

VS

Virus



What's the difference?

Bacteria

Able to live in many different types of environments

Complex, single-celled creatures

Many are harmless and some help with many functions of the body

Cause **bacterial** infections



What's the difference?

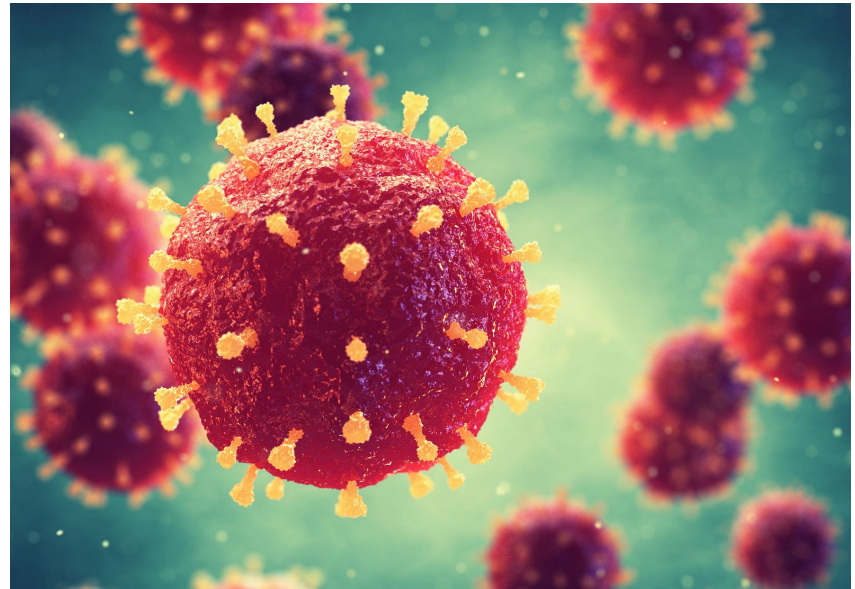
Virus

Requires a living host to multiply

Tiny without a cell structure

Some viruses cause disease, and they're very specific in the cells they attack

Cause **viral** infections



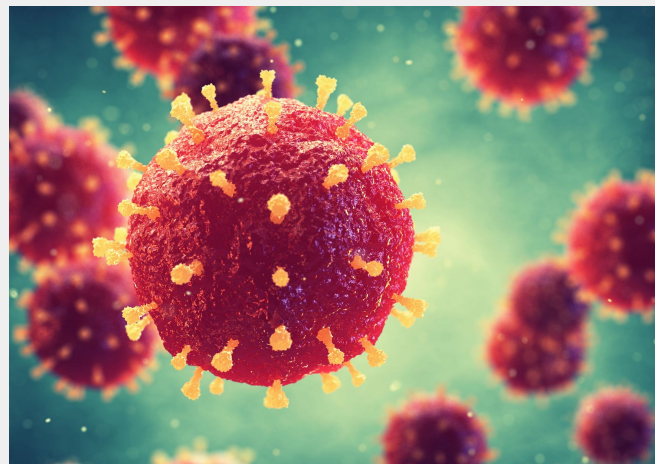
What's the difference?



Bacteria

Cause **bacterial** infections

Antibiotics can be used



Virus

Cause **viral** infections

Antibiotics are **NOT** effective

Do Probiotics Help Antibiotics Work Better?

Probiotics

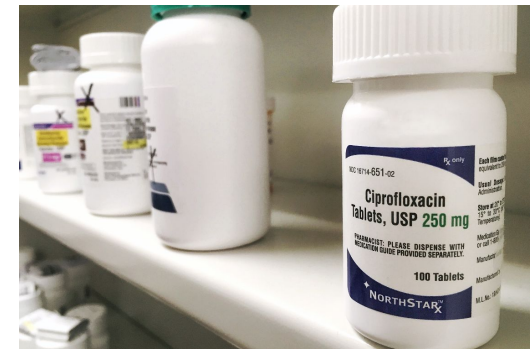
Live microorganisms, found in some yogurts and foods, that are intended to have health benefits

Help digest food, destroy bacteria that cause disease, and produce vitamins



Do Probiotics Help Antibiotics Work Better?

YES
 No

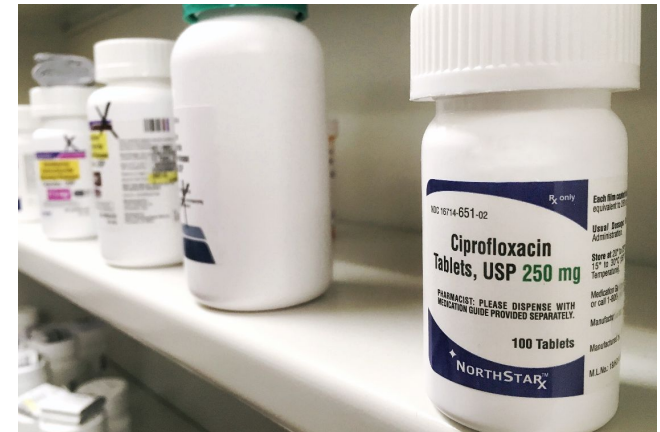


Antibiotics:

Kill or inhibit bacteria that cause infection

May kill the “good” bacteria in your gut and cause side effects like diarrhea

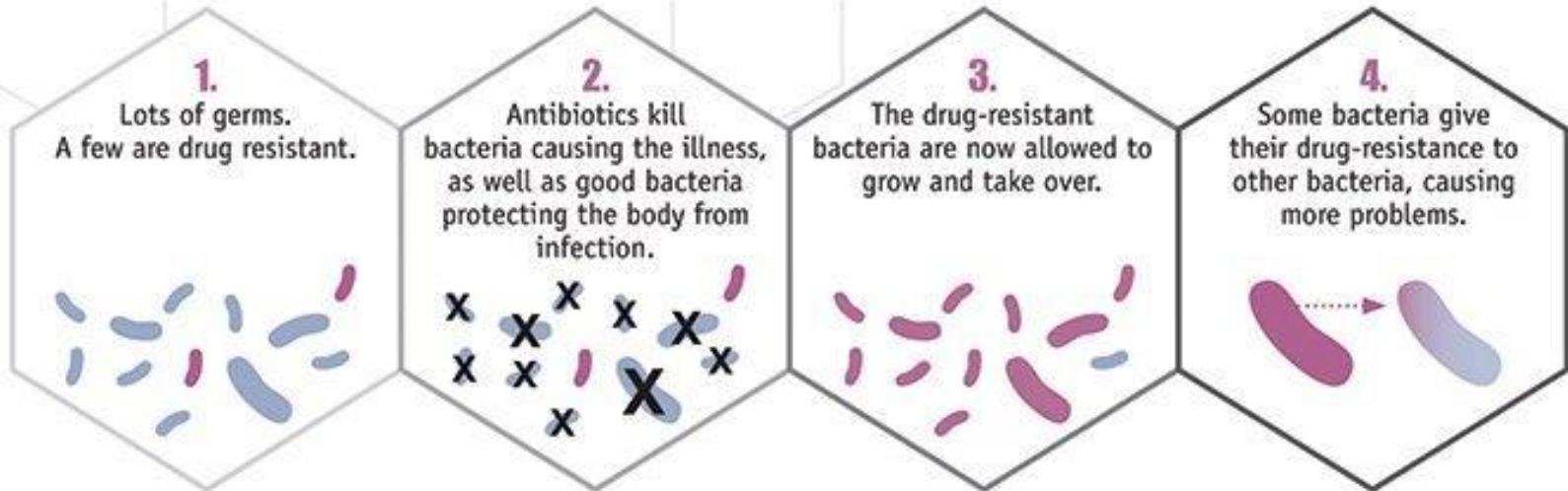
Taking antibiotics can cause **antibiotic resistance**



How Does Resistance Occur?



How Antibiotic Resistance Happens



Antibiotic Resistance **Kills!**

The Threat of Antibiotic Resistance in the United States



2,868,700 infections



35,900 deaths



+ **\$20 billion** in extra health care costs, and
lost productivity of **\$35 billion** per year

Antibiotics are life-saving drugs, but...



Common Side effects

- Nausea
- Vomiting
- Diarrhea



Allergic reactions

- Full body rash
- Difficulty breathing
- swelling of mouth, lips, and/or tongue



Most common cause
of **emergency
department visits** for
adverse drug events
**in children under 18
years of age**

Antibiotics are life-saving drugs, but...



Serious/life threatening side effect

CLOSTRIDIOIDES DIFFICILE

THREAT LEVEL **URGENT**

| | | |
|--|--|---|
|  223,900 Estimated cases in hospitalized patients in 2017 |  12,800 Estimated deaths in 2017 |  \$1B Estimated attributable healthcare costs in 2017 |
|--|--|---|

Clostridioides difficile (*C. difficile*) bacteria can cause life-threatening diarrhea. Infections occur most often in people who have taken antibiotics for other conditions. It is the most common healthcare-associated infection.

Also known as *C. diff*, this infection that is caused by antibiotics disrupting the gut microbiome, also occurs outside the hospital.

If you are prescribed an antibiotic, make sure you take it correctly!

- ✓ **Make sure directions are understood**
- ✓ **Take at the same time(s) each day**
- ✓ **Do not skip doses**
- ✓ **Never share antibiotics**
- ✓ **Do not save antibiotics for next time**



| Illness | Usual Cause | | Antibiotic Needed |
|----------------------------|-------------|----------|-------------------|
| | Viruses | Bacteria | |
| Cold/Runny Nose | ✓ | | |
| Bronchitis/Chest Cold | ✓ | ✓ | |
| Whooping Cough (pertussis) | | ✓ | |
| Flu (influenza) | ✓ | | |
| Strep Throat | | ✓ | |
| Sore Throat (except strep) | ✓ | | |
| Middle Ear Infection | ✓ | ✓ | |
| Urinary Tract Infection | | ✓ | |

Spread the word...not the germs

- ✓ Covering your cough and washing your hands can prevent the spread of disease
- ✓ Antibiotics should only be used to treat infections caused by bacteria, NOT viruses
- ✓ Not using antibiotics the right way can lead to antibiotic resistance

You can help by telling your family members what you learned during this presentation

