

# Do Bugs Need Drugs?<sup>®</sup> Daycare Program



## Part Five: Information Sheets



## GOOD GERMS - BAD GERMS

- Bacteria are all around us and make up 60% of the living matter on earth. Life cannot exist without bacteria.
- Most bacteria are good. A few are bad.
- Bad bacteria are germs that cause disease. Viruses are different germs that also cause disease.
- Good bacteria live on our skin and in our mouths and intestines. We have about two hundred million bacteria on our hands alone. Good bacteria protect against bad bacteria and viruses and help with body functions.
- Bad bacteria usually infect a specific part of the body. Two examples are pneumonia (a lung infection) and Strep throat.
- Viral infections, such as a cold or influenza, spread throughout the body. Usually viruses cause many symptoms, such as a runny nose, cough, sore throat and body aches.
- Compared with bacterial infections, viral infections spread more easily from one person to another.

## RESPIRATORY TRACT INFECTIONS

- Infections of the nose, throat, ears and lungs are called respiratory tract infections.
- Most of these infections are caused by viruses. Colds, influenza, most sore throats and coughs are caused by viruses.
- A common misconception is that bronchitis, sometimes called a chest cold, is caused by bacteria. Bronchitis is nearly always caused by a virus. The only exceptions are people with a chronic respiratory illness such as COPD (chronic obstructive pulmonary disease) or emphysema.
- Another misconception is that green or yellow nasal discharge or sputum means that the infection is caused by bacteria. The green or yellow color occurs with any infection, whether caused by bacteria or viruses. The color is part of the inflammatory process and means that your body is fighting the disease.

- Occasionally a sore throat is caused by the Streptococcus bacterium. The only way to know if a sore throat is caused by bacteria is with a throat swab.
- Ear infections are bacterial or viral. They are far more common in young children than adults because the tubes (the Eustachian tubes) connecting the middle ear to the throat are still very narrow and can trap bacteria in the middle ear. Ear infections often occur after a viral infection like a cold or influenza.
- Pneumonia is a very serious illness of the lungs. Pneumonia can be caused by either bacteria or viruses.

## USE ANTIBIOTICS WISELY

- Antibiotics work against bacterial infections but not against those caused by viruses. Antibiotics kill both good and bad bacteria.
- Although antibiotics kill most bacteria, some bacteria have special defences and are able to resist being killed by the antibiotic. These bacteria are said to have “antibiotic resistance”.
- Taking antibiotics when they are not needed makes your good bacteria resistant. Importantly, antibiotic resistance can be transferred from one bacterium to another, including bad bacteria that cause disease.
- If you become infected with bad bacteria that have antibiotic resistance, the antibiotic will no longer be able to cure the disease. People die from antibiotic resistant infections, for example, from antibiotic resistant bacteria that cause pneumonia.

## WHAT CAN YOU DO?

- Only take antibiotics for bacterial infections. Antibiotics have no effect on viral infections such as colds and influenza.
- Your pharmacist can suggest over the counter medications that can help with a viral infection.
- Remember, it is the bacteria that have antibiotic resistance - not you!





## HANDWASHING

### ➤ Wash your hands!

- Handwashing is the best way to stop the spread of infections
- 80% of common infections can be spread by the hands.
- Use regular soap. Soap gets rid of germs from the hands by washing them away.

### ➤ Steps of handwashing

- Wet your hands
- Apply regular soap
- Rub hands together for 20 seconds or the time it takes to sing Twinkle Twinkle Little Star. Be sure to wash the palms, between the fingers, backs, wrists, thumbs and fingertips and nails.
- Rinse until all the soap is gone, about 10 seconds.
- Dry hands with a clean disposable towel.
- Use the towel to turn off the tap and let yourself out the washroom door.
- Last, remember to leave the washroom neat and tidy!

### ➤ When to wash your hands

- Before eating
- Before and after preparing food
- After using the washroom or helping a child use the washroom
- Before and after changing diapers
- After blowing your nose or wiping a child's nose
- After playing with toys, crafts, gym and playground equipment, etc. that are shared with other children
- After playing with pets and animals



## THE SCOOP ON SOAPS

### ➤ Use regular soap

- Soap removes germs from the hands.
- Soap removes the dirt and grease that attract bad bacteria.
- Regular soap works just as well as antibacterial soap to prevent disease.
- Regular soap does not have antibiotics.
- Regular soap does not expose the good bacteria on the skin or in the environment to antibiotics.

### ➤ Antibacterial soap is not recommended

- There is no advantage in using antibacterial soap. Regular soap works just as well to prevent illness.
- The most common antibiotic that is added to soap is a chemical called “triclosan.”
- Antibacterial soap exposes the good bacteria on your skin to antibiotics. Repeated use of antibacterial soap allows only those bacteria (both good and bad) that are resistant to survive on the skin.
- Resistance can be passed from the good bacteria on your skin to disease causing bacteria. From a medical point of view, infections caused by these resistant bacteria are serious and difficult to cure.





## HAND SANITIZERS

### Alcohol based hand sanitizers

Alcohol based hand sanitizers are easy to use and are especially useful when soap and water are not nearby, such as on a playground or on field trips. However they do not work if the hands are greasy or visibly dirty. Because young children and students often have dirty hands, hand sanitizers should not be used as a substitute for handwashing. Washing with plain soap and water is the best way to stop the spread of infections.

To make sure the product you buy is effective, here are some buying tips:

- Alcohol based hand sanitizers need to be at least 60% alcohol to be effective, so check the label.
- Read the label and use products whose *only active ingredient* is alcohol (ethanol, propanol, n-propanol). These products don't cause antibiotic resistance.
- Some alcohol based hand sanitizers contain triclosan. These products should be avoided because they cause antibiotic resistance. Read the product label.

These precautions should be followed when using alcohol based hand sanitizers:

- The alcohol in the hand rub is poisonous if ingested, but is safe for children if used with supervision. Children should not put their hands in their mouths until the alcohol evaporates (about 15 seconds).
- Wall dispensers and free-standing containers of alcohol based hand sanitizers should be placed so that they cannot be reached by small children.
- Alcohol based hand sanitizers are flammable and should not be placed near a source of heat or above an electrical outlet.
- Alcohol based hand sanitizers don't work if your hands are greasy or visibly dirty.
- Alcohol based hand sanitizers are not effective against some of the germs that cause diarrhea.

## Alcohol free hand sanitizers

- Alcohol free hand sanitizers contain the chemical benzalkonium chloride. Although benzalkonium chloride is an effective disinfectant on hard environmental surfaces, it is not effective as a hand sanitizer.
- Benzalkonium chloride belongs to the class of chemicals known as quaternary ammonium compounds, also known as “quats”. Quats all end in the letters “-nium”.
- Benzalkonium chloride, like triclosan, promotes antibiotic resistance in bacteria.
- Alcohol free hand sanitizers may seem attractive because they are not flammable or poisonous, but they are not recommended because of lack of evidence that they work.
- Alcohol free hand sanitizers are not recommended by the Public Health Agency of Canada or Alberta Health Services.

## CLEANING PRODUCTS

### What do the labels mean?

- Plain soaps and household cleaning agents are products that lift dirt, grease and microbes from the skin or environmental surfaces and wash them away. These products work by removing microbes, rather than by trying to kill them. These products do not promote antibiotic resistance in the bacteria on the skin or in the environment.
- Disinfectants are chemicals that will kill 99.99% of microbes on hard environmental surfaces.
- Sanitizers will kill microbes on environmental surfaces and bring them down to safe levels.
- Antiseptics are chemicals that will reduce microbial counts on the skin. The term “hand sanitizer” is actually a misnomer because sanitizers are products intended to be used on non-living objects.

## **When to clean and when to sanitize or disinfect**

- There are only a few specific times when environmental surfaces need to be disinfected or sanitized. Disinfectants should be used to clean up body fluids such as blood, sputum, vomit, urine or feces.
- Because of the likelihood of contamination with fecal bacteria, surfaces in washrooms should be disinfected or sanitized on a regular schedule. Besides sinks, toilets and urinals, remember to disinfect surfaces that are frequently touched such as water taps, soap dispenser buttons/levers, hot air dryer buttons, door handles, flush levers, the lock on the inside of the stall door.
- Proper food handling reduces the need for extensive disinfection in food preparation areas. Food handling guidelines are available from Alberta Health and Wellness.<sup>1</sup>
- Specific disinfection procedures may be needed if a public health issue arises, but most of the time, simply cleaning the surface and washing away dirt, grease and microbes will prevent the spread of germs.

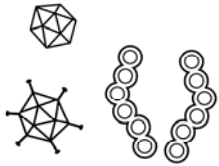
## **Disinfecting wipes**

- Disinfecting wipes are intended to be used on hard, non-porous surfaces, not on the skin.
- Many commercial disinfecting wipes contain quats such as benzalkonium chloride. For these wipes to act as disinfectants, the surface must remain wet for at least ten minutes.
- Use of products containing benzalkonium chloride or other quats is discouraged because they promote antibiotic resistance.

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<sup>1</sup> Alberta Health and Wellness. Food retail and food services code. Available on line at: <http://www.health.alberta.ca/health-info/food-safety-code.html>

# Wash the Bugs Away



Tiny bugs, too small to see,  
Want to get inside of me.

They will make me sick in bed,  
That is why my mommy said . . .



After the bathroom, after play,  
I must wash the bugs away.





## HOW MUCH DO YOU KNOW?

(Answers on next page)

1. What is the best way to stop the spread of infections?	
2. Antibiotics work against:	a) bacteria b) viruses c) both
3. What has antibiotic resistance?	a) bacteria b) viruses c) people
4. Most coughs are due to:	a) bacteria b) viruses
5. Most sore throats are due to:	a) bacteria b) viruses
6. Viral infections spread more easily from one person to another than bacterial infections.	True False
7. Green discharge from the nose means you have a bacterial infection.	True False
8. All bacteria cause disease.	True False
9. It is better to use regular soap than antibacterial soap.	True False
10. Most infections are spread by:	a) hands b) lips c) sneezing and coughing



## ANSWERS

- Question 1. Handwashing is the best way to stop the spread of infections.
- Question 2. a) Bacteria and viruses are different. Antibiotics work against bacteria but not against viruses.
- Question 3. a) Bacteria have antibiotic resistance when they cannot be killed by an antibiotic. Remember it is the bacteria that are resistant NOT YOU! Even very healthy people who have never taken antibiotics can become infected with antibiotic resistant bacteria from other sources.
- Question 4. b) Most coughs are due to viruses. Antibiotics will not help! Sometimes a cough can be due to pneumonia. If your doctor suspects pneumonia, an X-ray should be taken and antibiotics may be prescribed.
- Question 5. b) Most sore throats are due to viruses. A doctor cannot tell, just by looking, whether a sore throat is due to a virus or to Streptococcus bacteria (Strep throat). A throat swab is the only way to know if antibiotics might help.
- Question 6. True. Viruses are more contagious than bacteria. If more than one person in your family has the same illness, odds are it is a viral infection. Antibiotics will not work against viral infections.
- Question 7. False. A yellow/green discharge from the nose is normal 2-3 days after the start of a respiratory infection. This does not mean it is caused by bacteria.
- Question 8. False. There are both good and bad bacteria. Good bacteria protect our skin against infection and help to digest food. Bad bacteria infect specific areas of the body to cause disease such as pneumonia (lungs) or Strep throat.
- Question 9. True. There is no need to use antibacterial soap! Regular soap is very good at getting rid of bad germs. *Antibacterial soap promotes antibiotic resistance.*
- Question 10. a) Eighty percent of common infections can be spread by the hands. Handwashing is the best way to stop the spread of infections.