

Good Bacteria, Bad Bacteria

Bacteria are one of the fundamentals of life. We live with bacteria all around us and we are alive because of bacteria.

Some bacteria are good while others cause harm to human health.

Media advertisements frequently play up the fear of germs. We are constantly reminded about products that help us win the war against germs which harm our families. Stores display a sometimes confusing array of products to use in the domestic battle against 'germs'.

So, it is difficult to not get anxious about bacteria.

What we all need to remember is not to fear bacteria, but rather learn more about the good and the bad. Common Sense is always your best guide.

Good Germs

- Yoghurt - *Lactobacillus*
- Beer, wine, bread, cheese, vinegar
- Probiotics – using good bacteria to reduce pathogens by competing for space and nutrients in the body
- Lactic acid bacteria in the intestine from the mother are helpful in protecting newborn babies during nursing.
- Bacteria normally found on the body (e.g. skin, ears, mouth) provide protection against invading pathogens.
- Intestinal bacteria digest food, extract nutrients by breaking down organic compounds into simpler forms such as nitrates and carbonates

Exposure to Bacteria, Viruses, Moulds

- Bacteria flow through our bodies. In the small intestine the bacteria are pulled into Peyer's Patches which are tissues where bacteria are checked out by our immune system. The bacteria are presumed friendly, beneficial or non-pathogenic unless there is damage occurring.
- Antibiotics can be life-saving, but some antibiotics kill both the bacteria causing the illness, and bacteria on which the body relies.
- Bacteria are becoming more antibiotic resistant with inappropriate use of medications.
- Vaccines cause our immune systems to launch a specific attack against one type of virus or bacteria. Vaccines do not cause bacteria to become antibiotic resistant.

Hand Hygiene

- The single best, most effective way to keep from getting sick is to practice good hand hygiene. It is easy to learn, inexpensive and incredibly effective to stop the spread of bacteria, viruses and moulds which cause disease.

- 99% of bacteria and viruses on our hands are removed by washing your hands with soap and warm water. The mechanical actions of proper hand washing, using regular liquid hand soap and warm water, is the best way to remove 99% of all and any harmful bacteria, viruses, moulds. Soap does not kill the microbes. It is the combination of soap, rubbing, and rinsing that loosens the microbes so that they slide off your hands in the water running over your hands.
- Hand washing is the best choice if hands are visibly soiled. Hands should always be done before eating, and before and after using the washroom.
- Touching our eyes or mouth with hands that are not washed is the way to get germs into our bodies.
- Changing our behaviour is a better way to reduce chances of illness. Avoid touching your face, mouth, eyes with unwashed hands.
- Antibacterial soaps and solutions target bacteria, just as their name states. These do not destroy viruses, such as those that cause colds and influenza. Bacteria do not cause colds and flu.
 - Antibacterial soaps contain triclosan or triclocarban – studies have proven household levels cause resistance of bacteria. Bacteria exposed to the residue of minute amounts remaining on the hands can adapt, and then become tolerant to the antibacterial agent at higher levels.
 - Antibacterial soaps kill both beneficial and harmful bacteria.
 - Antibacterial soaps, at household product, levels do not remove any more bacteria than plain soaps.
- Medical soaps contain a very high level of antiseptics that more efficiently kill microbes. Studies do show that antibacterial cleansers used in hospitals can help prevent the spread of disease when used properly.
- Alcohol gels also have an important role in hand hygiene. Alcohol sanitizers are an effective way to clean hands that are not visibly soiled. Carry such sanitizers with you for times when you don't have access to soap and water.
 - In order to be effective, alcohol sanitizers must contain 60-95% alcohol.
 - When you use alcohol hand wipes and gels, microbes are killed but not removed from the skin. Microbes are rinsed off when hands are washed with soap and water.
 - Alcohol-based sanitizers do not work very well if there is dirt or grease on your hands.
 - Use alcohol sanitizers on dry hands. Wet hands dilute the alcohol solution and then it is less effective.
 - Alcohol sanitizers can dry the skin. Dry skin is prone to cracking, and cracked, irritated skin provides a way for harmful bacteria to enter our bodies. Some alcohol gels contain emollients and these types of gels are less drying.
 - Alcohol based sanitizers do not cause antibacterial resistance.

Hand Hygiene Techniques

- Wet your hands with warm running water.
 - Use a small amount of liquid soap.
 - Avoid using bar soap – bars of soap have scratches and cracks which stay moist and provide a place for bacteria to hide and multiply.
 - Bacteria can grow in pools of soapy water in the soap tray.
 - Rub your hands together to produce lather and continue to rub for at least 15 seconds. Include the areas between your fingers, under your fingernails, the backs of your hands, and the wrists. Move your rings up, down and around to clean the skin under and around your rings.
 - Rinse your hands well with clean, warm, running water for at least 10 seconds. Point your fingers downwards to let the water with the microbes run off your hands.

- In public washrooms, dry your hands with a single use paper towel.
- In public washrooms, do not handle the faucets once your hands are clean. Use a paper towel to turn off the water after you have dried your hands. Then use this paper towel to open the door.
- When using alcohol-based hand sanitizers, use enough product to thoroughly wet all hand surfaces, then rub all hand surfaces until they are dry.
 - Include the areas between your fingers, under your fingernails, the backs of your hands, and the wrists.
 - Include the skin under and around rings by moving your rings up, down and around, getting the alcohol gel on the skin covered by and beside the rings.
- Children touch each other, themselves and objects without washing their hands. Encourage children to wash their hands. Avoid using alcohol sanitizers on children's hands as they tend to put their hands in their mouths.
- Help children with hand washing. Teach them to rub their lathered hands for as long as it takes to sing the Happy Birthday song or Twinkle, Twinkle Little Star.
- Do not wash your hands in standing water, such as in a plugged sink. The water is a soup of bacteria that you would distribute over your hands.

Cleaning and Sanitizing our Homes

- Homes do not require the same cleaning as a hospital.
 - In the Journal of Emerging Infectious Diseases, Dr. Elaine Larson writes that antibacterials and disinfectants should be reserved for use in hospitals and home care of people with suppressed immune systems.
- You do not need antibacterial and disinfecting products in the average home. Ordinary cleaning is often sufficient to remove microbes – washing/scrubbing with warm water and degreasing detergent with good physical scrubbing action. The simple routine of keeping a home clean will help prevent the spread of many diseases.
 - Clean dry surfaces daily in high traffic areas of the home.
 - Clean and sanitize wet or moist surfaces daily.
- Tried and true, common sense products are all that you need.
 - Use a degreasing detergent to clean. Borax (sodium borate) or washing soda (sodium carbonate) in warm water makes a good general purpose cleaner.
 - Use bleach to sanitize if needed (one ounce to one gallon of water). When bleach has dried there is no harmful residue.
 - Vinegar does not kill all bacteria, viruses. It is not recommended as a sanitizer or disinfectant.
- Disinfect surfaces with bleach spray: 1 ounce bleach in 1 gallon water or 1/2 tbsp per 1 quart water.
 - You must wash and rinse the surface before you use bleach.
 - Wipe on the bleach solution with a damp cloth or use a non-aerosol spray bottle. Spray on, wipe over surface with paper towel. Leave wet – do not dry off. Air dry.
 - Use on hard surfaces that have already been scrubbed and rinsed, such as bathrooms, countertops, tables, toys, door knobs, cabinet handles, phones, computer keyboards, diaper change tables.
- Do not use bleach full-strength. Bleach is only effective as a sanitizer when mixed with water to the appropriate strength. There is no odour when properly prepared. When properly prepared, bleach will not fade cloth colours. This diluted bleach solution must be made fresh each day you need it. It will lose its effectiveness the longer it has been prepared.

- Check bleach formulation – Use plain, regular, non-scented. 5.25% hypochlorite is regular strength bleach. Do not use “unscented” formulations. Do not mix bleach with other chemicals.
- Do not add bleach to the soap and water you use for scrubbing and washing surfaces. Bleach will combine with organic particles of dirt and produce chloramines – these are very irritating, toxic and are often mistaken for the ‘bleach smell’.
- Toys:
 - Wash in the top rack of the dishwasher
 - Hand wash hard toys in the sink – wash/scrub with warm water and degreasing soap, rinse well, then immerse in a solution of 2 tbsp bleach per gallon water, then air dry.
 - Boiling water can also be used to sanitize toys.
 - Wash soft toys in washing machine and dry in dryer on hottest setting.
 - Stuffed toys can be vacuumed once weekly. Or throw the toys in the dryer on the hottest setting
 - Wipe board games weekly
- There are some toys, toilet seats and other home products that state they discourage the growth of odour, mildew, and mould. Moulds do not grow on hard, dry surfaces where there is good ventilation. Moulds grow in damp, wet areas with poor air circulation.
 - Anti-fungal products target moulds, not bacteria and viruses.
- Mix baking soda with liquid dish soap to make a soft scrub for hard surfaces. Clean bathroom tubs and tiles with a paste of baking soda, liquid soap and water.
- Windows – use vinegar (1 tbsp to 2 cups) and water in a 1 litre spray bottle. If windows are very dirty, add a ½ tsp liquid soap to 1 litre water. Wipe with newspapers for a streak free finish.
- Use a damp cloth to dust furniture.
- Install safety latches or locks on cupboards containing cleaning products, including soap, washing soda, borax and bleach.
 - Children are more vulnerable to exposure to cleaning chemicals than adults because children’s ability to metabolize, detoxify and excrete chemicals is different than adults.
 - Children are at greater risk of exposure to contaminants in the environment because they have frequent hand-to-mouth actions as they explore their environment; and they are lower to the ground.

Illness in our Homes

- When someone is ill, it is recommended you increase the frequency of cleaning. Sanitize faucet handles, refrigerator door handles, doorknobs, stove handles, cupboard handles, walls, handles, toy chests, cupboards, light switches, night stands, alarm clocks, clock radios, computer keyboards, telephones, desk surfaces and any other surface touched frequently with hands.
- Use a sanitizing solution of ¼ cup household bleach in one gallon water after cleaning up vomit or diarrhoea. This strength of bleach is not needed otherwise. Use with caution as this strength of bleach may cause fading of cloth colours.
- Change bed linens more frequently than once per week if someone is ill.
- Use paper cups or assign each member of the family their own specific drinking cup when someone is ill.
- Use paper towels for drying hands or assign each member of the family their own specific cloth towel when someone is ill. Don’t share hand towels when someone is ill. Don’t share bath towels or facecloths when someone is ill.
- At home, change cloth hand towels daily during cold and flu season.
- Cover nose and mouth with facial tissue when coughing or sneezing. Use facial tissues when blowing your nose. Use only once, then discard. Then wash your hands before you touch anything.

- Wash your hands before visiting someone who is ill. Avoid touching other members of the family if you are ill.
- If underwear is visibly soiled, wash in hot water and dry on the hottest setting. It is not necessary to separate underwear and wash it last if it is not visibly soiled.
- Dry clothes completely on the warmest setting possible.
- Wash your hands frequently.
- Discard your toothbrush once you get well.

Bathroom

- Wash bath towels, hand towels, face cloths separately from other clothes. Use hot wash water for towels. Dry on hottest setting.
- Cleaning the toilet bowl: Put one cup of borax in the bowl and scrub with toilet brush. Leave overnight, rescrub and flush.
- Sanitize the outer surfaces of the toilet with bleach solution (one ounce per gallon of water).
- Put the lid down on the toilet when you flush – droplets fly!
- Use a squeegee to remove water and soap from the tiles on the walls after a shower. This virtually eliminates the need to use harsh chemical cleaners to dissolve the hard deposits. When you remove the water from the wall tiles after a shower, you have also reduced the ability for moulds to grow. Moulds grow in moist areas with poor air circulation, such as bathrooms.
- Store toothbrushes in a closed cupboard.
- Don't share razors.

Other

- Old running shoes are breeding grounds for bacteria and fungus because they are often damp and there is poor air circulation inside the shoes. Wash your running shoes. Replace insoles.
- When at the gymnasium, keep clothing or a towel between you and shared surfaces such as workout equipment, locker room benches or saunas. Don't share towels at the gym.
- Don't share cosmetics, including mascara and eye-liner.
- Keep dogs and cats off the beds and upholstered furniture.
- The occasional dog lick of your face is OK, but it is good to know what the dog licked just before it licked your face. Wash your hands after playing with your pets.
- Avoid reptilian or amphibian pets for children.