

# Public Health for Kids



An information newsletter for Childcare Providers

## Opening Remarks

Welcome to the Spring/Summer edition of our day-care newsletter. We have changed our name but our *Focus* continues to be the prevention of infections and the spread of communicable disease in child care programs. We hope that the information we provide is valuable to your setting as well as in your personal lives. You are welcome to use any of our information for your own parent newsletters.

To ensure that we are addressing the needs of childcare providers in Grey Bruce, both home providers and licensed facilities are welcome to send us your suggestions for articles.

### Contents:

- West Nile Virus (WNV) and Children
- The Mosquito Bite
- All About the Immune System
- Pinworms
- Outbreak of Staphylococcal Food-Borne Illness at an Edmonton Daycare
- Petting Zoos
- Vacs Facts

### Enclosures:

- ◆ Safety Tips on Using Personal Insect Repellents
- ◆ Facts - West Nile Virus, Schools, Summer Camps and Daycares
- ◆ Colouring Picture

against mosquito bites.



Anyone can become infected with the virus if bitten by an infected mosquito. Children are no more susceptible to a WNV infection than they are to any other kind of infection. Most people in fact, who are bitten by mosquitoes carrying the WNV do not experience any symptoms or have a mild illness that may go unnoticed.

If a child is bitten at daycare, do not panic. Most mosquitoes are not infected with WNV. Even in areas where mosquitoes are known to carry the virus, less than 1% are infected. The chance of acquiring WNV illness from a single mosquito bite is slight.

Most people infected by WNV have no symptoms at all or have a mild illness such as fever, headache, muscle weakness, and body aches. Parents or caregivers should contact a doctor immediately if a child develops symptoms such as high fever, confusion, muscle weakness, severe headaches, stiff neck or if his or her eyes become sensitive to light.

## Prevent Mosquito Bites!

- After a rainfall inspect the playground for pails, toys, swing seats and other things in the play area that collect water. Warm, shallow standing water is a perfect place for mosquitoes to breed. Especially *Culex* species.

- Keep gutters clean of leaves and debris - a favourite breeding area for some species of mosquitoes.
- Repair any depressions in the yard that might hold water for several days.
- Avoid activities in the early morning and early evening, when mosquitoes are most active.
- Cover up. Wear long pants, long-sleeved shirts, socks and shoes to minimize the possibility of exposure to mosquitoes.
- Use an insect repellent containing 10% DEET or less. An instruction pamphlet concerning the proper use of DEET products is attached.

### What if a Dead Crow is Found on our Playground?

Call the public health unit to report the sighting. The health unit may not pick up all dead birds, however, we are interested in the report.

The bird should be removed from the playground as soon as possible. The carcass will attract insects and rodents that will present additional risks to children.

#### Things to remember:

- Do not handle the bird with bare hands.
- Wear heavy-duty kitchen gloves to handle the bird.



- Double bag the carcass and seal the bag.
- Place it in your regular garbage.
- **DO NOT** bury in a vegetable garden or an area where digging may take place.

### The Mosquito Bite!

There are thousands of different kinds of mosquitoes in many different sizes and colours. The female mosquito needs blood from vertebrates (animals that have a spine) to lay eggs and produce more mosquitoes. She has a special part of her mouth that she uses to suck blood, and her saliva (spit) thins the blood so she can drink it. In fact, it's the mosquito's saliva that makes the bites itch!

A person who gets bitten by a mosquito will notice a **wheel**, which is a bump around the bite. The wheel will be round, with pink or red around the edge and white in the middle. The wheel will itch a lot. When the wheel disappears, the itch may remain. \_\_\_\_\_

#### What To Do?

If a child has been bitten by a mosquito, wash the bite with soap and water. Put on some calamine lotion to help stop the itching, or use an anti-itch cream available at the drugstore. Placing an ice pack on the bite will also help.

For more information on WNv in Grey Bruce visit our website.

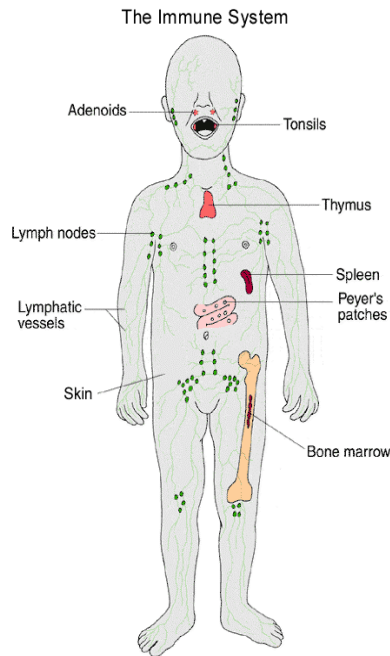
### All About the Immune System

#### What is the Immune System?

The purpose of the immune system is to keep infectious microorganisms, such as certain bacteria, viruses, and fungi, out of the body, and to destroy any infectious microorganisms that do invade the body. The immune system is made up of a complex and vital network of cells and organs that protect the body from infection.

The organs involved with the immune system are called the lymphoid organs, that affect growth, development, and the release of lymphocytes (a certain type of white blood cell). The blood vessels and lymphatic vessels are important parts of the lymphoid organs, because they carry the

lymphocytes to and from different areas in the body. Each lymphoid organ plays a role in the production and activation of lymphocytes. Lymphoid organs include:



- adenoids (two glands located at the back of the nasal passage)
- blood vessels (the arteries, veins, and capillaries through which blood flows)
- bone marrow (the soft, spongy tissue found in bone cavities)
- lymph nodes (small organs shaped like beans, which are located throughout the body and connect via the lymphatic vessels)
- lymphatic vessels (a network of channels throughout the body that carries lymphocytes to the lymphoid organs and bloodstream)
- Peyer's patches (lymphoid tissue in the small intestine)
- spleen (a fist-sized organ located in the abdominal cavity)
- thymus (two lobes that join in front of the trachea behind the breast bone)
- tonsils (two oval masses in the back of the throat)

### What are Lymphocytes?

Lymphocytes are a type of infection-fighting white blood cell which are vital to an effective immune system.

### How are Lymphocytes Formed?

The precursors of all blood cells, including immune cells such as lymphocytes, are produced in the bone marrow. Certain cells will become part of the group of lymphocytes, while others will become part of another type of immune cells known as phagocytes. Once the lymphocytes are initially formed, some will continue to mature in the bone marrow and become "B" cells. Other lymphocytes will finish their maturation in the thymus and become "T" cells. B and T cells are the two major groups of lymphocytes that recognize and attack infectious microorganisms. Once mature, some lymphocytes will be housed in the lymphoid organs, while others will travel continuously around the body through the lymphatic vessels and bloodstream.

### How Do Lymphocytes Fight Infection?

Although each type of lymphocyte fights infection differently, the goal of protecting the body from infection remains the same. B cells produce specific antibodies to infectious microorganisms, while T cells kill infectious microorganisms by killing the affected body cells. In addition, T cells release chemicals, called cytokines. Other types of white blood cells, such as phagocytes ("engulfing" cells) and natural killer cells (cytotoxic cells), actually destroy the infectious microorganisms.

### What are Disorders of the Immune System?

When the immune system does not function properly, a number of diseases can occur. Allergies and hypersensitivity to certain substances are considered immune system disorders. In addition, the immune system plays a role in the rejection process of transplanted organs or tissue. Other examples of immune disorders include:

- autoimmune diseases, such as juvenile diabetes, rheumatoid arthritis, and lupus
- immunodeficiency diseases, such as acquired immune deficiency syndrome (AIDS) and severe combined immunodeficiency (SCID).

## What is an infectious disease?

Infectious diseases can range from common illnesses, such as the cold, to deadly illnesses, such as AIDS.

An infectious disease is caused by one, or more, of the following:

- viruses
- bacteria
- parasites
- fungi

Source: National Institute of Allergy & Infectious Diseases

## PINWORMS

### Signs and Symptoms:

Pinworm is an intestinal infection caused by tiny parasitic worms measuring about 1/2 inch in length (about 1 cm). Other names for a pinworm infection are "seatworm infection," "threadworm infection," "enterobiasis," or "oxyuriasis."

Sometimes these worms can actually be seen in the area around a child's rectum or in the stool. They may have the appearance of light-colored threads on the move. Often a person can have a pinworm infection without having any symptoms, but when symptoms are present, the most common one is itching around the rectum. This itching is usually worse at night and is caused by worms migrating to the area around the rectum to lay their eggs. When a child scratches the itchy area, eczema or a bacterial infection around the rectum can result. In girls, pinworm infection can spread to the vagina and cause a vaginal discharge.

### Description:

Pinworm is an intestinal infection by a parasite - a worm called *Enterobius Vermicularis*. Pinworm infections probably affect about 200 million people across the world, including about 40 million people in the United States and Canada. Of



all age groups, school children are most at risk for pinworm infections.

People are infected by unknowingly eating microscopic pinworm eggs. The eggs pass into the digestive system and hatch in the small intestine. From the small intestine, pinworm larvae continue their journey to the large intestine, where they live as parasites - their heads attached to the inside wall of the bowel. About 2 to 4 weeks after the pinworm eggs were originally acquired, adult female pinworms begin migrating from the large intestine to the area around the rectum. There they will lay new pinworm eggs, which trigger itching around the rectum. When someone scratches the itchy area, microscopic pinworm eggs are transferred to their fingers. Contaminated fingers can carry pinworm eggs to many different surfaces, including: bed linens, towels, clothing (especially underwear and pajamas), toilets, bathroom fixtures, drinking glasses, eating utensils, toys, sandboxes, and food. Pinworm eggs are able to live on a surface for 2 to 3 weeks.

### Prevention:

You can prevent pinworm infections by reminding children to wash their hands after using the toilet and before eating. Children should shower or bathe every day, and change underwear daily.

If a child has a pinworm infection, all members of their household will need to be treated with medication. This will help prevent the infection from coming back in most cases. If more than one case occurs at daycare, then all childcare providers, children and children's families should be treated to break the chain of infection.

### Incubation:

After pinworm eggs are ingested, it takes about 2 to 4 weeks for itching around the rectum to begin.

### Duration:

Pinworm can usually be treated with one dose of

medication. After 2 weeks, the child's doctor may repeat the dose.

### Contagiousness:

Pinworm infections are contagious. Persons become infected by inadvertently eating microscopic pinworm eggs that can be found on many different surfaces, including: bed linens, clothing, food, drinking glasses, eating utensils, toilet seats, bathroom fixtures, toys, and the sand in sandboxes.

Pinworms are diagnosed by placing a sticky piece of cellophane tape against the child's rectum. Pinworm eggs will stick to the tape and can be seen under a microscope in a laboratory.

### Home Treatment:

If your child has a pinworm infection, follow your child's doctor's directions for giving pinworm medicine to everyone in your

household. Routine household cleaning measures will help reduce the spread of pinworm infection to the family.

### When to Call the Doctor:

Consider calling the doctor if the child complains of an itchy rectum or always seems to be scratching the rectal or genital area. You might also want to consider asking the doctor about pinworms (among other causes) if a child seems to have trouble sleeping or has begun to **wet the bed.**

Source: [www.kidshealth.org](http://www.kidshealth.org)

## Outbreak of Staphylococcal Food-Borne Illness at an Edmonton Daycare

The local health department was notified by an emergency room physician that several children attending the same daycare centre had presented to emergency after sudden onset of vomiting that day.

Food served for lunch at the daycare shortly before onset of vomiting in attendees was initially investigated as the illness transmission vehicle, as this was a common exposure among cases in this outbreak. An on-site visit was done by the public health unit staff to interview the daycare operator, discuss food preparation methods for lunch served that day, collect food samples and conduct an inspection of the day care. The emergency room physician was instructed to collect vomitus and stool samples from the outbreak cases that

had presented to the emergency department.

Nineteen of the 28 attendees had onset of vomiting starting within 45 minutes after lunch was served that day. One daycare staff member also reported illness. One vomitus sample was positive for *Staphylococcus aureus* bacteria, and staphylococcal enterotoxins A and B. A leftover sample of food served for lunch, chicken risotto, was found to contain high levels of *S. aureus* (more than 5,600,000 bacteria per gram of food), and was also positive for staphylococcal enterotoxins A and B.



A total of 25 daycare attendees consumed the chicken risotto, of which 19 (76%) had onset of vomiting. One staff member reportedly had onset of vomiting that day, but did not consume the chicken dish. No deficiencies were noted in the reported food handling procedure used to prepare the chicken risotto. The dish was prepared by the operator from "scratch", the morning of the same

day it was served. Ingredients included broiled chicken, rice, fresh celery and onions, frozen vegetables and canned soup.

Discussion

Staphylococcal foodborne illness occurs as a result of consumption of food containing clinically significant levels of a pre-formed toxin (enterotoxin) produced by staphylococcus aureus bacteria; typically, large numbers of these bacteria (i.e. >100,000 bacteria per gram of food) are required to produce enough toxin to cause illness. It is estimated that 25% of the population carry S. aureus in their nasal passages or as part of their normal skin flora. Outbreaks usually occur as a result of direct handling of food by an infected food handler, followed by temperature abuse of the food, that allows a small amount of the bacteria to grow to high numbers and produce significant amounts of enterotoxin. Enterotoxins produced by S. aureus are heat-stable and thus, even thorough cooking of the contaminated food once the toxin is formed will not necessarily prevent illness. Because it is a toxin that causes illness, the incubation periods is usually relatively short, (30 minutes – 8 hours); the illness is short lived (less than 24 hours), with vomiting as the predominant symptom, sometimes associated with diarrhea and fever.

Food served for lunch was the implicated source of this outbreak. However, the ultimate cause of the outbreak could not be confirmed, as no food handling deficiencies were admitted by the operator.

Temperature abuse of some or all of the products would account for the high level of toxins in the food.

This outbreak is a reminder to all child care providers the importance of having certified trained food handlers on staff. Children are a high-risk population and it will take fewer microorganisms to make them sick from something eaten, than an adult.

Source: Capital Health, Environmental Health Services, Edmonton,

Alberta, Lance Honish, Public Health Inspector, Environmental Health Epidemiologist, Karen Hislop, Public Health Inspector

Petting Zoos

A trip to a petting zoo or farm animal exhibit can be a fascinating outing for a child. Meeting and touching a goat, calf or rabbit is the kind of hands-on learning experience upon which small children thrive. Unfortunately, there can be a downside to these animal encounters. If you're not careful, a child could come home from a petting zoo with germs that can make them sick.

In the past few years, several outbreaks of serious illness have been associated with petting zoos and other exhibits where children come in direct contact with animals. In the year 2000, 51 people, most of them young children, became sick after touching animals at a farm exhibit in Pennsylvania; 16 of them had to be hospitalized. In Ontario in 1999, at least 159 people came down with diarrhea after touching goats at a petting zoo. In both of these instances, EE. coli 0157 was identified as the cause of the illnesses. However, E. coli is not the only germ that

can be spread by animals in petting zoos.

Pigs, reptiles and birds (including chicks and ducklings), can carry Salmonella. A variety of animals, including



cattle, deer and sheep, can carry the parasite

Cryptosporidium. In rare cases, contact with petting zoo animals can even put people at risk for rabies. In 1996, about 400 people in New York State had to have shots to prevent rabies after coming in contact with a rabid goat at a local fair.

Taking Precautions

Does this mean that you should cross petting zoos off your list of outings? Experts say no. They do advise, however, that you take precautions to minimize the risk.

Doctors recommend that hand-to-mouth activities such as eating, drinking, and carrying toys and pacifiers should be forbidden in animal contact areas.

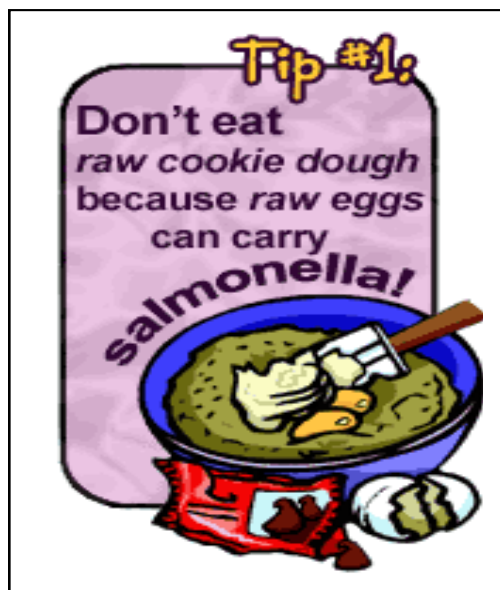


You may also want to think twice about taking your child to a petting zoo if you will have to supervise other children at the same time. Children need to be watched at every moment when they are around animals.

One other precaution that you may want to take before visiting a petting zoo is to find out whether the animals are healthy and well cared for. It's also a good idea to ask whether the animals have a regular source of veterinary care, whether they have received all the recommended immunizations (such as rabies shots), and whether they are removed from the exhibit if they show any sign of illness. Sick animals and those too young to be immunized against rabies should never be included in exhibits where people have direct contact with these animals. However, even healthy animals can carry germs that cause human diseases.

That's why sanitary precautions and supervision are essential, even at the best-run petting zoos.

Source: [www.preschoolerstoday.com](http://www.preschoolerstoday.com)



## Vacs Facts

*LeAnn White, Public Health Nurse, Vaccine Preventable Disease Program.*

The most frequently “forgotten” vaccination for children is the one due at 18 months of age.

The 18 month vaccination will protect children against diphtheria, pertussis (whooping cough), tetanus (lockjaw), polio and haemophilus influenza-B (a meningitis most common in infants). Immunization carried out in accordance with the recommended schedule will provide protection for most children against the diseases mentioned. Vaccination should not be delayed because of minor illnesses such as colds, coughs or low-grade fevers. Children with minor illnesses of this sort respond normally to vaccination and have no added side effects.

In Ontario, the *Day Nurseries Act* requires a written record of each child’s immunization status to be maintained at the day care site. Physicians do not share their patients’ information. It is up to the parents and the day care provider to ensure the immunization records of the children in their care are complete and up-to-date. Ensuring that children’s vaccinations are complete and having this information at hand will minimize the confusion and disruption in the event of a disease outbreak in day nurseries.

## Hand Washing

W L G I D G X E B R Q N S H P  
 H A W B N O N A S J L L L E A  
 A I S H Z F C I D N E F V A O  
 E R H H S T L T H W I D I L S  
 H E L P E S H U O G O R N T X  
 R T C R W A N T E R U A F H X  
 R C I C N G R Y G N A O E Z O  
 A A Y D L E G J C M Z X C L A  
 I B S M P B U R C S X A T T D  
 D I L A F I N G E R N A I L S  
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 S E P V K Q X G H Q B O L D T

ANTIBACTERIAL  
 BACTERIA  
 BUBBLES  
 COLD  
 COUGHING

FINGERNAILS  
 HANDS  
 HEALTH  
 INFECTON  
 INFLUENZA

SCRUB DOCTOR  
 SOAP RINSE  
 SICK  
 VIRUSES  
 WASH



