

## 4: IS “NATURAL” IMMUNITY BETTER THAN VACCINE IMMUNITY?

### 4.3 Summary of diseases and vaccines, Canada

DISEASE	AVERAGE NUMBER OF CASES AND RELATED DEATHS (per year)		EFFECTS OF DISEASE	SIDE EFFECTS OF VACCINE
	Before vaccine	After vaccine		
<b>Diphtheria</b>	12,000 cases with 1,000 deaths	0 – 5 cases with 0 deaths	Severe sore throat, marked weakness, nerve damage, heart failure. Death in 10%.	DTaP vaccine: 20% of infants have local redness, pain; less than 5% have fever; more have redness and swelling with booster at 4 – 6 years.
<b>Tetanus</b>	60 – 75 cases with 40 – 50 deaths	0 – 2 cases and no deaths since 1991	Toxin affects spinal cord leading to painful muscle spasms and seizures.	See DTaP above. Local redness and pain common with adult booster.
<b>Pertussis</b>	30,000 – 50,000 cases with 50 – 100 deaths	3,000 cases with 1 – 5 deaths	Severe coughing spasms lasting 3 – 6 weeks, pneumonia, convulsions. Brain damage or death: 1 of every 400 infants.	See DTaP above. Risk of brain damage after pertussis vaccine is too small to be measured.
<b>Polio</b>	2,000 cases in last epidemic (1959)	0	Muscle paralysis in 1 out of 100 persons infected with polio. Death in severe cases.	Inactivated polio vaccine (IPV) is used in Canada. No risk of disease from vaccine. Given combined with DTaP (see above for side effects).
<b>Hib</b>	1,500 cases of meningitis and 1,500 cases of infections of blood, bone, lungs, skin, joints	About 30 cases	Meningitis kills in 5% of cases and leads to brain damage and deafness in 10 – 15% of survivors.	Given in combination with DTaP/IPV (see above for side effects).
<b>Measles</b>	95% of children have measles by age 18, or 300,000 cases with 300 deaths and 300 children with brain damage	Less than 20 cases with 0 deaths	Severe bronchitis, high fever, rash for 7 – 14 days; death in 1 per 1,000 cases; encephalitis in 1 per 1,000 cases.	Given combined with mumps and rubella vaccines (MMR). 5 – 10% have fever with or without rash 8 – 10 days after vaccine. No risk of disease from vaccine. Risk of encephalitis 1 case per million doses. 1 in 24,000 develops low platelets.
<b>Mumps</b>	30,000 cases	90 cases	Fever, swollen salivary glands. No visible illness in more than 50% of cases. Encephalitis in 1 per 200 cases; deafness in 1 per 200,000 cases.	See MMR, above.

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<b>Rubella</b>	85% of children have rubella by age 20, or 250,000 cases. About 200 cases of congenital rubella syndrome.	25 cases. 0 – 3 babies with congenital rubella syndrome born to unvaccinated mothers.	Fever, swollen glands, rash. No symptoms in about 50% of cases. Severe damage to fetus if mother infected during first trimester of pregnancy.	See MMR, previous. Congenital rubella syndrome has not been observed after vaccination of pregnant women. 25% of vaccinated adult women have joint pain.
<b>Meningococcus</b>	200 – 400 cases with 20 – 40 deaths	Too new to see effect.	Deaths in 10%, brain damage, deafness, amputations, skin loss in 10% of survivors.	Minor local redness, swelling and pain in 15% of recipients.
<b>Pneumococcus</b>	3,000 cases of severe disease (meningitis, bacteremia, pneumonia) in children under age 5	250 cases	Deaths in approximately 30 – 50 children; 15 – 20% of survivors of meningitis have brain damage, deafness.	Minor local redness, swelling and pain in 15% of recipients.
<b>Varicella</b>	300,000 cases	87.5% reduction in the US.	Hospitalization in 1,000 and death in 10 cases due to pneumonia, encephalitis, severe skin infections; shingles (zoster) later in life.	Minor local reaction; rash in about 5% of children.
<b>Hepatitis B</b>	20,000 new cases per year with 480 – 500 deaths	Less than 1,000	Death from complications of chronic infections (cirrhosis, liver cancer) or from severe acute illness.	Minor local redness, swelling and pain.
<b>Rotavirus</b>	400,000 cases per year with 2 – 4 deaths in children under age 2	Too new to see effect	Death from severe dehydration caused by profuse, watery diarrhea.	No significant reactions
<b>Human Papillomavirus</b>	1,350 cases of cervical cancer per year with 400 deaths and 200 deaths from other forms of cancer caused by HPV	Too new to see effect	Death from cervical and other forms of cancer.	Mild pain and redness at injection site.

Your Child's Best Shot, 3rd edition, Canadian Pediatric Society