GROWTH

- **Important:** Corrected age should be used at least until 24 to 36 months of age for premature infants born at <37 wks gestation.
- *Measuring growth* - The growth of all full term infants, both breastfed and non breastfed, and preschoolers should be evaluated using growth charts from the 2006 World Health Organization Child Growth Standards (birth to 5 years) with measurement of recumbent length (birth to 2-3 years) or standing height (≥ 2 years), weight, and head circumference (birth to 2 years). www.who.int/childgrowth/standards/en/

NUTRITION

- Pediatric nutrition guidelines – Nutrition for Healthy Term Infants
  - www.hc-sc.gc.ca/fn-an/pubs/infant-nourrisson/nut_infant_nourrisson_term_e.html
  - http://www.osnpph.on.ca/pdfs/ImprovingOddsJune-08.pdf
- **Breastfeeding**: **Exclusive breastfeeding** is recommended for the first six months of life for healthy term infants. Breast milk is the optimal food for infants, and breastfeeding (with complementary foods) may continue for up to two years and beyond unless contraindicated. Breastfeeding reduces gastrointestinal and respiratory infections. Maternal support (both antepartum and postpartum) increases breastfeeding and prolongs its duration. Early and frequent mother-infant contact, rooming in, and banning handouts of free infant formula increase breastfeeding rates.
- Routine **Vitamin D supplementation** of 400 IU/day (800 IU/day in northern communities) is recommended for all breastfed full term infants until the diet provides a sufficient source of Vitamin D (~ 1 year of age). Formula may only supply a portion of the recommended daily vitamin D intake if less than 1000 mL (33 oz) is consumed daily.
  - Breastfeeding - www.cps.ca/english/statements/N/BreastfeedingMar05.htm
  - Weaning - www.cps.ca/english/statements/CP/cp04-01.htm
  - Vitamin D - www.cps.ca/english/statements/ii/fnim07-01.htm
  - Colic - www.cps.ca/english/statements/N/NutritionNoteSept03.htm
  - Ankyloglossia and breastfeeding - www.cps.ca/english/statements/CP/cp02-02.htm
  - Maternal medications when breastfeeding - Medications and Mothers' Milk, T. Hale (2008)
  - Motherisk - www.motherisk.org
- Milk consumption range is consensus only & is provided as an approximate guide.
- Soy-based formula is not recommended for routine use in term infants as an equivalent alternative to cow's milk formula, or for cow milk protein allergy, and is contraindicated for preterm infants. www.cps.ca/english/statements/N/InfantSoyConcern.htm
- *Transition to lower fat diet*: A gradual transition from the high-fat infant diet to a lower-fat diet begins after age 2 years as per Canada's Food Guide.
- Encourage a healthy diet as per Canada's Food Guide
  - www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html

INJURY PREVENTION

In Canada, unintentional injuries are the leading cause of death in children and youth. Most of these preventable injuries are caused by motor vehicle collisions, drowning, choking, burns, poisoning, and falls.

- **Transportation in motor vehicles**: www.cps.ca/english/statements/IP/IP08-01.htm
  http://www.safekidscanada.ca/SKCPublicPolicyAdvocacy/custom/BoosterSeatLegislationChart.pdf
  Children < 13 years should sit in the rear seat. Keep children away from all airbags.
  Install and follow size recommendations as per specific car seat model and keep child in each stage as long as possible.
  Use rear-facing infant seat until at least 1 year of age AND 10 kg (22 lb).
  Use forward-facing child seat from at least 1 year of age AND 10 - 22 kg (22 - 48 lb) and up to 122 cm (48"). Maximum ht/wt may vary with car seat model.
  Use booster seat from at least 18 - 36 kg (40 - 80 lb) and up to 145 cm (4'9").
  Use lap and shoulder belt in the rear seat for older children over 8 yrs who are at least 36 kg (80 lb) and 145 cm (4'9") and fit vehicle restraint system.
- **Bicycle**: wear **bike helmets**. Replace if heavy impact or sign of damage.
- Drowning: www.cps.ca/english/statements/IP/IP03-01.htm
  - *Bath safety*: Never leave a young child alone in the bath. Do not use infant bath rings or bath seats.
  - *Water safety*: Recommend adult supervision, training for adults, 4-sided pool fencing, lifejackets, swimming lessons, and boating safety to decrease the risk of drowning.
- Choking: Avoid hard, small and round, smooth and sticky solid foods until age 3 years. Use safe toys, follow minimum age recommendations, and remove loose parts and broken toys.
- Burns: *Install smoke detectors in the home on every level.*
  Keep hot water at a temperature < 49°C.
- **Poisons:** Keep medicines and cleaners locked up and out of child's reach. Have Poison Control Centre number handy. *Use of ipecac is contraindicated in children*.
- Falls: Assess home for hazards- never leave baby alone on change table or other high surface; use window guards and stair gates. Baby walkers are banned in Canada and should never be used. Advise against trampoline use at home. www.cps.ca/english/statements/IP/IP07-01.htm
- **Safe sleeping environment**: www.cps.ca/english/statements/CP/cp04-02.htm
  - **Sleep position and SIDS/Positional plagiocephaly:** Healthy infants should be positioned on their backs for sleep. Their heads should be placed in different positions on alternate days. While awake, infants should have supervised tummy time. Counsel parents on the dangers of other contributory causes of SIDS such as overheating, maternal smoking or second-hand smoke.
  - **Bed sharing:** Advise against bed sharing.
  - **Room sharing:** Encourage putting infant in a crib that meets current Canadian safety regulations in parents' room for the first 6 months of life. Room sharing is protective against SIDS.
- **Firearm safety/removal:** There is evidence-based association between a firearm in the home and increased risk of unintentional firearm injury, suicide, or homicide.

For more safety information:
www.safekidscanada.ca www.cps.ca/english/publications/InjuryPrevention.htm

PROBLEMS AND PLANS (SCREENING)

Anemia screening: All infants from high-risk groups for iron deficiency anemia require screening between 6 and 12 months of age, e.g. Lower SES; Asian; First Nations children; low-birth-weight infants, and infants fed whole cow's milk during their first year of life.
Hemoglobinopathy screening: Screen all neonates from high-risk groups, e.g. Asian, African, and Mediterranean.

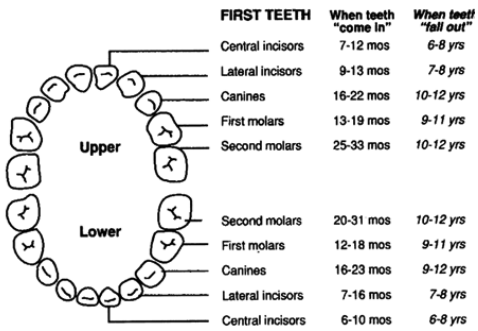
OTHER

- **Second-hand smoke exposure**: contributes to childhood illnesses such as URTI, middle ear effusion, persistent cough, pneumonia, asthma, and SIDS.
- Advise parents against using **OTC cough/cold medications**.
  - http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/_2008/2008_184-eng.php
- *Complementary and alternative medicine (CAM)*: Questions should be routinely asked on the use of homeopathy and other complementary and alternative medicine therapy or products, especially for children with chronic conditions.
  - www.cps.ca/english/statements/DT/DT05-01.htm
  - Homeopathy - www.cps.ca/english/statements/CP/cp05-01.htm
- *Pacifier use* may decrease risk of SIDS and should not be discouraged in the 1st year of life after breastfeeding is well established, but should be restricted in children with chronic/recurrent otitis media. - www.cps.ca/english/statements/CP/cp03-01.htm
- Fever advice/thermometers: Fever ≥ 38°C in an infant < 3 months needs urgent evaluation. Ibuprofen and acetaminophen are both effective antipyretics. Acetaminophen remains the first choice for antipyresis under 6 months of age; thereafter ibuprofen or acetaminophen may be used. Alternating acetaminophen with ibuprofen for fever control is not recommended in primary care settings as this may encourage fever phobia, and the potential risks of medication error outweigh measurable clinical benefit.
  - Temperature measurement - www.cps.ca/english/statements/CP/cp00-01.htm
- Footwear: Shoes are for protection, not correction. Walking barefoot develops good toe gripping and muscular strength - http://www.cps.ca/english/statements/CP/FootwearChildren.htm
- Healthy Active Living: Encourage increased physical activity and decreased sedentary pastimes with parents as role models.
  - www.cps.ca/english/statements/HAL/HAL02-01.htm
  - Media use - www.cps.ca/english/statements/PP/pp03-01.htm
- Sun exposure/sunscreens/insect repellents: Minimize sun exposure. Wear protective clothing, hats, properly applied sunscreen with SPF ≥ 30 for those > 6 months of age. No DEET in < 6 months; 6-24 months 10% DEET apply max once daily; 2 - 12 yrs 10% DEET apply max TID.
- *Pesticides*: Avoid pesticide exposure. Encourage pesticide-free foods.
  - http://www.ocfp.on.ca/local/files/Communications/Current%20Issues/Pesticides/Final%20Paper%2023APR2004.pdf
- *Lead Screening* is recommended for children who:
  - in the last 6 months lived in a house or apartment built before 1950;
  - live in a home with recent or ongoing renovations or peeling or chipped paint.
  - have a sibling, housemate, or playmate with a prior history of lead poisoning;
  - have been seen eating paint chips.

  Even for blood levels less than 10ug/dL, evidence suggests an association, and perhaps partial causal relationship with lower cognitive function in children.
  http://www.pulsus.com/journals/toc.jsp?sCurrPg=journal&jnlKy=5&isuKy=444
- Websites about environmental issues:
  - CPCHE - www.healthyenvironmentforkids.ca/
  - Health and housing - www.cmhc-schl.gc.ca/en/inpr/bude/heho/index.cfm
  - Environmental health section of CDC - www.cdc.gov/node.do/id/0900f3ec8000e044
  - Commission for Environmental Cooperation – www.cec.org/children

Dental Care:

- **Dental Cleaning: Fluoridated toothpaste** should be used twice per day with a minimum amount of water used to rinse the mouth after brushing. As excessive swallowing of toothpaste by young children may result in dental fluorosis, children under 6 years of age should be supervised during brushing and only use a small amount (e.g. pea-sized portion) of toothpaste. Children under 3 years of age should have their teeth brushed by an adult using only a smear of toothpaste.



  - Fluoride supplements are not recommended under 6 yrs of age unless the child is considered at high risk for dental caries. www.cda-adc.ca/_files/position_statements/fluorides.pdf
  - *To prevent early childhood caries*: avoid sweetened liquids and constant sipping of milk or natural juices in both bottle and cup.

PHYSICAL EXAMINATION

- Vision screening: www.cps.ca/english/statements/cp/cp09-02.htm
  - Check **Red Reflex** for serious ocular diseases such as retinoblastoma and cataracts.
  - **Corneal light reflex/cover-uncover test & inquiry for strabismus**: With the child focusing on a light source, the light reflex on the cornea should be symmetrical. Each eye is then covered in turn, for 2 – 3 seconds, and then quickly uncovered. The test is abnormal if the uncovered eye "wanders" OR if the covered eye moves when uncovered.
- *Hearing screening/inquiry* – Universal newborn hearing screening (UNHS) effectively identifies infants with congenital hearing loss & allows for early intervention. Any parental concerns about hearing acuity or language delay should prompt a rapid referral for hearing assessment. Formal audiology testing should be performed in all high-risk infants, including those with normal UNHS. Older children should be screened if clinically indicated.
  http://pediatrics.aappublications.org/cgi/reprint/122/1/e266
- Muscle tone – Physical assessment for spasticity, rigidity, and hypotonia should be performed.
- Hips – There is insufficient evidence to recommend routine screening for developmental dysplasia of the hips, but examination of the hips should be included in the periodic health exam. http://pediatrics.aappublications.org/cgi/reprint/117/3/898
- Adenotonsillar hypertrophy and presence of sleep-disordered breathing warrant assessment re. obstructive sleep apnea. http://aappolicy.aappublications.org/cgi/reprint/pediatrics;109/4/704.pdf

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DEVELOPMENT

Maneuvers are based on the Nipissing District Development Screen™ (www.ndds.ca) and other developmental literature. They are not a developmental screen, but rather an aid to developmental surveillance. They are set **after** the time of normal milestone acquisition. Thus, absence of any one or more items is considered a high-risk marker and indicates consideration for further developmental assessment, as does parental or caregiver concern about development at any stage.

- "Best Start" website contains resources for maternal, newborn, and early child development - www.beststart.org/
- OCFP Healthy Child Development: Improving the Odds publication is a toolkit for primary healthcare providers - www.cfpc.ca/English/OCFP/CME/HCDMainproC/default.asp?s=1
- www.cdc.gov/ncbddd/child/screen_provider.htm
- Centre of Excellence for Early Childhood Development: www.child-encyclopedia.com

BEHAVIOUR

Crying: Excessive crying may be caused by behavioral or physical factors or be the upper limit of the normal spectrum. Evaluation of these etiological factors and of the burden for parents is essential and raises awareness of the potential for the shaken baby syndrome.
Shaken baby syndrome: www.cps.ca/english/statements/PP/cps01-01.htm
Night waking: occurs in 20% of infants and toddlers who do not require night feeding. Counselling around positive bedtime routines (including training the child to fall asleep alone), removing nighttime positive reinforcers, keeping morning awakening time consistent, and rewarding good sleep behaviour has been shown to reduce the prevalence of night waking, especially when this counselling begins in the first 3 weeks of life.

- www.mja.com.au/public/issues/182_05_070305/sym10800_fm.html

Swaddling: Proper swaddling of the infant for the first 6 months of life may promote longer sleep periods but could be associated with adverse events (hyperthermia, SIDS, or development of hip dysplasia) if misapplied. A swaddled infant must always be placed supine with free movement of hips and legs, and the head uncovered.

- http://pediatrics.aappublications.org/cgi/reprint/120/4/e1097

PARENTING/DISCIPLINE

Inform parents that warm, responsive, flexible & consistent discipline techniques are assoc with positive child outcomes. Over reactive, inconsistent, cold & coercive techniques are assoc with negative child outcomes.

- www.cps.ca/english/statements/PP/pp04-01.htm
- http://www.cheo.on.ca/english/pdf/joint_statement_e.pdf
- www.cfpc.ca/English/OCFP/CME/HCDMainproC/default.asp?s=1 (section 3)

Refer parents of children at risk of, or showing signs of, behavioral or conduct problems to structured parenting programs which have been shown to increase positive parenting, improve child compliance, and reduce general behavior problems. Access community resources to determine the most appropriate and available research-structured programs.
(eg. The Incredible Years, Right from the Start, COPE program).
http://www.child-encyclopedia.com/en-ca/parenting-skills/how-important-is-it.html

LITERACY

Encourage parents to read to their children within the first few months of life and to limit TV, video and computer games to provide more opportunities for reading.

- http://www.cps.ca/english/statements/PP/pp06-01.htm
- http://pediatrics.aappublications.org/cgi/content/abstract/105/4/S1/927
- Arch Dis Child; 2008;93:554-7

PARENTAL/FAMILY ISSUES - HIGH RISK INFANTS/CHILDREN

- Maternal depression - Physicians should have a high awareness of maternal depression, which is a risk factor for the socio-emotional and cognitive development of children. Although less studied, paternal factors may compound the maternal-infant issues.
  - www.cps.ca/english/statements/PP/pp04-03.htm
- Fetal alcohol spectrum disorder (FASD) - Canadian Guidelines:
  - www.cmaj.ca/cgi/content/full/172/5_suppl/S1
- **Assess home visit need**: There is good evidence for **home visiting by nurses** during the perinatal period through infancy for first-time mothers of low socioeconomic status, single parents or teenaged parents to prevent physical abuse and/or neglect.
  - www.cmaj.ca/cgi/content/full/163/11/1451
- *Risk factors for physical abuse*: low SES; young maternal age (<19 years); single parent family; parental experiences of own physical abuse in childhood; spousal violence; lack of social support; unplanned pregnancy or negative parental attitude towards pregnancy.
- *Risk factors for sexual abuse*: living in a family without a natural parent; growing up in a family with poor marital relations between parents; presence of a stepfather; poor child-parent relationships; unhappy family life.

NONPARENTAL CHILD CARE

Inquire about current child care arrangements. High quality child care is associated with improved paediatric outcomes in all children.
Factors enhancing quality child care include: practitioner general education and specific training; group size and child/staff ratio; licensing and registration/accreditation; infection control and injury prevention; and emergency procedures.

- www.cps.ca/english/statements/CP/cp08-02.htm
- www.cps.ca/english/statements/CP/cp2009-01.htm
- Well Beings: www.caringforkids.cps.ca/wellbeings/index.htm

AUTISM SPECTRUM DISORDER

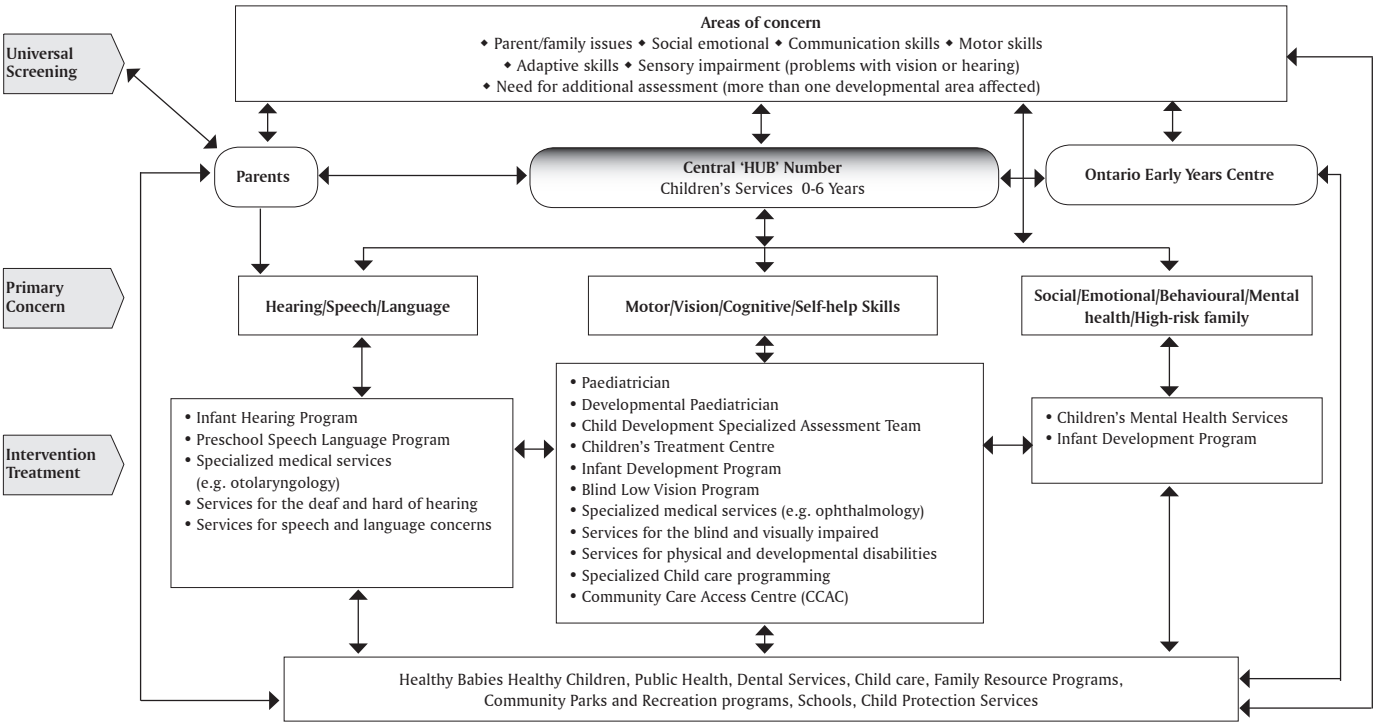
Specific screening for ASD at 18 - 24 months using the M-CHAT should be performed on all children with any of the following: failed items on the social/emotional/communication skills inquiry, sibling with autism, or developmental concern by parent, caregiver, or physician.
If the M-CHAT is abnormal, use the M-CHAT Follow-up Interview to reduce the false positive rate and avoid unnecessary referrals and parental concern. The M-CHAT tool and follow-up interview are found at: www.mchatscreen.com

TOILET LEARNING

The process of toilet learning has changed significantly over the years and within different cultures. In Western culture, a child-centred approach, where the timing and methodology of toilet learning is individualized as much as possible, is recommended.

- www.cps.ca/english/statements/CP/cp00-02.htm
- www.pulsus.com/journals/abstract.jsp?jnlKy=5&atlKy=7859&isuKy=769&isArt=t&HCtype=Consumer

2009 Early Child Development and Parenting Resource System - Ontario



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ROUTINE IMMUNIZATION

National Advisory Committee on Immunization (NACI) recommended immunization schedules for infants, children and youth can be found at the following website:
www.phac-aspc.gc.ca/naci-ccni/

Provincial/territorial immunization schedules may differ based on funding differences. For provincial/territorial immunization schedules, see Canadian Nursing Coalition on Immunization chart on the website of the Public Health Agency of Canada: www.phac-aspc.gc.ca/im/ptimprog-progimpt/table-1_e.html

Additional information for parents on vaccinations can be accessed through: http://www.caringforkids.cps.ca/immunization/index.htm and http://pediatrics.aappublications.org/cgi/reprint/115/5/1428

VACCINE NOTES (Adapted from NACI website: July 28, 2009)

Diphtheria, Tetanus, acellular Pertussis and inactivated Polio virus vaccine (DTaP-IPV): DTaP-IPV vaccine is the preferred vaccine for all doses in the vaccination series, including completion of the series in children < 7 years who have received ≥ 1 dose of DPT (whole cell) vaccine (e.g., recent immigrants).

Haemophilus influenzae type b conjugate vaccine (Hib): Hib schedule shown is for the Haemophilus b capsular polysaccharide – PRP conjugated to tetanus toxoid (Act-HIBTM) or the Haemophilus b oligosaccharide conjugate - HbOC (HibTITERTM) vaccines. This vaccine may be combined with DTaP in a single injection.

Measles, Mumps and Rubella vaccine (MMR): A second dose of MMR is recommended, at least 1 month after the first dose for the purpose of better measles protection. For convenience, options include giving it with the next scheduled vaccination at 18 months of age or at school entry (4-6 years) (depending on the provincial/territorial policy), or at any intervening age that is practical. The need for a second dose of mumps and rubella vaccine is not established but may benefit (given for convenience as MMR). The second dose of MMR should be given at the same visit as DTaP-IPV (± Hib) to ensure high uptake rates. MMR and varicella vaccines should be administered concurrently (at different sites if the combined MMR/varicella vaccine is not available) or separated by at least 4 weeks.

Varicella vaccine: Children aged 12 months to 12 years who have not had varicella should receive one dose of varicella vaccine. Unvaccinated individuals ≥ 13 years who have not had varicella should receive two doses at least 28 days apart. Varicella and MMR vaccines should be administered concurrently (at different sites if the combined MMR/varicella vaccine is not available) or separated by at least 4 weeks.

Hepatitis B vaccine (Hep B): Hepatitis B vaccine can be routinely given to infants or preadolescents, depending on the provincial/territorial policy. For infants born to chronic carrier mothers, the first dose should be given at birth (with Hepatitis B immune globulin), otherwise the first dose can be given at 2 months of age to fit more conveniently with other routine infant immunization visits. The second dose should be administered at least 1 month after the first dose, and the third at least 2 months after the second dose, but again may fit more conveniently into the 4- and 6-month immunization visits. A two-dose schedule for adolescents is an option.
(See also SELECTED INFECTIOUS DISEASES RECOMMENDATIONS below.)

Pneumococcal conjugate vaccine - 7-valent (Pneu-Conj): Recommended schedule, number of doses and subsequent use of 23 valent polysaccharide pneumococcal vaccine depend on the age of the child, if at high risk for pneumococcal disease, and when vaccination is begun.

Meningococcal conjugate vaccine (Men-C): Monovalent vaccine to Type C (Men-C-C) is indicated for all ages, and quadravalent to Types A/C/W/Y (Men-C-ACWY) for age 2 yrs and over. Recommended vaccine, schedule and number of doses of meningococcal vaccine depend on the age of the child and vary between provinces/territories.
Possible schedules include:
- Men-C-C: 2 - 3 doses under 12 mos of age AND booster dose between 12 - 24 mos age.
  OR
- Men-C-C: 1 dose at 12 mos of age.

Men-C-C or Men-C-ACWY booster dose should also be given at 12 yrs of age or during adolescence.

Diphtheria, Tetanus, acellular Pertussis vaccine - adult/adolescent formulation (dTap): a combined adsorbed "adult type" preparation for use in people ≥ 7 years of age, contains less diphtheria toxoid and pertussis antigens than preparations given to younger children and is less likely to cause reactions in older people. This vaccine should be used in individuals > 7 years receiving their primary series of vaccines.

Influenza vaccine: Recommended for all children between 6 and 23 months of age, and for older high-risk children. Previously unvaccinated children up to 9 years of age require 2 doses with an interval of at least 4 weeks. The second dose is not required if the child has received one or more doses of influenza vaccine during the previous immunization season.

Rotavirus vaccine: Universal rotavirus vaccine is being considered by NACI and CPS.
AAP recommendation - http://aapredbook.aappublications.org/resources/2009_0-6yrs_Schedule_FINAL.pdf

SELECTED INFECTIOUS DISEASES RECOMMENDATIONS

See CPS position statements of the Infectious Diseases and Immunization Committee: www.cps.ca/english/publications/InfectiousDiseases.htm

- **Hepatitis B immune globulin and immunization:**
  Infants with HBsAg-positive parents or siblings require Hepatitis B vaccine at birth, at 1 month, and 6 months of age.
  Infants of HBsAg-positive mothers also require Hepatitis B immune globulin at birth.

  Hepatitis B vaccine should also be given to all infants from high-risk groups, such as:
  - infants where at least one parent has emigrated from a country where Hepatitis B is endemic;
  - infants of mothers positive for Hepatitis C virus;
  - infants of substance-abusing mothers.

- **Human Immunodeficiency Virus type 1 (HIV-1) maternal infections:**
  Breastfeeding is contraindicated for an HIV-1 infected mother even if she is receiving antiretroviral therapy.

- **Hepatitis A or A/B combined (when Hepatitis B vaccine has not been previously given):**
  These vaccines should be considered when traveling to countries where Hepatitis A or B are endemic.

- **Tuberculosis - TB skin testing:**
  TB skin testing should be done if the infant is living with anyone being investigated or treated for TB. TB skin testing should also be considered in high-risk groups, including Aboriginal people, immigrants and long-term travellers from areas with a high prevalence of TB.

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