2024 edition of the Rourke Baby Record

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Abstract

Objective To assist busy primary care providers caring for infants and young children and their families by providing them with the most recent recommendations and supportive evidence included in the 2024 edition of the Rourke Baby Record (RBR).

Quality of evidence Articles from pediatric preventive care literature (January 2019 to March 2023) were reviewed for relevance and quality of evidence. When available, evidence from systematic reviews, relevant clinical guidelines, and clinical trials were incorporated. In the absence of high-level evidence, observational studies and expert opinion on the topic were included. Primary research studies were reviewed and critically appraised using a modified protocol.

Main message Notable updates in the 2024 edition of the RBR include the promotion of early relational health for families; identification of targeted support and resources as opposed to labelling of high-risk groups; guidance on culturally safe care; clarification and evidence-based adjustments of the age of achievement of some developmental surveillance milestones; recommendations on plant-based beverages, vegetarian, and vegan diets; screening considerations for iron deficiency; dangers of ingestion of button batteries and cannabis edibles; literacy and socioemotional benefits of reading, singing, and storytelling; the importance of unstructured outdoor play; the environment's effect on children's health; the significance of sentinel injuries; acholic stools; and the normal presence and abnormal persistence of developmental (primitive) reflexes.

Conclusion Building on its 40-year history, the 2024 RBR provides freely available, evidence-informed recommendations to guide clinicians in providing effective, up-to-date, and comprehensive preventive pediatric care. Despite the challenging and evolving landscape of primary health care delivery, the RBR will continue to support primary care providers.

Editor's key points

- The 2024 edition of the Rourke Baby Record (RBR) provides updated recommendations for the primary care of children younger than 6 years of age. The knowledge translation tools and supporting literature are available at **https://www.rourkebabyrecord.ca**.
- Notable updates in the 2024 edition of the RBR include the promotion of early relational health for families; identification of targeted support and resources as opposed to labelling of high-risk groups; guidance on culturally safe care; clarification and evidence-based adjustments of the age of achievement of some developmental surveillance milestones; recommendations on plant-based beverages, vegetarian, and vegan diets; screening considerations for iron deficiency; dangers of ingestion of button batteries and cannabis edibles; literacy and socioemotional benefits of reading, singing, and storytelling; the importance of unstructured outdoor play; the environment's effect on children's health; the significance of sentinel injuries; acholic stools; and the normal presence and abnormal persistence of developmental (primitive) reflexes.
- The 2024 edition of the RBR is the most comprehensive revision in the history of the RBR. The redesigned and updated website offers an accessible and easily navigable repository of information for clinicians, parents, and caregivers. Consideration will also be given to more frequent dynamic updates of preventive health topics of the RBR that have developing evidence as opposed to more major revisions of the entire content at a single point in time.

Primary health care is essential to maintaining the health of individuals and populations; it is a vital component for the provision of preventive health care and is at the centre of an effectively functioning health care system. For children in particular, primary care provides the foundation for monitoring growth and development, providing anticipatory guidance, and delivering timely vaccinations for preventable diseases. Primary prevention, through primary care and public health interventions, plays a key role in the reduction of many of the leading causes of death and morbidity in childhood (eg, injury remains the leading cause of death for Canadian children annually).[1] When applied early in childhood, primary prevention may also reduce the risk of disease and morbidity in later adult life (eg, by identifying and treating risk factors for cardiovascular disease[2]) and may positively affect developmental trajectories (eg, by monitoring and supporting developmental progress).[3] A robust and effective primary care system is associated with more equitable health in populations.[4-6] Delays in, or failure to access, regular

and timely primary care can lead to diagnostic and service gaps during a period of critical development for children and can further widen health inequities.[7,8]

For the past 4 decades, amid a changing primary care landscape, primary care providers (PCPs) across Canada have used the Rourke Baby Record (RBR) to guide the provision of evidence-informed preventive care for children younger than 6 years of age.[9,10] The RBR has always been freely available and can be accessed online (**https://www.rourkebabyrecord.ca**). It is affiliated with the College of Family Physicians of Canada (CFPC) and the Canadian Paediatric Society (CPS), and is endorsed by the CFPC, CPS, and Dietitians of Canada. The RBR knowledge translation tools for PCPs help support and monitor well-baby and well-child visits. They include RBR visit forms (ie, Guides I to IV) in a printable version or embedded within electronic medical records, as well as a summary of supporting evidence and websites for the recommendations (ie, Notes 1 to 4, which were formerly called Resources 1 to 4). Updated resources for parents and caregivers, reflecting the 2024 edition of the RBR, include age-specific information and links.

This clinical review highlights the 2024 RBR updates by providing the most recent supportive evidence and recommendations for this newest edition of the RBR.

Quality of evidence

For the 2024 edition of the RBR, the literature search strategy, selection of relevant studies, and methodology review of each relevant study was conducted by McMaster Evidence Review and Synthesis Team (MERST) in Hamilton, Ont. MERST assisted with organizing and screening the literature using DistillerSR.[11] A modified Shekelle approach was used for critical appraisal of the literature.[12]

The level of evidence was assigned based on the strength of the evidence and relevance to Canadian primary preventive care. Our RBR team established the strength of recommendation for each RBR reported item, which is reflected in the RBR guides and notes sections using the long-standing and clinician-friendly designation of good, fair, and inconclusive evidence (or consensus opinion), which are represented in bold, italic, or regular fonts, respectively.

The core 2024 RBR team includes 3 family physicians (L.R., I.B., B.K.), 3 general pediatricians (D.L., P.L., A.R.L.), and 2 pediatric clinical epidemiologists (P.L., I.B.), all of whom contributed to the literature search, evidence appraisal, and final recommendations. A senior team member (J.R.) has been continuously involved since the original development of the RBR and has provided strategic planning and project support, including publication input, review, and process for this RBR 2024 edition, and the content of this article.

Our team of clinical user group stakeholders and advisory members from the CFPC, CPS, and Dietitians of Canada extensively reviewed and provided feedback prior to its endorsement and release.

Main message

The 2024 RBR provides an updated evidence-based synthesis of recommendations for well-infant and well-child preventive care. RBR guides for well-baby and well-child visits include the following domains: parental concerns; growth; nutrition; education and advice on common concerns such as injury prevention, healthy routines, behaviour and family issues, and environmental health; developmental surveillance; physical examination; investigations and screening; and immunizations. The RBR guides are accompanied by notes pages with supporting evidence and resources for health care providers.

Notable revisions in the 2024 RBR guides and notes section include the following:

- Inclusion of a section on antiracist, inclusive, and culturally safe care.
- Promotion of early relational health (ERH) for families, along with a shift from labelling high-risk groups to identifying targeted support and resources.
- Healthy routines: further evidence on the benefits of reading, singing, and telling stories, and of unstructured outdoor play.
- New information and resources on growth and nutrition topics, including regaining of birth weight, growth measurement, plant-based beverages, baby-led weaning, gastroesophageal reflux management, vegetarian and vegan diets, and age-appropriate forms of peanut products.
- Injury prevention: dangers of ingestion of button batteries and cannabis edibles, and awareness of choking risks and prevention.
- Evidence and resources on the effect of the environment on children's health including air quality, climate change, well water testing, and pesticide exposure.
- Evidence-based modifications to improve clarity and to adjust the age of achievement of some developmental surveillance red flag milestones (developed in collaboration with Dr Cara Dosman et al).
- Physical examination: awareness of the significance of sentinel injuries in the context of child maltreatment, acholic stools in the infant, developmental (primitive) reflexes, and hip examination techniques.
- Immunizations: Given the dynamic developments inherent in the vaccination sphere, the Guide V Immunization Chart has been deleted and users are referred to current National Advisory Committee on Immunization (NACI) and the Canadian Immunization Guide recommendations. New information is included on vaccine hesitancy and evidence-based interventions to improve vaccine confidence.
- Consideration of screening for iron deficiency in at-risk children.
- Expanded and updated resource links with information for health care professionals and families.

Reflective of recent policy statements from the CPS[13] and the American Academy of Pediatrics,[14] the 2024

RBR includes a renewed emphasis on the centrality of ERH. Abundant evidence has demonstrated the foundational importance of safe, strong, and nurturing relationships (SSNRs), and their critical role in supporting children in developing resilience and mitigating the impact of childhood adversity. The focus on ERH is based on the important recognition that trauma-informed, culturally safe, and antiracist care has the potential to improve access to care, reduce health inequities, and to improve health outcomes for children and their caregivers. ERH begins with clinicians' self-assessment of and reflection on their own biases and a commitment to providing compassionate, nonjudgmental, and culturally safe care that honours each family's culture and background. It is strengths-based, building on family protective factors rather than emphasizing deficits, such as by reinforcing positive back-and-forth interactions between parents and children; encouraging empathetic, nonjudgmental active listening; eliciting parental observations on what works best for their child; and commenting on examples of positive interactions observed between caregiver and child.

Table 1 outlines specific changes, rationale, and supporting evidence for the 2024 edition of the RBR.[13-71] A detailed review of the supporting evidence is available in the evidence table on the RBR website (**https://www.rourkebabyrecord.ca/literature-review**).

The RBR website has been relaunched with improved functionality on mobile devices, greater accessibility for users with disabilities, and a more modern and consistent design. The RBR visit guides and associated notes are available on the website in an interactive format or as downloadable forms. Relevant resources for parents and caregivers include age-specific well-baby and well-child information handouts based on RBR content, and links to reliable resources on common health issues researched and curated by pediatric health care professionals.

Discussion

Over the past 40 years, the RBR has responded to the challenges of a changing primary care landscape and has adjusted and evolved to remain relevant. The past decade has brought remarkable change and challenges to clinical care provision. Currently, 1 in 6 Canadians report not having a regular family physician.[72] Numerous factors are involved: more family physicians retiring since the height of the COVID-19 pandemic, an aging workforce, reduced working hours, fewer medical students choosing a career in family medicine, and fewer family physicians choosing to work in comprehensive longitudinal practice.[73] Furthermore, virtual care has become integrated into routine care, with increased uptake during and since the COVID-19 pandemic.

The impact of virtual care during the pandemic was welcomed by both parents and clinicians.[74,75] However, the impact of the increasing use of virtual care remains unclear for the current and future status of primary care surveillance in infancy and childhood.[76] For those children who require in-person visits for growth monitoring, vision screening, physical examination, and routine vaccinations, this care can only be provided partially, at best, in a virtual setting. With these current challenges, the RBR offers an up-to-date, evidence-informed guide that is well-known to many primary care providers. It is a practical tool for use by new primary care clinicians of different disciplines, for team-based care, and for teaching pediatric preventive health care to learners.

As a surveillance tool, the RBR has the potential to be interpreted as simply a checklist focused on identifying red flags or deficits. Despite its checklist framework, it is intended to be a clinical tool to provide a basis for a personalized reciprocal interaction with the patient, family, and provider. For example, when adopting a strengths-based approach when inquiring about a child's developmental trajectory, the provider may ask "What does your child enjoy?" or "What is he or she good at?" This strengthens the therapeutic relationship and expands the clinical context more broadly than a checklist of soliciting information and providing recommendations. Further, critical to the domain of ERH, a care provider can observe attachment and parental responsiveness during clinical interactions, and model positive reciprocity and encouragement for an infant or child.

Lastly, the RBR is designed as a general surveillance tool for Canadian children. We acknowledge that many questions or recommendations may not apply to all children, families, or cultures. We respect that providers and families are engaged in relationships of trust and that these topics are individualized and discussed in comfortable and welcoming environments.

Conclusion

The 2024 edition of the RBR presents an updated evidence-based synthesis of recommendations for well-infant and well-child preventive care. This is the most comprehensive revision in the history of the RBR. The redesigned and updated website also offers an accessible and easily navigable repository of information for clinicians, parents, and caregivers. We will continue to seek ways to support PCPs with the implementation of the RBR within the challenging and shifting landscape of current health care delivery to ensure that infants and children continue to receive high-quality primary care. We look forward to engaging with PCP user groups to identify ways of evolving the RBR. Consideration will also be given to more frequent dynamic updates of preventive health topics of the RBR that have developing evidence as opposed to more major revisions of the entire content at a single point in time.

Table 1. Specific Rourke Baby Record 2024 updates and rationale

REVISION	DETAILS OR RATIONALE
Growth monitoring	
• Regaining birth weight: Time to regain birth weight depends on mode of delivery (cesarean delivery vs vaginal) and milk source (breast vs formula). Nomograms exist: eg, Newborn Weight Loss Tool	• New evidence and nomograms on normative patterns of growth in the first week, which reference evidence-informed nomograms[15,16]
Nutrition	
• Breastfeeding: Support exclusive breastfeeding for the first 6 mo of life for healthy-term infants. Breastfeeding is associated with better health outcomes (eg, fewer gastrointestinal and respiratory illnesses, lower incidence of SIDS). Early and frequent parent-infant skin-to-skin contact, rooming in, and banning handouts of free infant formula increase breastfeeding rates	• Additional evidence on the health benefits associated with breastfeeding[17-21] • Maternal-infant skin-to-skin contact updated to parent-infant to be more inclusive of all parents • Evidence supporting the reduction of allergies through the early introduction of potentially allergenic foods has not demonstrated reduced breastfeeding duration. The optimal age of introduction of complementary foods has not been established but current evidence suggests at around 6 mo but not before 4 mo[22]
• Vitamin D supplementation: Breastfeeding mothers should consume a daily supplement that contains at least 400-600 IU of vitamin D	• Recent evidence suggests that breastfeeding mothers should consume a daily supplement that contains at least 400-600 IU vitamin D, which may be associated with improved infant vitamin D status[23]
• Plant-based beverages are not a nutrition-equivalent replacement for milk, especially for infants or children <2 y due to low protein, energy, and nutrient content. If a parent chooses not to provide breast milk or cow's milk at 9-12 mo, a soy-based formula is recommended until 2 y	• Per recent evidence: After 2 y of age, fortified unsweetened soy milk is an acceptable alternative to cow's milk, but other plant-based beverages (eg, almond, oat, rice) remain nutritionally inadequate unless specifically fortified[24,25]
• Vegetarian and vegan diets: Children <2 y fed a vegan diet may be at risk for nutrient deficiencies	• Earlier discussion of this topic is now recommended during the introduction of solid food, and new parent and clinician resources have been added
• Milk consumption in excess of 750 mL per day poses a risk for iron deficiency	• This recommendation follows the Health Canada Nutrition for Healthy Term Infants. Community-based research findings on iron deficiency and feeding practices in young children have been incorporated
• Uncomplicated gastroesophageal reflux is frequent, improves with conservative measures, and usually resolves by 1 y. Avoid medication unless poor growth, respiratory problems, or gastrointestinal bleeding	• Per updated evidence: Based on 2022 Canadian Paediatric Society Practice Point[26]
• Limit or avoid consuming highly processed foods and foods that are high in dietary sodium. Choose foods with healthy fats and limit foods containing saturated fat	• High dietary sodium and saturated fats are risk factors for heart disease and hypertension in adulthood. New resources added[27-29]
• Allergenic foods: Recent evidence has shown that tolerance is maintained by feeding allergenic foods at least once a week or a few times a month	• Per new evidence[30]
Environmental health	
• Exposure to pesticides is associated with adverse neurodevelopmental outcomes	• Evidence revised from fair to good and added to visits under 2 mo of age, per evidence that exposure to pesticides is associated with adverse neurodevelopmental outcomes[31,32]
• Well water should be tested regularly for contamination	• Contamination by chemicals, naturally occurring toxic substances, or pathogenic organisms can cause illness in children[33]

Table 1 *continued on page 557*

Table 1 *continued from page 556*

REVISION	DETAILS OR RATIONALE
Injury prevention	
• Safe sleeping environment: Counsel parents on the dangers of contributory risk factors for SIDS, such as bed sharing in parents' bed, sleeping on a sofa or cushioned chair or in a car seat or swing, overheating, maternal smoking, second-hand smoke, alcohol, and illicit or sedating drug use	• Risk factors for SIDS have been expanded as per recent evidence and clarified to be risk factors rather than causal factors[21,34,35]
• Choking: Avoid hard, small, smooth, and gummy foods under 4 y of age. Conforming items like latex balloons can cause choking. Use safe toys that are age appropriate and remove loose or broken parts. Encourage caregivers to learn choking first aid	• New evidence adds latex balloons as a choking hazard and encourages caregivers to learn choking first aid
• Poisoning or ingestion: Cannabis edibles and button batteries have been added. Ensure safe storage and disposal of button batteries. Canada-wide poison control number added: 844-POISON-X (844-764-7669)	• New evidence regarding harms from accidental ingestion of cannabis[36-39] and button batteries[40]
Inclusive and anti-oppressive care	
• Practise inclusive, antiracist, culturally safe care. Practise cultural humility through reflection of personal biases to deliver patient- and family-centred antiracist and culturally safe care where patients feel respected and safe[41-43]	• Racism is a social determinant of health that has profound lifelong effects on children and families[44-46]
• Practise trauma-informed care. Trauma-informed care is defined as practices that promote a culture of safety, empowerment, and healing	• New resources highlight the importance of integrating trauma-informed approaches to well-child care[14,47]
Relationships, parenting, family function	
• Observe, discuss, model, and praise specific parenting behaviour and healthy routines that promote ERH. Build on each family's relational strengths and protective factors, reinforce healthy routines, use anticipatory guidance to prepare parents for developmentally normal (and possibly challenging) behaviour, and help modify specific behaviour or skills when needed • Family approaches to crying, sleep, and behaviour vary culturally, and navigating points of variance with sensitivity is key to providing culturally safe care	• ERH is the emotional connection between children and trusted adults that promote health and development. Evidence has shown that it leads to positive experiences, can help mitigate negative effects of trauma and adversity, and build resilience (ability to recover from stressors and negative experiences)[13,48]
• Be aware of prevention, recognition, and assessment of mental health problems in children as well as of parental depression	• Evidence has shown that depression in either parent is a risk factor for the safety of children as well as for their socioemotional and cognitive development[49]
• Social determinants of health: Inquire about the impact of poverty (eg, housing or food insecurity) and offer resources to families with unmet social needs	• New evidence supports inquiring about poverty and directing families with unmet social needs to appropriate resources.[50,51] Provide links to Canadian resources[52,53]
Prevention of child maltreatment	
• Unexplained injuries (eg, fractures, burns), sentinel injuries, or injuries that do not fit either the explanation provided or developmental stage raise concern for child maltreatment • Consider more support or resources for parents with low socioeconomic or educational status, younger maternal age, single parent family, history of abuse, mental health or substance use, unplanned pregnancy; families with intimate partner violence, high conflict relationships, isolation or lacking social connectedness, caregivers who use corporal punishment; children with behavioural or mental health conditions or with special needs • Discuss with parents of preschoolers about teaching names of genitalia, appropriate and inappropriate touch, teaching age-appropriate principles of consent and permission, and normal sexual behaviour for age	• Wording now includes unexplained and sentinel injuries,[54] principles of consent, and consideration for support and resources rather than merely labelling groups as high risk[14,47,55-57]

Table 1 *continued on page 558*

Table 1 *continued from page 557*

REVISION	DETAILS OR RATIONALE
Healthy routines	
• Colic definition added: Recurrent and prolonged periods of infant crying, fussing, or irritability onset <5 mo old that occur without obvious cause and cannot be prevented or resolved by caregivers	• Colic has been appropriately added to the Crying item in the Family functioning and behaviour issues section
• Read, speak, and sing to the infant or child • Encourage caregivers to read, speak, tell stories, and sing to or with their infants and children in their language of choice to promote language and early literacy skills, as well as socioemotional and relational development • Children at risk of reading difficulties: History of early speech or language delay, trouble identifying letters of the alphabet, difficulty with letter-sound correspondence or rhyming, family history of reading difficulty or disability	• This is now in bold print (good evidence) on all visits, and has been expanded to include singing and telling stories in addition to reading. New evidence has shown benefits to socioemotional development and relational health in addition to literacy.[58] Identifying children at risk of reading difficulties prior to school with early implementation of evidence-based and closely monitored reading interventions can improve literacy[58,59]
• Family healthy active living, sedentary behaviour, screen time: Decrease sedentary pastimes and encourage daily and frequent physical activity, with parents as role models, through interactive floor-based play for infants, and free and unstructured outdoor active play for young children	• Based on new guidance on the importance of free play, especially outdoor risky play.[60] Risky play is different from hazardous play. The benefits of risky play include physical health, mental, and social-emotional health
Development	
• Ages, wording, or reclassification of the level of evidence for the acquisition of certain milestones have been revised • The milestones are now consistently listed in the following order: gross motor, fine motor, communication, cognitive, social-emotional • Further assessment of development is merited by the absence of any milestones, loss of attained milestones, or parental or caregiver or clinician concern • Users should ensure that milestones have been achieved for any missed visits, and to recognize that parental familiarity with particular milestones may be culturally dependent	• Guidance on developmental surveillance has been updated based on 2 major evidence-based papers on developmental milestone acquisition and collaboration with Dr Cara Dosman et al.[61,62] As in prior editions of the RBR, tasks are red flags, as they are set after the time of typical milestone acquisition so that absence of any item or parental concern suggests consideration for further assessment of development
• The algorithm for early child development and resources found on Notes 4 has been revised	• The revision was based on feedback received on the 2020 RBR. Note that the Ontario version of the 2024 RBR also includes links to province-specific resources
Physical examination	
• Sentinel injuries (such as bruising, subconjunctival hemorrhages, or intraoral trauma to the frenulum, lips, oral mucosa, gingiva, or tongue) or other unexplained injuries warrant evaluation regarding child maltreatment or medical illness	• This term was added to the physical examination section of the visits up to 9 mo, to the general injury prevention statement, and to the prevention of child maltreatment statement. Addition of the term sentinel injuries raises awareness of injuries such as subconjunctival hemorrhages and intraoral trauma, which are uncommon but can be more specific findings for maltreatment[63]
• Acholic stools	• Acholic stools and prolonged jaundice (predominately conjugated) in the newborn can be signs of BA. Early identification of BA with surgical management (Kasai procedure) reduces the need for liver transplantation[64]
• Developmental (primitive) reflexes: Testing for developmental reflexes (also called primitive reflexes) has been added to the physical examination section at the first visit (within 1 wk to 2 wk), and noting their absence by the 6-mo visit	• The persistence of some primitive reflexes (eg, Moro, asymmetric tonic neck, palmar grasp) may be early signs of neuromotor disorder, suggesting the need for further assessment[65]
• Hip screening for developmental dysplasia: The revised wording clarifies the physical examination screening maneuvers of choice for infants at different ages and the considerations for selective imaging. Consider selective imaging between 6 wk and 6 mo for infants with normal hip examination if breech or family history, and for all infants with positive findings on physical examination	• Whereas the hip examination for detecting hip dysplasia at 0 to 3 mo includes the Barlow and Ortolani tests, the Ortolani is the most sensitive clinical test. (The Barlow test detects laxity of the hip joint rather than an existing dislocation.) Between 3-12 mo, limited or asymmetric abduction is the most sensitive clinical maneuvers

Table 1 *continued on page 559*

Table 1 *continued from page 558*

REVISION	DETAILS OR RATIONALE
Investigations and screening	
• Anemia or iron deficiency screening: Screening should be considered between 6 and 18 mo of age for infants or children at risk due to factors including low birth weight and prematurity; social determinants of health; recently arrived from countries with limited resources; or diet (infants or children fed whole cow's milk before 9 mo of age or at quantities >500 mL/d; prolonged bottle feeding beyond 15 mo of age; or suboptimal intake of iron-containing foods). Beyond this age, screening as per additional risk factors	• Consideration for anemia screening has been broadened to include iron deficiency. Recent evidence has shown that iron deficiency without anemia has impacts on health including development and brain functioning[66]
• Consider hemoglobinopathy screening for neonates from high-risk groups	• The revised wording reflects consideration for screening depending on risk. At-risk ethnic groups vary with different types of hemoglobinopathy
• The term *tuberculosis screening* has replaced *TB skin testing*	• Based on updated evidence[67]
Immunization	
• Immunization pain reduction: During vaccination, pain-reduction strategies with good evidence include breastfeeding, use of expressed breast milk or use of sweet-tasting solutions, encouraging parents to hold their child, avoiding aspiration during IM injections, giving the most painful vaccine last, and consideration of topical anesthetics	• Pain-reduction strategies have been expanded in keeping with current evidence[68]
• Vaccine hesitancy: Vaccine hesitancy was identified by WHO in 2019 as 1 of the 10 threats to global health. Evidence-based interventions to improve vaccine confidence include nonjudgmental parent education and communication (face-to-face, pamphlet, video, applications, texts), anticipatory guidance including prenatally, team-based approaches and tracking or recall systems, and community-wide collaborations	• This new item on vaccine hesitancy has been added due to its increasing importance. Evidence-based interventions are included[69-71]
• The Immunization Chart (Guide V) has been deleted	• Due to changing immunization schedules and the widespread use of electronic and other methods of recording immunizations, the Guide V Immunization Chart has been deleted
• HPV vaccine has been deleted from the vaccine notes	• As HPV vaccine is not given under age 6 y, it is not relevant to the RBR
• COVID-19 vaccine has been added with recommendation to reference the NACI and the Canadian Immunization Guide for details regarding dosage and schedules	• Due to evolving immunization recommendations regarding schedules and dosage, we refer to the NACI and the Canadian Immunization Guide for current advice

BA—biliary atresia, ERH—early relational health, HPV—human papillomavirus, IM—intramuscular, NACI—National Advisory Committee on Immunization, RBR—Rourke Baby Record, SIDS—sudden infant death syndrome, WHO—World Health Organization.

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Contributors

All authors contributed to conceptualizing and designing the study; to collecting, analyzing, and interpreting the data; and to preparing the manuscript for submission.

Competing interests

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References

1. Wang C, Toigo S, Zutrauen S, McFaull SR, et al. Injuries among Canadian children and youth: an analysis using the 2019 Canadian Health Survey on Children and Youth. Health Promot Chronic Dis Prev Can. 2023 Feb;43(2):98-102. **doi: 10.24095/hpcdp.43.2.05**.
2. Kartiosuo N, Raitakari OT, Juonala M, Viikari JSA, et al. Cardiovascular Risk Factors in Childhood and Adulthood and Cardiovascular Disease in Middle Age. JAMA Netw Open. 2024 Jun 3;7(6):e2418148. **doi: 10.1001/jamanetworkopen.2024.18148**.
3. Lipkin PH, Macias MM; Council on children with disabilities, section on developmental and behavioral pediatrics. Promoting Optimal Development: Identifying Infants and Young Children With Developmental Disorders Through Developmental Surveillance and Screening. Pediatrics. 2020 Jan;145(1):e20193449. **doi: 10.1542/peds.2019-3449**. Epub 2019 Dec 16.
4. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83(3):457-502. **doi: 10.1111/j.1468-0009.2005.00409.x**.

5. Aggarwal M, Hutchison B, Abdelhalim R, Baker GR. Building High-Performing Primary Care Systems: After a Decade of Policy Change, Is Canada «Walking the Talk?». Milbank Q. 2023 Dec;101(4):1139-90. **doi: 10.1111/1468-0009.12674**. Epub 2023 Sep 25.
6. Aggarwal M, Hutchison B, Abdelhalim R, Glazier R, et al. The Evolution of Primary Care Transformation Across Canada (2012-2021): A Multiple Comparative Case Study of 13 Jurisdictions. Ann Fam Med. 2023;21(Suppl 1):3948. **doi: 10.1370/afm.21.s1.3948**.
7. Saunders N, Guttmann A, Brownell M, Cohen E, et al. Pediatric primary care in Ontario and Manitoba after the onset of the COVID-19 pandemic: a population-based study. CMAJ Open. 2021 Dec 14;9(4):E1149-58. **doi: 10.9778/cmajo.20210161**.
8. Guttmann A, Saunders NR, Kumar M, Gandhi S, et al. Implementation of a Physician Incentive Program for 18-Month Developmental Screening in Ontario, Canada. J Pediatr. 2020 Nov;226:213-20.e1. **doi: 10.1016/j.jpeds.2020.03.016**. Epub 2020 May 22.
9 Rourke L, Rourke J, Leduc D, Li P, et al. Knowledge mobilization for primary care: Lessons learned from 40 years of the Rourke Baby Record. Can Fam Physician. 2022 Oct;68(10):721-5. **doi: 10.46747/cfp.6810721**.
10. Rourke JT, Rourke LL. Well baby visits: screening and health promotion. Can Fam Physician. 1985 May;31:997-1002.
11. DistillerSR. DistillerSR: Literature Review Software [Internet]. DistillerSR; 2025 [cited 2025 Feb 8]. Available from: **https://www.distillersr.com/products/distillersr-systematic-review-software**.
12. Shekelle PG, Woolf SH, Eccles M, Grimshaw J. Clinical guidelines: developing guidelines. BMJ. 1999 Feb 27;318(7183):593-6. **doi: 10.1136/bmj.318.7183.593**.
13. Williams RC. From ACEs to early relational health: Implications for clinical practice. Paediatr Child Health. 2023 Sep 23;28(6):377-93. **doi: 10.1093/pch/pxad025**.
14. Forkey H, Szilagyi M, Kelly ET, Duffee J, et al. Trauma-Informed Care. Pediatrics. 2021 Aug;148(2):e2021052580. **doi: 10.1542/peds.2021-052580**.
15. Feldman-Winter L, Kellams A, Peter-Wohl S, Taylor JS, et al. Evidence-Based Updates on the First Week of Exclusive Breastfeeding Among Infants ≥35 Weeks. Pediatrics. 2020 Apr;145(4):e20183696. **doi: 10.1542/peds.2018-3696**. Epub 2020 Mar 11.
16. Paul IM, Schaefer EW, Miller JR, Kuzniewicz MW, et al. Weight Change Nomograms for the First Month After Birth. Pediatrics. 2016 Dec;138(6):e20162625. **doi: 10.1542/peds.2016-2625**. Epub 2016 Nov 9.
17. Patro-Gołąb B, Zalewski BM, Polaczek A, Szajewska H. Duration of Breastfeeding and Early Growth: A Systematic Review of Current Evidence. Breastfeed Med. 2019 May;14(4):218-29. **doi: 10.1089/bfm.2018.0187**. Epub 2019 Mar 5.
18. Harvey SM, Murphy VE, Whalen OM, Gibson PG, et al. Breastfeeding and wheeze-related outcomes in high-risk infants: A systematic review and meta-analysis. Am J Clin Nutr. 2021 Jun 1;113(6):1609-18. **doi: 10.1093/ajcn/nqaa442**.
19. Hoang MP, Samuthpongtorn J, Seresirikachorn K, Snidvongs K. Prolonged breastfeeding and protective effects against the development of allergic rhinitis: a systematic review and meta-analysis. Rhinology. 2022 Apr 1;60(2):82-91. **doi: 10.4193/Rhin21.274**.
20. Xue M, Dehaas E, Chaudhary N, O'Byrne P, et al. Breastfeeding and risk of childhood asthma: a systematic review and meta-analysis. ERJ Open Res. 2021 Dec 13;7(4):00504-2021. **doi: 10.1183/23120541.00504-2021**.
21. Moon RY, Carlin RF, Hand I; Task force on sudden infant death syndrome and the committee on fetus and newborn. Evidence Base for 2022 Updated Recommendations for a Safe Infant Sleeping Environment to Reduce the Risk of Sleep-Related Infant Deaths. Pediatrics. 2022 Jul 1;150(1):e2022057991. **doi: 10.1542/peds.2022-057991**.
22. Abrams EM, Greenhawt M, Fleischer DM, Chan ES. Early Solid Food Introduction: Role in Food Allergy Prevention and Implications for Breastfeeding. J Pediatr. 2017 May;184:13-8. **doi: 10.1016/j. jpeds.2017.01.053**. Epub 2017 Mar 3.
23. O'Callaghan KM, Taghivand M, Zuchniak A, Onoyovwi A, et al. Vitamin D in Breastfed Infants: Systematic Review of Alternatives to Daily Supplementation. Adv Nutr. 2020 Jan 1;11(1):144-59. **doi: 10.1093/advances/nmz098**.
24. Nutrition Services. Nutrition Guideline. Healthy Infants and Young Children, Plant-based Beverages [Internet]. Alberta Health Services; 2023 May [cited 2025 Feb 8]. Available from: **https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-ng-healthy-infants-other-milks-fluid-plant-based-beverages.pdf**.
25. Nutrition Services. Plant-based Beverages [Internet]. Alberta Health Services; 2023 [cited 2025 Feb 8]. Available from: **https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-plant-based-beverages-for-children.pdf**.
26. Chevalier I, Beck CE, Doré-Bergeron MJ, Orkin J. Medical management of gastro-esophageal reflux in healthy infants. Paediatr Child Health. 2022 Dec 27;27(8):503-11. **doi: 10.1093/pch/pxac068**.
27. Health Canada. Canada's food guide: Limit highly processed foods. Government of Canada; 2022 May 3 [cited 2025 Feb 8]. Available from: **https://food-guide.canada.ca/en/healthy-eating-recommendations/limit-highly-processed-foods**.
28. UnlockFood.ca. The Juicy Story on Drinks. Dietitians of Canada; 2023 Feb 24 [cited 2025 Feb 8]. Available from: **https://www.unlockfood.ca/en/Articles/Child-Toddler-Nutrition/The-Juicy-Story-on-Drinks**.
29. Pound CM, Blair B; Canadian Paediatric Society, Nutrition and Gastroenterology Committee, Ottawa, Ontario. Energy and sports drinks in children and adolescents. Paediatr Child Health. 2017 Oct;22(7):406-10. **doi: 10.1093/pch/pxx132**. Epub 2017 Oct 6.
30. Abrams EM, Orkin J, Cummings C, Blair B, et al. Dietary exposures and allergy prevention in high-risk infants. Paediatr Child Health. 2021 Dec 27;26(8):504-5. **doi: 10.1093/pch/pxab064**.
31. Jiang H, Justice LM, Purtell KM, Bates R. Exposure to Environmental Toxicants and Early Language Development for Children Reared in Low-Income Households. Clin Pediatr (Phila). 2020 Jun;59(6):557-65. **doi: 10.1177/0009922820908591**. Epub 2020 Feb 28.
32. Sapbamrer R, Hongsibsong S. Effects of prenatal and postnatal exposure to organophosphate pesticides on child neurodevelopment in different age groups: a systematic review. Environ Sci Pollut Res Int. 2019 Jun;26(18):18267-90. **doi: 10.1007/s11356-019-05126-w**. Epub 2019 Apr 30.
33. Health Canada. Well water and health: Test your well water [Internet]. Government of Canada; 2024 Dec 12 [cited 2025 Feb 22]. Available from: **https://www.canada.ca/en/health-canada/services/environment/drinking-water/well/test.html**.
34. Moon RY, Carlin RF, Hand I; Task force on sudden infant death syndrome and the committee on fetus and newborn. Sleep-Related Infant Deaths: Updated 2022 Recommendations for Reducing Infant Deaths in the Sleep Environment. Pediatrics. 2022 Jul 1;150(1):e2022057990. **doi: 10.1542/peds.2022-057990**.
35. Government of Canada, Canadian Paediatric Society, Baby's Breath. Joint Statement on Safe Sleep: Reducing Sudden Infant Deaths in Canada [Internet]. Government of Canada; 2021 [cited 2025 Feb 8]. Available from: **https://www.canada.ca/content/dam/phac-aspc/documents/services/health-promotion/childhood-adolescence/stages-childhood/infancy-birth-two-years/safe-sleep/joint-statement-on-safe-sleep/joint-statement-on-safe-sleep-eng.pdf**.
36. Bennett CE, Venkataramani A, Henretig FM, Faerber J, et al. Recent Trends in Marijuana-Related Hospital Encounters in Young Children. Acad Pediatr. 2022 May-Jun;22(4):592-7. **doi: 10.1016/j. acap.2021.07.018**. Epub 2021 Jul 26.
37. Myran DT, Cantor N, Finkelstein Y, Pugliese M, et al. Unintentional Pediatric Cannabis Exposures After Legalization of Recreational Cannabis in Canada. JAMA Netw Open. 2022 Jan 4;5(1):e2142521. **doi: 10.1001/jamanetworkopen.2021.42521**.
38. Whitehill JM, Dilley JA, Brooks-Russell A, Terpak L, et al. Edible Cannabis Exposures Among Children: 2017-2019. Pediatrics. 2021 Apr;147(4):e2020019893. **doi: 10.1542/peds.2020-019893**. Epub 2021 Mar 22.
39. Yeung MEM, Weaver CG, Hartmann R, Haines-Saah R, et al. Emergency Department Pediatric Visits in Alberta for Cannabis After Legalization. Pediatrics. 2021 Oct;148(4):e2020045922. **doi: 10.1542/ peds.2020-045922**. Epub 2021 Sep 20.
40. Chandler MD, Ilyas K, Jatana KR, Smith GA, et al. Pediatric Battery-Related Emergency Department Visits in the United States: 2010-2019. Pediatrics. 2022 Sep 1;150(3):e2022056709. **doi: 10.1542/peds.2022-056709**.
41. Our Kids' Health. Our Kids' Health [Internet]. Our Kids' Health; [cited 2025 Feb 8]. Available from: **https://kidshealthnetwork.org**.
42. Giroux R, Blackstock C, Jetty R, Bennett S, et al. COVID-19 and Indigenous children in Canada: What can paediatricians do? [Internet]. Canadian Paediatric Society; 2020 May 27 [cited 2025 Feb 8]. Available from: **https://cps.ca/en/blog-blogue/covid-19-indigenous-children-in-canada-what-can-paediatricans-do**.
43. Blackstock C, Bruyere D, Moreau E. Many Hands, One Dream: Principles for a new perspective on the health of First Nations, Inuit and Metis children and youth [Internet]. Aboriginal Nurses Association of Canada, Assembly of First Nations, Canadian Paediatric Society, First Nations Child and Family Caring Society of Canada, Health Canada, First Nations and Inuit Health Branch, Inuit Tapiriit Kanatami, Métis National Council, National Aboriginal Health Organization, National Indian & Inuit Community Health Representatives Organization, National Association of Friendship Centres, Pauktuutit Inuit Women of Canada; 2006 [cited 2025 Feb 8]. Available from: **https://cps.ca/uploads/blog_uploads/manyhands-principles-ENG-FINAL.pdf**.
44. Ramsoondar N, Anawati A, Cameron E. Racism as a determinant of health and health care: Rapid evidence narrative from the SAFE for Health Institutions project. Can Fam Physician. 2023 Sep;69(9):594-8. **doi: 10.46747/cfp.6909594**.
45. Trent M, Dooley DG, Dougé J; Section on adolescent health; council on community pediatrics; committee on adolescence. The Impact of Racism on Child and Adolescent Health. Pediatrics. 2019 Aug;144(2):e20191765. **doi: 10.1542/peds.2019-1765**.
46. Center for the Developing Child. How Racism Can Affect Child Development. Harvard University; 2020 [cited 2025 Feb 8]. Available from: **https://harvardcenter.wpenginepowered.com/wp-content/uploads/2020/11/RacismInfographic_2020.pdf**.
47. Duffee J, Szilagyi M, Forkey H, Kelly ET. Trauma-Informed Care in Child Health Systems. Pediatrics. 2021 Aug;148(2):e2021052579. **doi: 10.1542/peds.2021-052579**.
48. Mount Sinai Parenting Center. The Mount Sinai Parenting Center [Internet]. Icahn School of Medicine at Mount Sinai; 2022 [cited 2025 Feb 22]. Available from: **https://parenting.mountsinai.org**.
49. Cui C, Li M, Yang Y, Liu C, et al. The effects of paternal perinatal depression on socioemotional and behavioral development of children: A meta-analysis of prospective studies. Psychiatry Res. 2020 Feb;284:112775. **doi: 10.1016/j.psychres.2020.112775**. Epub 2020 Jan 7.
50. Pantell MS, Hessler D, Long D, Alqassari M, et al. Effects of In-Person Navigation to Address Family Social Needs on Child Health Care Utilization: A Randomized Clinical Trial. JAMA Netw Open. 2020 Jun 1;3(6):e206445. **doi: 10.1001/jamanetworkopen.2020.6445**.
51. Eder M, Henninger M, Durbin S, Iacocca MO, et al. Screening and Interventions for Social Risk Factors: Technical Brief to Support the US Preventive Services Task Force. JAMA. 2021 Oct 12;326(14):1416-28. **doi: 10.1001/jama.2021.12825**.
52. Government of Canada. Benefits Finder [Internet]. Government of Canada; 2024 [cited 2025 Feb 6]. Available from: **https://www.canada.ca/en/services/benefits/finder.html**.
53. Centre for Effective Practice. Poverty [Internet]. Centre for Effective Practice; 2016 [cited 2025 Feb 6]. Available from: **https://cep.health/clinical-products/poverty-a-clinical-tool-for-primary-care-providers/?&region=6**.
54. Barrett R, Ornstein A, Hanes L. Minor injuries... major implications: Watching out for sentinel injuries. Paediatr Child Health. 2016 Jan-Feb;21(1):29-30. **doi: 10.1093/pch/21.1.29**.
55. Viswanathan M, Fraser JG, Pan H, Morgenlander M, et al. Primary Care Interventions to Prevent Child Maltreatment: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. JAMA. 2018 Nov 27;320(20):2129-40. **doi: 10.1001/jama.2018.17647**.
56. Austin AE, Lesak AM, Shanahan ME. Risk and protective factors for child maltreatment: A review. Curr Epidemiol Rep. 2020 Oct 7;7(4):334-42. **doi: 10.1007/s40471-020-00252-3**.
57. Kimber M, McTavish J, Shouldice M, Ward MGK, et al. Recognizing and responding to children with suspected exposure to intimate partner violence between caregivers. Paediatr Child Health. 2024 May 31;29(3):174-88. **doi: 10.1093/pch/pxad079**.

58. Weisleder A, Cates CB, Harding JF, Johnson SB, et al. Links between Shared Reading and Play, Parent Psychosocial Functioning, and Child Behavior: Evidence from a Randomized Controlled Trial. J Pediatr. 2019 Oct;213:187-95.e1. **doi: 10.1016/j.jpeds.2019.06.037**. Epub 2019 Aug 6.
59. Ontario Human Rights Commission. Right to Read Inquiry Report. Government of Ontario; 2022 Feb [cited 2025 Feb 6]. Available from: **https://www3.ohrc.on.ca/en/right-read-inquiry-report-0**.
60. Beaulieu E, Beno S. Healthy childhood development through outdoor risky play: Navigating the balance with injury prevention. Paediatr Child Health. 2024 Jul 22;29(4):255-69. **doi: 10.1093/pch/ pxae016**.
61. Dosman C, Gallagher S, LaBerge P, Sahagian Whalen S, et al. Updated evidence-based developmental attainments for children: First 6 years. Paediatr Child Health. 2022 Jun 23;27(5):285-90. **doi: 10.1093/pch/pxac038**.
62. Zubler JM, Wiggins LD, Macias MM, Whitaker TM, et al. Evidence-Informed Milestones for Developmental Surveillance Tools. Pediatrics. 2022 Mar 1;149(3):e2021052138. **doi: 10.1542/peds.2021-052138**.
63. Ward MG, Ornstein A, Niec A, Murray CL. The medical assessment of bruising in suspected child maltreatment cases: A clinical perspective. Paediatr Child Health. 2013 Oct;18(8):433-42. Erratum in: Paediatr Child Health. 2013 Nov;18(9):456.
64. Chardot C, Buet C, Serinet MO, Golmard JL, et al. Improving outcomes of biliary atresia: French national series 1986-2009. J Hepatol. 2013 Jun;58(6):1209-17. **doi: 10.1016/j.jhep.2013.01.040**. Epub 2013 Feb 8.
65. Childhood Disability LINK. Early Detection of CP [Internet]. Childhood Disability LINK; 2025 [cited 2025 Mar 1]. Available from: **https://www.childhooddisability.ca/early-detection-of-cp**.
66. Abdullah K, Thorpe KE, Maguire JL, Birken CS, et al. Risk factors, practice variation and hematological outcomes of children identified with non-anemic iron deficiency following screening in primary care setting. Paediatr Child Health. 2015 Aug-Sep;20(6):302-6. **doi: 10.1093/pch/20.6.302**.
67. Cooper R, Houston S, Hughes C, Johnston JC. Chapter 10: Treatment of active tuberculosis in special populations. Can J Respir Crit Care Sleep Med. 2022 Mar;6(sup1):149-66. **doi:10.1080/24745332.202 2.2039500**.
68. Immunize Canada. Pain Management During Immunizations for Children [Internet]. Immunize Canada; 2024 [cited 2025 Feb 22]. Available from: **https://www.immunize.ca/pain-management-children**.
69. Kaufman J, Ryan R, Walsh L, Horey D, et al. Face-to-face interventions for informing or educating parents about early childhood vaccination. Cochrane Database Syst Rev. 2018 May 8;5(5):CD010038. **doi: 10.1002/14651858.CD010038.pub3**.
70. Scott VP, Opel DJ, Reifler J, Rikin S, et al. Office-Based Educational Handout for Influenza Vaccination: A Randomized Controlled Trial. Pediatrics. 2019 Aug;144(2):e20182580. **doi: 10.1542/peds.2018- 2580**. Epub 2019 Jul 10.
71. Frew PM, Lutz CS. Interventions to increase pediatric vaccine uptake: An overview of recent findings. Hum Vaccin Immunother. 2017 Nov 2;13(11):2503-11. **doi:10.1080/21645515.2017.1367069**. Epub 2017 Sep 26.
72. Canadian Institute for Health Information. Canadians with a regular health provider [Internet]. Canadian Institute for Health Information; 2024 Oct [cited 2025 Feb 8]. Available from: **https://www. cihi.ca/en/indicators/canadians-with-a-regular-health-provider**.
73. Kiran T, Wang R, Handford C, Laraya N, et al. Keeping doors open: A cross-sectional survey of family physician practice patterns during COVID-19, needs, and intentions. medRxiv. 2021:2021.12.20.21267918. **doi:10.1101/2021.12.20.21267918**.
74. Glazier RH, Green ME, Wu FC, Frymire E, et al. Shifts in office and virtual primary care during the early COVID-19 pandemic in Ontario, Canada. CMAJ. 2021 Feb 8;193(6):E200-10. **doi: 10.1503/cmaj.202303**.
75. McFadden K, Valkanas H, Rourke L, Li P, et al. Innovations that helped with accessing and delivering primary care for infants and young children during COVID-19. BMC Prim Care. 2025 Jan 7;26(1):5. **doi: 10.1186/s12875-024-02701-0**.
76. Qi X, Jordan M, Mignacca I, Bayoumi I, et al. Impact of the COVID-19 era on preventative primary care for children 0-5 years old: a scoping review protocol. Syst Rev. 2024 Apr 26;13(1):113. **doi: 10.1186/s13643-024-02507-2**.

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