2025 Canadian guideline for physical activity, sedentary behaviour and sleep throughout the first year post partum

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ABSTRACT

This consensus aims to provide guidance for postpartum women and people, healthcare providers and exercise professionals on physical activity, sedentary behaviour and sleep throughout the first year postpartum. The development of this guideline followed the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology and the Appraisal of Guidelines for Research and Evaluation II instrument. The Guideline Consensus Panel consisted of representatives from key professional groups, researchers and methodological experts. Literature was retrieved through searches of 12 online databases, and articles on maternal physical activity, sedentary behaviour or sleep in the first year after childbirth were eligible for inclusion if they reported on any of 21 maternal or infant health outcomes, which were prioritised considering the preferences and values of postpartum individuals. There was no restriction on language, and all study designs were eligible except for case studies. The certainty of evidence was rated using GRADE. This evidence review produced seven systematic reviews, which informed this consensus statement. A Delphi process was conducted to identify relative contraindications to postpartum moderate-intensity to vigorous-intensity physical activity, which informed the development of the Get Active Questionnaire for Postpartum. Evidence to decision tables were developed, and feedback on the recommendations was solicited from end users (healthcare providers, exercise professionals, researchers, policy organisations and postpartum women and people). Adhering to these consensus recommendations for postpartum women and people is likely to result in large improvements in psychological well-being, as well as pelvic, musculoskeletal and cardiometabolic health, and reduced fatigue, while not experiencing adverse events (moderate certainty evidence). Most end users indicated that following these recommendations would be feasible, acceptable and equitable, and likely to require minimal resources from individual and health systems perspectives. PROSPERO registration number CRD42022359282.

INTRODUCTION

The weeks and months following birth are a period of abrupt changes in physiological and psychological health. Postpartum women and people are at increased risk of depression, weight retention, sleep disorders, diabetes and cardiovascular disease, especially if they experienced pregnancy complications.[1 2] Such conditions have significant consequences on the short-term and long-term health and well-being of both the mother and the infant. The postpartum period is now believed to be a unique and critical window of opportunity to identify people at high risk for future chronic disease and to implement early interventions to improve lifelong health.[3] Although physical activity is a well-established mode to improve health outcomes in most populations, the postpartum period presents unique challenges and barriers to physical activity participation (eg, mode of delivery, breastfeeding, pelvic floor dysfunction, mental health, infant care). Clear guidance is severely lacking for postpartum women and people and their healthcare providers on how to appropriately engage in postpartum physical activity.

Further, time spent in sedentary behaviour is now understood to be a significant health concern, and poor sleep adversely impacts physical and physiological health.[4] Research in the general population has demonstrated that moderate-intensity to vigorous-intensity physical activity (MVPA) attenuates the association between high sedentary time and increased risk of mortality.[5 6] Integrating movement behaviours, including physical activity, sedentary behaviour and sleep, will redefine how we can support and encourage postpartum women and people to optimise their health and their infant's health. The *2025 Canadian Guideline for Physical Activity, Sedentary Behaviour and Sleep Throughout the First Year Post Partum* is relevant to those who have recently given birth, irrespective of breastfeeding status, gender, cultural background, disability or socioeconomic status. The objective of this Guideline was to provide evidence-based recommendations regarding physical activity, sedentary behaviour and sleep throughout the first year post partum in the promotion of maternal and infant health outcomes. The target audience includes healthcare providers, qualified exercise professionals and policy makers, and may be useful to postpartum women and people, and

Key points

1. Postpartum women and people are encouraged to accumulate at least 120 min/week of moderate-to-vigorous intensity physical activity (MVPA; eg, brisk walking and muscular strengthening exercises, including those targeting the lower back) for clinically meaningful health benefits.
2. Initiating light-intensity physical activity after childbirth is encouraged, as early mobilisation has been associated with better health outcomes.
3. Progression towards MVPA recommendations (and beyond) should be individualised, gradual and symptom-based, reflecting the time needed to heal from pregnancy and childbirth, physical and mental health, and readiness to engage in postpartum physical activity.
4. Daily pelvic floor muscle training is encouraged to reduce the risk of urinary incontinence.
5. Returning to running and resistance training is generally safe once surgical incisions or perineal tears have sufficiently healed and vaginal bleeding does not increase with MVPA. Beginning or returning to MVPA in the first 12 weeks following childbirth and better quality sleep are associated with improved mental health.
6. Those with potential contraindications to postpartum physical activity (ie, caesarean section with symptoms that worsen with MVPA) should consult with their healthcare provider, as engaging in MVPA may not be advised or may require modification or personalisation. Activities of daily living (ie, light-intensity physical activity) are recommended for all postpartum women and people due to the known adverse effects of activity restriction and bed-rest.
7. Postpartum women and people who follow this guideline for physical activity, sedentary behaviour and sleep will likely experience a large improvement in their psychological well-being (ie, reduction in the prevalence of depression, symptoms of depression and anxiety), pelvic floor health (ie, reduction in the risk of urinary incontinence), musculoskeletal health (ie, reduction in low back and pelvic girdle pain symptoms and severity) and cardiometabolic health (ie, improvement in weight, body mass index and blood lipids), and a reduction in fatigue, while not experiencing adverse effects (eg, reduced breastmilk supply or injury).
8. The postpartum period is an important transitional life event that presents unique barriers that may make following this guideline challenging. Robust social and emotional support from partners, family and society to help postpartum women and people overcome the challenges and barriers associated with the transition from pregnancy to postpartum is essential to effectively progress towards these recommendations.
9. It is essential to acknowledge that infant feeding and care significantly impacts daily life, including sleep; thus, these recommendations may not always be achievable, and at times specific recommendations within this guideline will not align with current circumstances.
10. For postpartum women and people experiencing difficulties meeting the targets in this guideline any progress - even if small - in meeting physical activity targets can improve maternal physical and mental health, and any reductions in sedentary behaviour may improve cardiometabolic health.

their infants. This Guideline is meant to address the transition period between the recommendations for the *2019 Canadian Guideline for Physical Activity Throughout Pregnancy*[7] and the *Canadian 24-Hour Movement Guideline for Adults 18–65*.[8]

METHODS

The Canadian Society for Exercise Physiology's (CSEP) *2025 Canadian Guideline for Physical Activity, Sedentary Behaviour and Sleep Throughout the First Year Post Partum* was developed according to the methodological strategy outlined in the Appraisal of Guidelines for Research and Evaluation (AGREE) II instrument and the Grading of Recommendations, Assessment, Development and Evaluation (GRADE).[9 10] The Guideline Consensus Panel consisted of representatives from all relevant professional groups, including researchers in the field of postpartum movement behaviours (MHD, S-MR, MFM, KA), methodological experts (AGREE II, GRADE (AJG), statistician (MU), knowledge translation (SEN-S)), exercise professionals (KNL), and nominated representatives from the CSEP (KA, KNL), the Society of Obstetricians and Gynaecologists of Canada (RC), the College of Family Physicians of Canada (MF), the Canadian Association of Midwives (EB-P), the Canadian Academy of Sport and Exercise Medicine (KF) and the Canadian Physiotherapy Association (NB). Before convening the Guideline Consensus Panel, the views and preferences of the public (convenience sampling of 41 postpartum women and people and 63 knowledge users; see online supplemental file 1) were sought to provide input via an online survey on the perceived benefits and harms of physical activity, sedentary behaviour and sleep, as well as to identify postpartum health outcomes that were most important to them. During the first consensus meeting held in April 2022, the Guideline Consensus Panel unanimously selected 21 outcomes related to maternal and infant health: 10 'critical' maternal health outcomes, 9 'important' maternal health outcomes and 2 'important' infant health outcomes (see table 1). 'Critical' potential harms included injury and reduced breastmilk quality or quantity, and 'important' potential harms included fear of movement, fatigue, adverse infant growth and development, and adverse events. The following was the key health question: what is the relationship between (1) physical activity, (2) sedentary behaviour and (3) sleep and health outcomes in the first year after childbirth?

The Guideline Consensus Panel also identified three a priori subgroup analyses, including the time post partum when participants entered the study (≤12 weeks vs >12 weeks post partum), mode of delivery (eg, caesarean section, vaginal delivery) and

Table 1 'Critical' and 'important' outcomes selected by the Guideline Consensus Panel

Critical outcomes	Important outcomes
Maternal health outcomes ► Anxiety. ► Breastfeeding. ► Cardiometabolic risk factors. ► Depression. ► High blood pressure. ► Injury. ► Lumbopelvic pain. ► Postpartum weight retention. ► Type 2 diabetes. ► Urinary incontinence.	Maternal health outcomes ► Chronic pain. ► Fatigue. ► Fear of movement. ► Faecal incontinence. ► Musculoskeletal pain. ► Non-serious adverse events. ► Physical activity on sleep quality and duration. ► Prolapse. ► Sexual function. Infant health outcomes ► Infant development. ► Infant growth.

type of physical activity (eg, aerobic, resistance training). Seven systematic reviews were undertaken to describe the effect of physical activity, sedentary behaviour and sleep on 'critical' and 'important' outcomes and to present the balance between the benefits and the potential harms of physical activity.[11–17] Studies were included if they described interventional or observational studies related to maternal physical activity, sedentary behaviour or sleep initiated in the first year after childbirth, and addressed at least one of the identified 'critical' or 'important' health outcomes. The protocol was registered with PROSPERO, the International Prospective Register of Systematic Reviews, on 20 September 2022 (registration number CRD42022359282; available from www.crd.york.ac.uk/prospero/display_record.php?RecordID=359282). A research librarian conducted a comprehensive search of online databases (MEDLINE, EMBASE, CINAHL, SPORTDiscus, Evidence-Based Medicine Reviews (Ovid), Scopus, Web of Science and ClinicalTrials.gov) up to 17 August 2022 for interventional and observational studies examining the relationships between postpartum physical activity, sedentary behaviour and sleep on the identified health outcomes. An updated search of these databases was performed on 12 January 2024. Overall, 19 043 titles and abstracts were screened and 574 unique studies were included. From these studies, seven systematic reviews and meta-analyses were developed, with all outcomes rated using GRADE (eg, risk of bias, imprecision, indirectness and other quality domains) for all outcomes.[11–17] The recommendations were primarily based on a subset of exercise-only randomised controlled trials (RCTs). The evidence for decision tables are presented in online supplemental file 1. The GRADE system was used to grade the strength of the recommendations. Recommendations were rated as strong or weak based on the (1) balance between benefits and harms, (2) overall quality of the evidence, (3) importance of outcomes (ie, values and preferences of postpartum women and people), (4) use of resources (ie, cost), (5) impact on health equity, (6) feasibility and (7) acceptability. A strong recommendation indicates that most or all postpartum women and people will be best served by the recommended course of action. A weak recommendation indicates that not all postpartum women and people will be best served by the recommended course of action; there is a need to consider other factors, such as the person's circumstances, preferences, values, resources available or setting. Consultation with a healthcare provider may assist in decision-making.

The certainty of evidence refers to the level of confidence in the evidence and ranges from very low to high. High certainty evidence indicates that the Guideline Consensus Panel is very confident that the estimated effect of physical activity, sedentary behaviour and sleep on the health outcome is close to the true effect. Moderate certainty evidence indicates that the Guideline Consensus Panel is moderately confident in the estimated effect of physical activity, sedentary behaviour and sleep on the health outcome; the estimate of the effect is likely to be close to the true effect, but there is a possibility that it is substantially different. Low certainty evidence indicates that the Guideline Consensus Panel's confidence in the estimated effect of physical activity, sedentary behaviour and sleep on the health outcome is limited; the estimate of the effect may be substantially different from the true effect. Finally, very low certainty evidence indicates that the Guideline Consensus Panel has very little confidence in the estimated effect of physical activity, sedentary behaviour and sleep on the health outcome; the estimate of the effect is likely to be substantially different from the true effect. Detailed methodology and results are available in online supplemental file 1.[11–16 17]

The second consensus meeting was held in June 2023 to review the evidence and draft the recommendations. While consensus was predefined at >80% agreement by the panel members, the draft recommendations received unanimous support. Following the meeting, feedback from relevant knowledge users and postpartum women and people was solicited through the networks of the Guideline Consensus Panel and their associated organisations via surveys in both English and French. Based on the feedback of the respondents, the recommendations were revised. Additionally, the need to identify evidence-based contraindications to postpartum MVPA and preparticipation screening was proposed by the respondents. Subsequently, a Delphi study was conducted.[18] The recommendations were revised, and a second round of survey consultation was conducted in April 2024, garnering 160 responses (100 knowledge users and 60 postpartum women and people). Following the final refinement of the recommendations, the Guideline Consensus Panel voted anonymously to indicate their agreement with the proposed recommendations. All recommendations received unanimous support, and there were no dissenting opinions.

A draft of the guideline was shared with the Guideline Consensus Panel members in August 2024. International experts in postpartum movement behaviours were asked to provide feedback on the guideline (see acknowledgements). The guideline was further revised, and the final version of the guideline document was sent to the CSEP Executive for review and endorsement. Two independent assessors scored the procedures used to develop the guideline following the rubric of AGREE II. The AGREE II assessment is available in online supplemental file 1. Overall, the guideline development process scored a 6 (overall average rating of 98.8%), and both assessors indicated that they would recommend the guideline for use.

Equity, diversity and inclusion statement

The Guideline Consensus Panel comprised 12 women and 1 man, who were primarily white (three identified as people of colour), representing early career to senior members with diverse clinical, research, methodological and applied expertise. All members were from Canada and represented their respective national organisations. A number of early career researchers were peripherally involved with the seven supporting systematic reviews that underpinned the development of this guideline.

RESULTS

The Guideline Consensus Panel put forth the following nine recommendations:

1. We recommend all postpartum women and people without contraindications be physically active to obtain clinically meaningful benefits (eg, prevent and reduce depressive symptoms) *(strong recommendation, moderate certainty evidence)*.
2. We suggest women and people with potential contraindications to physical activity (see Box 1) obtain medical guidance from a primary healthcare provider (eg, family physician) about beginning or continuing MVPA following childbirth. In most cases, MVPA may proceed, but modifications may be

Box 1 Relative contraindications to MVPA in the first year after childbirth[18]

⇒ Severe abdominal pain.
⇒ Vaginal bleeding not associated with menses.
⇒ Postpartum cardiomyopathy.
⇒ Caesarean section with symptoms that worsen with MVPA (eg, surgical incision pain).
⇒ High blood pressure (≥140/90 mm Hg SBP/DBP) that is not stable.
⇒ Eating disorder.
⇒ Malnutrition.
⇒ Excessive fatigue suggestive of anaemia or low energy availability (eg, relative energy deficiency in sport).
⇒ Fractures or other significant musculoskeletal injuries.
⇒ Calf pain or swelling suggestive of deep vein thrombosis.
⇒ Haemodynamic instability.
⇒ Acute systemic infection accompanied by fever, body aches or swollen lymph glands.
⇒ Breathing difficulties such as shortness of breath at rest not relieved with medications.
⇒ New onset of chest pain, discomfort and other angina-like symptoms with exertion.
⇒ Dizziness or light-headedness during MVPA.
⇒ Loss of consciousness for any reason.
⇒ Neurological symptoms such as ataxia or muscle weakness affecting balance.
⇒ Kidney disease.
⇒ New symptoms of heart disease or stroke.
⇒ Other medical or physical conditions that may affect the ability to be physically active.

DBP, diastolic blood pressure; MVPA, moderate-intensity to vigorous-intensity physical activity; SBP, systolic blood pressure.

required until the medical problem has resolved *(conditional recommendation, low certainty evidence)*.

3. We recommend accumulating at least 120 min of MVPA (eg, brisk walking, cycling) spread over 4 or more days of the week that incorporates a variety of aerobic and resistance training activities *(strong recommendation, moderate certainty evidence)*.
4. We recommend performing pelvic floor muscle training (PFMT) daily to reduce the risk of urinary incontinence (UI) and rehabilitate pelvic floor muscles impacted by pregnancy, labour and/or delivery. Instruction on proper technique from a pelvic floor physiotherapist is recommended to obtain optimal benefits *(strong recommendation, high certainty evidence)*.
5. We recommend beginning or returning to MVPA in the first 12 weeks post partum to support mental health *(strong recommendation, moderate certainty evidence)*.
6. We suggest initiating early mobilisation with light-intensity physical activity (eg, gentle walking, PFMT) and progressing to MVPA once surgical incisions or perineal tears have sufficiently healed and vaginal bleeding (lochia) does not increase with MVPA *(conditional recommendation, low certainty evidence)*.
7. We suggest following an individualised, gradual and symptom-based progression towards at least 120 min/week of MVPA *(conditional recommendation, low certainty evidence)*.
8. We recommend adopting a healthy sleep hygiene routine (eg, avoid screen time and maintain a dark, cool, quiet environment before bed) to support maternal mental health *(strong recommendation, moderate certainty evidence)*.
9. We suggest limiting sedentary time to 8 hours or less, including no more than 3 hours of recreational screen time, and breaking up long periods of sitting when possible *(conditional recommendation, very low certainty evidence)*.

Who should be physically active during the first year after childbirth?

Recommendations 1 and 2

This Guideline is intended for postpartum women and people who do not present with contraindications that would prevent them from engaging in MVPA following childbirth. Contraindications are classified as absolute or relative and require additional medical guideance before beginning or continuing postpartum MVPA. An absolute contraindication is a condition where MVPA should be avoided until the condition is resolved due to an elevated risk of adverse events; however, activities of daily living are encouraged as directed by a healthcare provider.[19] In contrast, relative contraindications warrant a discussion between the postpartum individual and a healthcare provider to determine the risks and benefits of participating in postpartum MVPA. Given extensive literature demonstrating the health benefits of physical activity (with or without modification) across populations, making recommendations to unnecessarily restrict MVPA should be avoided. Thus, unless there is strong evidence demonstrating the harm of MVPA with the diagnosis of specific medical conditions, distinctions between absolute and relative contraindications should not be made. In the presence of any contraindications, assessment and medical guidance by a primary healthcare provider are necessary. Individualised modification or reduction in physical activity is generally recommended for relative contraindications over a complete cessation of activity. The Get Active Questionnaire for Postpartum was developed to identify the small number of individuals who should seek medical guidance before beginning or continuing MVPA in the first year after childbirth (see figures 1 and 2). The questionnaire is designed to be a self-administered prescreening tool that can help empower individuals to advocate for their postpartum health and well-being.

In total, 221 RCTs were identified regarding the effects of physical activity initiated in the first year post partum on one or more 'critical' outcomes. Overall, moderate certainty evidence demonstrated that postpartum physical activity promotes maternal health outcomes. Physical activity following childbirth was associated with a reduction in the odds of depression (45%; 127 fewer per thousand (from 12 fewer to 213 fewer)) and UI (37%; 91 fewer per thousand (from 57 fewer to 145 fewer)), as well as improvements in symptom severity of depression (standardised mean difference (SMD) 0.52 (0.80 lower to 0.24 lower); moderate effect size), anxiety (SMD 0.25 lower (0.43 lower to 0.08 lower); small effect size), lumbopelvic pain (SMD −2.21 on a 0–10 Visual Analogue Scale (3.33 lower to 1.08 lower)), change in weight (−1.34 kg (2.06 kg lower to 0.61 kg lower)), body mass index (BMI; −0.73 kg/m^2 (1.21 kg/m^2 lower to 0.25 kg/m^2 lower)) and triglycerides (−0.17 mmol/L (0.28 mmol/L lower to 0.05 mmol/L lower)).[12–16] Importantly, the systematic reviews did not identify an increased risk of harm, including injury, adverse events, fear of movement or decreased breastmilk quality or quantity, and exercise was shown to reduce the level of fatigue.[11–16] Feedback from knowledge users indicated that a large proportion of respondents agreed that the Guideline recommendations were feasible (78.7%), acceptable (82.8%) and equitable (82%), and that the benefits of using the Guideline outweighed the costs (76%) for

GET ACTIVE QUESTIONNAIRE FOR POSTPARTUM

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NAME (+ NAME OF PARENT/GUARDIAN IF APPLICABLE) [PLEASE PRINT]:			
TODAY'S DATE (DD/MM/YYYY):	DATE OF DELIVERY (DD/MM/YYYY):	NO. OF WEEKS POSTPARTUM:	AGE:

Physical activity after childbirth has many health benefits and is generally safe for you and your baby. But for some conditions, physical activity is not recommended. This questionnaire is designed to help you to determine whether you should speak to your primary health care provider (e.g., your physician or midwife) before you begin or continue to be physically active.

Please answer each question to the best of your ability by circling Y for Yes or N for No. **If your health changes at any point in the 12 months after childbirth you should complete this questionnaire again.**

1.	In the first year after childbirth, have you experienced any of the following?		
	a. Loss of consciousness for any reason?	Y	N
	b. Neurological symptoms such as poor coordination or muscle weakness affecting balance?	Y	N
	c. Deep vein thrombosis (blood clot in legs; can cause leg pain and swelling, or red/warm skin around painful area) or pulmonary emboli (blood clot in lungs; can cause shortness of breath, dizziness)?	Y	N
	d. High blood pressure (≥140/90mmHg) that is not stable?	Y	N
	e. An eating disorder(s) or malnutrition?	Y	N
	f. Postpartum cardiomyopathy (heart disease after childbirth)?	Y	N
	g. New symptoms of heart disease (e.g., chest pain or discomfort) or stroke (e.g., face drooping, slurred speech) during activities of daily living or at rest?	Y	N
	h. Severe abdominal pain?	Y	N
	i. Chest pain/discomfort, dizziness or lightheadedness during exercise?	Y	N
	j. Breathing difficulties such as shortness of breath at rest that does not improve with medications?	Y	N
	k. Kidney disease?	Y	N
	l. Excessive fatigue (e.g., beyond tiredness, does not improve with rest)?	Y	N
	m. Severe infection accompanied by fever, body aches, or swollen lymph glands?	Y	N
	n. Broken bone(s) or another significant injury?	Y	N
	o. Caesarean section pain that worsens with exercise (e.g., surgical incision pain)?	Y	N
	p. Vaginal bleeding not associated with menses?	Y	N
2.	Do you have any other medical condition that may affect your ability to be physically active following childbirth? What is the condition? Please specify:	Y	N
3.	Are you concerned about returning to, or increasing your physical activity following childbirth? Please explain:		

Go to Page 2 *Describe Your Physical Activity Level*

Figure 1 Page 1 of the Get Active Questionnaire for Postpartum.[18 47]

postpartum women and people. The survey results supported strong recommendations for physical activity throughout the first year after childbirth.

Evidence from the Canadian adult population indicated that $C2.4 billion or 3.8% of the total direct healthcare costs in Canada were attributable to physical inactivity in 2012.[20] Data from Australia

Describe Your Physical Activity Level

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During a typical week, what types of physical activities do you take part in (e.g., swimming, walking, resistance training, yoga)?

During the same week, please describe ON AVERAGE how often and for how long you engage in physical activity of a light, moderate or vigorous intensity. See definitions for intensity below the box.

ON AVERAGE	FREQUENCY (times per week)	INTENSITY (see below for definitions)	DURATION (minutes per session)
How physically active were you in the **six months before pregnancy**?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5-7	☐ light ☐ moderate ☐ vigorous	☐ <20 ☐ 20-30 ☐ 31-60 ☐ >60
How physically active are you **currently**?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5-7	☐ light ☐ moderate ☐ vigorous	☐ <20 ☐ 20-30 ☐ 31-60 ☐ >60
What are your physical activity goals for the **next six months**?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5-7	☐ light ☐ moderate ☐ vigorous	☐ <20 ☐ 20-30 ☐ 31-60 ☐ >60

Light intensity physical activity: You are moving, but you do not sweat or breathe hard, such as walking to get the mail or light gardening.

Moderate intensity physical activity: Your heart rate goes up and you may sweat or breathe hard. You can talk, but could not sing. Examples include brisk walking.

Vigorous intensity physical activity: Your heart rate goes up substantially, you feel hot and sweaty, and you cannot say more than a few words without pausing to breathe. Examples include fast stationary cycling and running.

General Advice for Being Physically Active in the First Year Postpartum

Follow the advice in the 2025 Canadian Guideline for Physical Activity, Sedentary Behaviour and Sleep throughout the First Year Postpartum which recommends following an individualized, gradual and symptom-based progression towards the goal of at least 120 minutes of moderate-to-vigorous intensity physical activity (resistance training, brisk walking, swimming, gardening), spread over four or more days of the week: **csep.ca/getactivequestionnaire-postpartum**

We recommend everyone be screened (and treated) for barriers to physical activity: mental health, pelvic floor and abdominal wall function, musculoskeletal pain, wound healing, excessive fatigue, poor sleep, fear of movement, lactation status, social/emotional support, & eating disorders. If you have any questions about postpartum physical activity, consult a Qualified Exercise Professional or your healthcare provider to help ensure that your physical activity is safe and suitable for you.

Declaration

To the best of my knowledge, all of the information I have supplied on this questionnaire is correct. **If my health changes, I will complete this questionnaire again.**

☐ **I answered NO to all questions on Page 1.**
Sign and date the declaration below.
Physical activity is recommended.

I answered YES to one or more questions on Page 1 and I will speak with my health care provider before beginning or continuing physical activity.

☐ **I have spoken with my health care provider who has recommended that I take part in physical activity during the postpartum period. If my health changes I will speak with them again.**
Sign and date the declaration below.

NAME (+ NAME OF PARENT/GUARDIAN IF APPLICABLE) [PLEASE PRINT]:		SIGNATURE (OR SIGNATURE OF PARENT/GUARDIAN IF APPLICABLE):
TODAY'S DATE (DD/MM/YYYY):	TELEPHONE (OPTIONAL):	EMAIL (OPTIONAL):

Figure 2 Page 2 of the Get Active Questionnaire for Postpartum.[18 47]

demonstrated that in the adult population a 10% reduction in physical inactivity would generate cost savings of $A136–196 billion.[21] These data provide indirect evidence that reducing physical inactivity post partum may also yield significant healthcare savings. A recent study from the USA examining the financial cost of untreated perinatal mood and anxiety disorders found the average cost of illness

in the first 5 years after childbirth was $US31 800 per mother–child dyad.[22] We found moderate certainty evidence from RCTs demonstrating that exercise-only interventions reduced symptom severity of postpartum depression (19 RCTs, n=1778; SMD: −0.52, 95% CI −0.80 to −0.24, I^2=86%; moderate effect size) and anxiety (2 RCTs, n=513; SMD: −0.25, 95% CI −0.43 to −0.08, I^2=0%; small effect size), and the odds of postpartum depression by 45% (4 RCTs, n=303; OR: 0.55, 95% CI 0.32 to 0.95, I^2=0%), compared with no exercise. It is anticipated that, to achieve these recommendations, the individual will incur minimal costs (eg, appropriate footwear and clothing). We also anticipate a minimal cost to the healthcare system (eg, providing a recommendation to be physically active following childbirth). However, based on the feedback from the postpartum women and people, healthcare provider surveys and the expert opinion of the Guideline Consensus Panel, we anticipate that following these recommendations will have significant financial benefits to the person (eg, prevention of depression will avoid the cost of therapy or medication, prevention of UI would avoid the cost of physiotherapy or incontinence products) and the healthcare system (eg, avoiding the cost of treating depression or UI). Therefore, the incremental cost of the intervention would be small relative to the net benefits.

The Guideline Consensus Panel and international experts in postpartum physical activity, including the leads for the Australian, United Kingdom, Polish and International Olympic Committee guidelines, and a panel member of the Spanish guidelines, conducted a scoping review followed by a Delphi study to determine the relative and absolute contraindications to MVPA following childbirth (see Box 1).[18] As the five systematic reviews and meta-analyses underpinning the physical activity recommendations found numerous health benefits but did not identify any harms, best practice recommendations suggest that medical guidance is not required before beginning or continuing postpartum MVPA as it is a low-risk activity.[23] Using the results of the Delphi study, a physical activity preparticipation screening tool—the Get Active Questionnaire for Postpartum—was developed as a self-administered assessment tool to identify those at increased risk for contraindications (see figures 1 and 2). The Delphi also recommended that, to support engagement in postpartum MVPA, additional screening, support and treatment for potential barriers to MVPA by a healthcare provider or a qualified exercise professional may be recommended (eg, mental health, pelvic floor and abdominal wall function, musculoskeletal pain, wound healing, relative energy deficiency in sport (REDs), poor sleep, fear of movement, lactation status, social/emotional support and eating disorders).

What physical activity is recommended in the first year after childbirth?

Recommendations 3–7

Meta-regression analysis demonstrated a dose–response relationship between volume of physical activity and change in BMI, such that 560 metabolic equivalents (MET) minutes per week (120 min of MVPA) was associated with a 1.0 kg/m^2 reduction in BMI (identified as a clinically meaningful threshold by the Guideline Consensus Panel). Meta-regression analysis also demonstrated a dose–response relationship between frequency of physical activity and reduction in the severity of depressive symptoms, such that engaging in physical activity on at least 4 days per week was associated with a moderate effect size in reducing depressive symptom severity (identified as a clinically meaningful threshold by the Guideline Consensus Panel). As such, the Guideline Consensus Panel believes that the recommended threshold for postpartum physical activity should be at least 120 min of MVPA per week. The included studies covered a variety of exercise modalities, including aerobic exercise, resistance training, yoga and others. However, distinct recommendations could not be made based on the mode of delivery or type of exercise, as these subgroup analyses could not be conducted due to a lack of research. However, we found that MVPA interventions initiated in the fourth trimester (<12 weeks post partum) showed a greater reduction in the severity of postpartum depressive symptoms (SMD 0.87, −1.41 to −0.32; large effect size) than those initiated later in the postpartum period.[13] As postpartum depression typically peaks in the fourth trimester,[24] postpartum women and people must be provided adequate support (eg, childcare, recovery, emotional support) to overcome barriers to postpartum MVPA to support their mental health.

Approximately one-third of women experience UI (involuntary loss of urine) in the first year post partum, which can be associated with a significant reduction in quality of life.[25] The annual cost of physician services related to pelvic floor dysfunction was nearly US$300 million in 2006, and this cost is rising.[26] In a study conducted in Colombia, a middle-low-income country, the direct medical cost savings of implementing a pelvic floor physical therapy programme for individuals with UI was US$1218 compared with usual care.[27] We identified moderate certainty evidence that PFMT reduced the odds of UI by 37% (7 RCTs, n=1930; OR 0.63, 95% CI 0.41 to 0.97, I^2=72%). Assessment and treatment of pelvic floor dysfunction would incur a modest cost (eg, a session with the pelvic floor physiotherapist), which could be reduced for those with private healthcare insurance. Remote delivery of PFMT may reduce this cost and benefit the postpartum woman or person (eg, reducing the cost of incontinence products and increasing work productivity) and the healthcare system (eg, avoiding the cost of treating future UI). Therefore, the incremental cost of the intervention would be small relative to the net benefits.

Recent editorials and Delphi studies have recommended a gradual and symptom-based progression towards the desired volume of physical activity for postpartum athletes.[28–32] Each editorial and research study emphasises that it is essential that athletes meet specific healing and functional milestones before resuming high-impact or high-intensity physical activity and take into account the health and well-being concerns that are common in the postpartum period, including musculoskeletal pain, UI, mental health and readiness to engage in MVPA. While this approach is not specific to the general postpartum population and has not yet been empirically evaluated in a postpartum population, these recommendations follow general training principles used with the return to physical activity following injury, surgery and/or general physical inactivity. Key safety considerations for postpartum physical activity are provided in Box 2.

Sleep and sedentary behaviour

Recommendations 8 and 9

The economic cost of insufficient sleep is estimated to be up to US$680 billion in reduced economic output each year.[33] In Canada, the direct, indirect and total costs of insufficient sleep duration in 2020 were $C484 million, $C18 million and $C502 million, respectively.[34] More than half of postpartum women experience poor sleep quality, which has been associated with an increased risk of depression and weight retention.[35] It is estimated that a 5% decrease in

Box 2 Safety precautions and considerations for MVPA in the first year after childbirth

⇒ Screen for potential postpartum contraindications to MVPA using the Get Active Questionnaire for Postpartum. Rescreen anytime health status changes.
⇒ Avoid a rapid return to MVPA, especially if experiencing symptomatic musculoskeletal pain, incisional pain, heavy vaginal bleeding, pelvic floor dysfunction or mental health concerns.
⇒ Educate postpartum women and people on the signs and symptoms that indicate MVPA is not well tolerated.
⇒ Maintain adequate nutrition and hydration, understanding that needs will be greater during lactation.
⇒ If experiencing excessive fatigue following MVPA, assess for potential anaemia and/or investigate energy intake and requirements to determine the cause of low energy availability.
⇒ Prioritise quality sleep, when possible, to support mental health, physical and cognitive recovery and to reduce the risk of injury.
⇒ Adequate social, family and emotional support is required.

MVPA, moderate-intensity to vigorous-intensity physical activity.

the prevalence of insufficient sleep duration (from 17.2% to 12.2%) in Canadian adults would lead to yearly savings of $148 million.[34] Similar benefits are expected in the postpartum population. Our systematic review and meta-analysis found high certainty evidence that sleep interventions were associated with a greater decrease in severity of depressive symptoms compared with no intervention (5 RCTs, n=992; SMD −0.27, 95% CI −0.40 to −0.14; small effect),[11] and that exercise interventions were associated with a greater improvement in sleep quality (5 RCTs, n=375; SMD −0.44, 95% CI −0.79 to −0.09) and reduction in daytime fatigue (6 RCTs, n=535; SMD −0.56, 95% CI −1.06 to −0.05) compared with no exercise. We were unable to make a recommendation on optimal sleep duration due to a lack of supporting evidence. Future work examining the effects of daytime (nap) and night-time sleep duration on health outcomes is urgently needed to provide evidence-based recommendations. It is anticipated that to achieve this recommendation the postpartum woman or person will incur minimal costs (eg, creating a cool, dark sleeping environment; avoiding screens before bed; partner support for childcare). We also expect a minimal cost to the healthcare system (eg, providing a recommendation and guidance on improving sleep quality following delivery). Based on the feedback from the postpartum women and people/knowledge user surveys and the expert opinion of the Guideline Consensus Panel, we anticipate that following this recommendation will have significant financial benefits to the person (eg, prevention of depression will avoid the cost of therapy or medication) and the healthcare system (eg, avoiding the cost of treating depression). Therefore, the incremental cost of the intervention would be small relative

Box 3 Continued

⇒ Investigate the influence of mood disorders on the ability to engage in MVPA.

Box 3 Research gaps

Physical activity
⇒ Develop and validate applied return-to-activity and sport protocols aiming to enhance rehabilitation following childbirth.
⇒ Identify optimal timing for initiating physical activity and progression to physical activity goals in the first year post partum.
⇒ Identify specific recommendations for the different modes of delivery (eg, vaginal vs caesarean vs instrumental delivery).
⇒ Investigate the impact of vigorous-intensity physical activity on breastfeeding and infant growth/development.
⇒ Detail the impact of physical activity on postpartum women and people with pregnancy-associated cardiometabolic risks (eg, pre-eclampsia, gestational diabetes).
⇒ Explore the potential impact of relative energy deficiency in sport on lactation and recovery.
⇒ Investigate the effects of light-intensity physical activity on postpartum health outcomes and well-being.
⇒ Assess the impact of physical activity (all intensities) in those with postpartum contraindications.
⇒ Examine the impact of preconception and pregnancy physical activity counselling on postpartum return to moderate-intensity to vigorous-intensity physical activity (MVPA).

Sedentary behaviour
⇒ Identify the impact of sedentary behaviour on health outcomes during the first postpartum year.
⇒ Determine the optimal duration and frequency of sedentary time, particularly during lactation, and its impact on postpartum health.

Sleep
⇒ Identify interventions to optimise postpartum sleep.
⇒ Identify the optimal duration of sleep to improve health outcomes (eg, mental health, anthropometrics).
⇒ Investigate the impact of daytime versus night-time sleep on health and well-being.

General
⇒ Conduct research with populations of diverse cultural, regional (low-resource and high-resource countries) and racial backgrounds.
⇒ Understand the barriers to and facilitators of postpartum physical activity in those experiencing disabilities.
⇒ Explore how daily movement-related behaviours (sleep, sedentary behaviours, light-intensity physical activity, MVPA) interact and influence health outcomes.
⇒ Explore the perceptions, challenges and barriers to beginning or returning to physical activity in the first year post partum.
⇒ Investigate primary care providers' perceived barriers and challenges to implementing the Guideline recommendations into clinical practice.
⇒ Identify and develop support for implementation and reduction of barriers to meeting the recommendations detailed in the Guideline.
⇒ Identify individual and organisational knowledge users who may be important to supporting postpartum health and who may have an important role to play in promoting physical activity (eg, public health units).
⇒ Develop applied recommendations for athletes to return to sport.

Continued

to the net benefits. Given the significant challenges faced in the first year after childbirth, having substantial social and emotional support from society, family and friends is essential to support the health and well-being of postpartum women and people. Postpartum sleep is exceptionally difficult, especially for those whose infants wake frequently and/or have short sleep windows. Prioritising maternal sleep and supporting opportunities to increase engagement in physical activity are recommended, when possible, as these can play an important role in supporting higher quality sleep, thereby reducing the risk of postpartum depression.

In adults, there is a strong dose–response relationship between sedentary behaviour and cardiovascular disease, cardiovascular mortality, type 2 diabetes, cancer and cancer mortality.[8] It is anticipated that postpartum women and people would experience health benefits similar to those of the general population, but to date there has been limited evidence addressing these relationships. However, there is a growing body of literature linking sedentary behaviour to persistent lumbopelvic pain,[36] worse pelvic floor support[37] and postpartum weight retention.[38] Given the limited available literature, the Guideline Consensus Panel followed the current recommendations for Canadian adults and has identified postpartum sedentary behaviour as a key area for future research.[8]

DISCUSSION

Considerations for implementation

The following guidance is based on the expert opinion of the Guideline Consensus Panel and provides best practice recommendations for physical activity, sedentary behaviour and sleep throughout the first year post partum. The postpartum period may be fraught with personal, environmental and societal barriers that can impact readiness to begin or return to physical activity. Postpartum women and people are encouraged to speak to their support network, including family, friends and healthcare provider(s), about their perceived barriers. Healthcare providers must consider the impact these barriers may have on implementing the Guideline during this period. Encouraging an individualised progression towards meeting these recommendations, and recognising the realities and difficulties of postpartum life are necessary. While meeting all of these recommendations at any given time may not be possible, even small steps towards achieving them will promote physical and mental health benefits.

It is generally accepted that participating in physical activity after childbirth requires a gradual, stepwise progression that should be tailored based on the time required to heal from pregnancy and childbirth, the person's physical symptoms, functional milestones reached and personal circumstances. Although our systematic review and meta-analyses were not able to provide distinct recommendations following a caesarean versus vaginal delivery, a recent study has found that early ambulation following caesarean section delivery was associated with reduced postoperative complications.[39] Thus, engaging in unstructured, light-intensity movement as tolerated soon after birth is recommended.

Healing and recovery will be impacted by the type of delivery, the presence of complications before and after pregnancy, as well as overall well-being. Some level of deconditioning post partum should be expected, even in those who continued to participate in MVPA throughout pregnancy. Initiating postpartum physical activity participation, including pelvic floor and gentle abdominal muscle training, as well as light-intensity physical activity, including walking, is encouraged to begin as soon as the postpartum woman or person has the capacity. The timeline to participate in MVPA will vary significantly, and an individualised, symptom-based, gradual progression is recommended.[30 32] Screening for pelvic floor dysfunction post partum is essential, with referral to a pelvic health specialist as needed.

Lactation is a highly energy-consuming process requiring 450–500 kcal/day.[40] While there have been long-standing concerns about combining physical activity and lactation, evidence from our systematic review did not identify an adverse impact on breastmilk quality or quantity or infant growth.[14] Adequate nutrition and hydration is needed to maintain lactation, as insufficient caloric intake can lead to low energy availability, which can cause amenorrhoea, poor recovery, decreased bone health, sleep disturbance and fatigue.[41] Breastfeeding has also been found to be a barrier to exercise in the postpartum period.[42] During lactation, the breasts will rapidly change size, and a bra with good support to minimise mobility during exercise is required.[43] While avoiding a tight-fitting or binding bra is recommended to ensure that breastmilk supply is not compromised, breastfeeding or pumping milk is encouraged before exercise to reduce breast weight and mobility, making exercise more comfortable.

Every person's postpartum journey is unique, and their biopsychosocial health and well-being will impact their timeline for recovery and readiness for physical activity. However, there are numerous barriers to postpartum MVPA participation that can be addressed to increase participation. A recent Delphi recommended assessing readiness for MVPA and identified key barriers to MVPA, including screening for mental health symptoms, musculoskeletal pain, wound healing, REDs, poor sleep, fear of movement (including diastasis rectus abdominus), lactation status, social/emotional support and eating disorders.[18] Previous studies have suggested that fear of movement or injury decreases the likelihood of returning to MVPA[44]; thus, assessing kinesiophobia is essential. Providing a supportive and flexible environment to address the barriers postpartum women and people face is critical.

Sleep is essential to health, yet the postpartum period is often characterised by short and fragmented sleep. While some level of sleep deprivation is unavoidable and part of being a new parent, the demands of around-the-clock parenting can take a toll on postpartum recovery and mental and physical health. The sleep recommendations in this Guideline can be difficult to achieve without substantial support from family, friends and society. Prioritising sleep and taking steps towards healthy sleep hygiene practices (eg, regular exercise; sleeping in a cool, quiet, dark environment; using behavioural strategies to improve sleep) can enhance overall sleep quality. Encouraging small steps to improve sleep may have important implications for overall health.

Research gaps and surveillance recommendations

Future research will need to address the identified gaps in the literature (see Box 3) to provide detailed recommendations on different modalities and intensities of physical activity (eg, group vs individual-based activity, resistance training, yoga, light-intensity to vigorous-intensity physical activity, occupational vs recreational activity), and develop and validate evidence-based individualised progressions for beginning or returning to physical activity, as well as specific recommendations on the type and timing of activities

following vaginal versus caesarean delivery and for those who experienced pregnancy complications resulting in an increased risk of cardiometabolic diseases (eg, gestational diabetes, gestational hypertension, pre-eclampsia). We identified relatively little literature regarding the impact of sleep and sedentary behaviour on postpartum health, limiting our ability to provide guidance for these movement behaviours over a 24-hour day.

To support the development of more detailed recommendations, we encourage researchers to use the Consensus on Exercise Reporting Template for physical activity trials, and use detailed descriptions of sleep and sedentary behaviour interventions including (at a minimum): the type, duration and delivery of the intervention and when it started; the frequency, intensity, duration and type of physical activity; sleep quality and duration (both naps and longer sleep); and sedentary time (including screen time).[45] Adherence to the intervention is essential, with objective measures of physical activity, sedentary behaviour and sleep being used over self-report, when possible.

Given the new interest and recognition that the postpartum period is distinct from the 'non-pregnant', we anticipate that there will be a rapid accumulation of new research addressing these critical research gaps. Surveillance will be essential to determine the effectiveness of this Guideline, and the author group recommends national-level surveillance of 24-hour movement behaviour monitoring to measure MVPA, sedentary time and sleep and their impact on the 'critical' and 'important' outcomes outlined in this Guideline. Monitoring the proportion of postpartum women and people meeting MVPA, PFMT and sedentary behaviour targets will be a key performance metric of this Guideline. While questionnaire-based assessment may be acceptable, objective measures of movement behaviours via accelerometry are strongly recommended. The lead authors will develop a formal questionnaire to survey international experts on a yearly basis to identify whether they are aware of new evidence that would change the scope of the guidelines (eg, high-quality research supporting the return to MVPA after vaginal vs caesarean delivery); however, we anticipate that renewal of this Guideline will occur in 5–10 years.

Clinical, research and policy implications

Depression and anxiety are experienced by 14%–23% of postpartum women and can be worsened by lack of sleep, reduced sleep quality or insufficient sleep duration.[2 45] The consequences of undiagnosed and untreated depression are serious; nearly 20% of women with postpartum depression have considered hurting themselves, and in the UK the leading cause of maternal death in the year following childbirth is suicide.[46] The systematic reviews underpinning this Guideline found that interventions to increase MVPA and improve sleep quality are associated with improved mental health.[11 13] It is important to acknowledge that mild to moderate mood/mental health disorders were included in the systematic reviews, and the impact of MVPA and sleep on severe depression or postpartum psychosis is not known.

The systematic reviews and meta-analyses identified numerous health benefits, including improvements in UI, lumbopelvic pain, anthropometrics and cardiometabolic health, reduced fatigue, and no increased risk of injury or adverse effects on breastmilk quality or quantity. These clinically meaningful benefits strongly support incorporating consultation and guidance on movement behaviours into clinical practice for the postpartum period. Support for these individuals throughout the first year following childbirth is essential, and policy recommendations, including strong and flexible social and personal support, are critical to the lifelong health of both postpartum women and people and their children.

CONCLUSION

The *2025 Canadian Guideline for Physical Activity, Sedentary Behaviour and Sleep Throughout the First Year Post Partum* represents a new approach to supporting maternal and infant health and well-being following childbirth.

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