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Summary of International Guidelines for Physical Activity Following Pregnancy

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Abstract

Postpartum physical activity can improve mood, maintain cardiorespiratory fitness, improve weight control, promote weight loss, and reduce depression and anxiety. This review summarizes current guidelines for postpartum physical activity worldwide. PubMed (MedLINE) was searched for country-specific government and clinical guidelines on physical activity following pregnancy through the year 2013. Only the most recent guideline was included in the review. An abstraction form facilitated extraction of key details and helped to summarize results. Six guidelines were identified from five countries (Australia, Canada, Norway, United Kingdom, United States). All guidelines were embedded within pregnancy-related physical activity recommendations. All provided physical activity advice related to breastfeeding and three remarked about physical activity following Caesarean delivery. Recommended physical activities mentioned in the guidelines included aerobic (3/6), pelvic floor exercise (3/6), strengthening (2/6), stretching (2/6), and walking (2/6). None of the guidelines discussed sedentary behavior. The guidelines that were

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identified lacked specificity for physical activity. Greater clarity in guidelines would be more useful to both practitioners and the women they serve. Postpartum physical activity guidelines have the potential to assist women to initiate or resume physical activity following childbirth, so that they can transition to meeting recommended levels of physical activity. Health care providers have a critical role in encouraging women to be active at this time, and the availability of more explicit guidelines may assist them to routinely include physical activity advice in their postpartum care.

Keywords

exercise; leisure activities; postpartum; recommendations; review; strengthening

Introduction

The postpartum period is defined as the time immediately following birth and is often without a definitive end point. However, many of the physiological and morphological changes of pregnancy persist for four to six weeks postpartum (1). The time periods can be divided into hospital-based (during hospital stay), immediate postpartum (hospital discharge to six weeks postpartum), and later postpartum (six weeks to one year, corresponding to cessation of breastfeeding). The postpartum period provides an opportunity for women to begin or reengage in physical activity. The short-term benefits of postpartum physical activity include improvement in mood and cardiorespiratory fitness, promotion of weight loss, and a reduction in postpartum depression and anxiety (2, 3). Despite these benefits, the majority of women do not resume their pre-pregnancy physical activity levels after the birth of a baby (4).

As the early postpartum period focuses on recovering from delivery and caring for the infant, the importance of resuming physical activity during this time is often not made clear to women, many of whom need guidance to begin or resume physical activity (5). For example, in a study of women at around seven weeks postpartum, almost half reported the desire for more information about exercise, whether or not postnatal education was provided (6). In another study among pregnant women who planned to exercise after their child's birth, only 15% reported that their physician discussed with them the appropriate time to begin exercising after delivery (7). This period is therefore often a missed life course opportunity for beginning or resuming physical activity. Previously active women who do not resume their pre-pregnancy physical activity levels may remain inactive for many years. For example, data from the Australian Longitudinal Study on Women's Health show a sharp decline in physical activity levels in the three years following the birth of a baby (8).

The World Health Organization's guideline on physical activity recommends that adults age 18 to 64 years engage in at least 150 minutes of moderate intensity aerobic activity throughout the week in bouts of at least 10 minutes, or at least 75 minutes of vigorous intensity aerobic activity, or an equivalent combination of the two (9). Muscle strengthening should be done two or more days per week. The guideline states that postpartum women may need extra precaution and should seek medical advice before striving to achieve these

recommendations. Country-specific postpartum physical activity guidelines inform both health care providers and women about safe levels of physical activity during this unique time period. The aim of this review was to identify and summarize guidelines for postpartum physical activity from around the world.

Methods

PubMed (MedLINE) was searched for published guidelines on physical activity during the postpartum period. The search was narrowed to peer-reviewed studies published between 1990 and 2013. In each country with guidelines, an authority was identified and served as the expert for that guideline in this review. To narrow the scope of the review, only the most recent country-specific public health or clinical guidelines from obstetrics, gynecology, or sports medicine were included. Layman-oriented guidelines were excluded. A single author reduced all extraction forms into tables that coauthors subsequently checked.

Results

Background

In total, six guidelines from five countries were identified: Australia (10, 11), Canada (12, 13), Norway (14), United Kingdom (UK) (15), and the United States (US) (1, 16) (Table 1). The two US guidelines were coded separately and included: American College (now Congress) of Obstetricians and Gynecologists (ACOG) (1) and the US Department of Health and Human Services (USDHHS) (16). The guidelines were endorsed by organizations representing obstetrics and gynecology (Australia, Canada, UK, US ACOG), public health (Canada, Norway, USDHHS), sports medicine (Australia), and exercise physiology (Canada).

Four guidelines were original and two represented updates from prior versions (Table 1). All guidelines were embedded within recommendations for physical activity during pregnancy. Most resulted from a comprehensive literature review, but only the Canadian guideline included a comprehensive rating of scientific evidence and a quality assessment of the evidence to support each specific recommendation. Two of the six postpartum guidelines referred to existing physical activity guidelines for adults: Norway (published in the same document) and the US ACOG (referred to the 2000 American College of Sports Medicine recommendations (17)).

Benefits

All the guidelines identified the health benefits of postpartum physical activity, such as improvements in mental health or mood (Australia, UK, USDHHS), emotional well-being (Australia), weight loss and/or maintenance (UK, USDHHS), and cardiorespiratory fitness, particularly if exercise was also performed during pregnancy (Australia, UK, USDHHS) (Table 2). Three guidelines stated that postpartum physical activity also may reduce postpartum depression (Australia, UK, US ACOG) and one stated it may reduce anxiety (UK).

Breastfeeding

All guidelines remarked on the impact of physical activity or exercise on breastfeeding (Table 2). They suggested that sporting activities (Australia), moderate exercise (Canada, UK), moderate physical activity (USDHHS), and moderate to vigorous physical activity (Norway) will not negatively affect breast milk volume, as long as there is appropriate food and fluid intake (Australia), and that these activities also do not affect composition of breast milk or infant growth. The Canadian guideline stated that if babies do not feed well immediately after maternal exercise then mothers should feed their baby before exercise, postpone feeding to one hour after exercise, or express milk prior to exercising that may be used after the activity.

Resumption of Physical Activity and Exercise

All but the USDHHS guideline recommended, at least in general terms, when physical activity or exercise could resume during postpartum. The Canadian guideline stated that “depending on the mode of delivery, most types of exercise can be continued or resumed in the postpartum period” (page 520)(13), while the US ACOG guideline stated that “pre-pregnancy routines may be resumed gradually as soon as it is physically and medically safe” (page 173)(1). Similarly, the Australian guideline suggested that, after a normal vaginal delivery, non-ballistic exercise could be commenced “as soon as is comfortable” (page 16). The UK guideline recommended that if pregnancy and delivery are uncomplicated, a mild exercise program may begin immediately; otherwise a medical caregiver should be consulted before resuming pre-pregnancy physical activity (15). Norway’s guideline was stricter, indicating that generally women may start exercising after the six week postpartum clinic visit, and that self-perception was an important indicator for what kind of exercise to engage in (14).

The Australian, Canadian, and UK guidelines considered type of delivery, and suggested that women who experienced a cesarean should consult with their healthcare professional about resumption of physical activity. The Australian and UK guideline implied this would occur usually after the first postpartum visit with a healthcare provider, while the Canadian guideline indicated that women “may slowly increase their aerobic and strength training, depending on the level of discomfort and other complicating factors such as anemia and wound infection” (page 520) (13). None of the guidelines specified different recommendations for women who had a vaginal delivery but required stitches.

Exercise Prescription

Generally, exercise prescription is considered in terms of duration, frequency, intensity, and type, but only the Canadian and USDHHS guidelines remarked with some specificity on these domains (Table 3). The Canadian guideline recommended at least 15 minutes of aerobic exercise three to five days/week and specified that “with the added fatigue of delivery and newborn care, some women may need to reduce the intensity or length of their exercise sessions” (page 520)(13). The USDHHS recommended that healthy postpartum women who were not highly active or engaging in vigorous intensity physical activity should obtain at least 150 minutes of moderate intensity aerobic activity spread throughout the week. Those who were highly active could continue their physical activity into the

postpartum period, provided that they remained healthy, and should discuss this issue with their healthcare provider. The USDHHS also mentioned that during postpartum, women should discuss with their healthcare provider how to adjust physical activity volume or amounts. The UK guideline remarked on intensity more generally, stating that “women need to return to pre-pregnancy exercise levels gradually, not resuming high impact too soon” (page 6)(15).

Recommended types of activities mentioned in the guidelines included aerobic (3/6 guidelines remarked on this), pelvic floor exercise (3/6), strengthening (2/6), stretching (2/6), and walking (2/6). The Australian guideline cautioned against activities that cause high gravitational load on the pelvic floor (i.e., running, aerobics). Both Canada and the UK recommended pelvic floor exercise in the immediate postpartum period in order to reduce future urinary incontinence and the Norwegian guideline specified the importance of pelvic floor training for women who have given birth. None of the guidelines discussed sedentary behavior.

Discussion

In this review, we identified, summarized, and contrasted six clinical or public health guidelines for postpartum physical activity from around the world. In general, we found that the specific content of the guidelines varied somewhat depending on the date of publication and target audience. However, all guidelines were brief when discussing postpartum physical activity, particularly since each guideline primarily focused on pregnancy-related recommendations. This lack of clarity around the issue of postpartum physical activity may lead to inconsistent or no advice being offered by health practitioners. All the guidelines mentioned the interaction of physical activity with breastfeeding, and supported women doing both. Since there are separate policy statements regarding breastfeeding (example: (18)), those guidelines could cross-reference physical activity recommendations, and clarify key points related to the interaction of breastfeeding with physical activity.

Despite the six physical activity recommendations, many postpartum women do not meet these guidelines (for example (19-27)). Qualitative studies indicate a number of barriers to physical activity postpartum including physical discomfort, parenting duties, being too tired, lack of time, not prioritizing health over other competing responsibilities, lack of spousal/partner support, social isolation, lack of childcare, family responsibilities, financial, neighborhood safety, and weather (28-37). Compared to the pregnancy period, postpartum barriers to physical activity seem to focus less on health-related barriers, such as shortness of breath and musculoskeletal issues, or on physical limitations and restrictions (35, 38). In postpartum, time limitations become a more common barrier, perhaps particularly for first-time mothers (35, 38, 39). With barriers to physical activity changing over time, women may benefit from specific guidance to address the changing challenges they face during this life stage.

Qualitative studies also indicate a number of enablers to postpartum physical activity. These include knowing the benefits of physical activity, weight loss, social support, and returning to work (corresponding with child care) (28, 30, 34, 35, 39). Quantitative studies confirm

these findings, particularly the need for social support to facilitate postpartum physical activity (for example (24, 29, 38-41)). Although less studied, the neighborhoods where women live, work, or travel may also impact on physical activity behavior. The barriers and enablers to postpartum physical activity may differ across countries, particularly for women returning to work, since policies in this regard vary across countries.

In the literature, prospective observational studies using accelerometry have indicated that overall and moderate intensity physical activity increase during the extended postpartum period, however the absolute changes are quite small and time spent in sedentary behaviors is quite large (42, 43). More intensive interventions were recommended to help postpartum women integrate physical activity and reduce sedentary behavior. Intervention studies starting in pregnancy and extending into postpartum, as well as those that begin during postpartum, indicate it is possible to increase physical activity, including components of endurance and strength, during this time period (44-57). Promising strategies include increasing knowledge, regular counseling and support, self-monitoring with diaries and pedometers, increasing self-efficacy, addressing barriers, referral to community resources for physical activity, and use of walking groups. These interventions were either atheoretical or based on the Social Cognitive Theory or the Transtheoretical Model.

Postpartum guidelines for physical activity should help women quickly achieve levels of physical activity that are commensurate with guidelines for all adults. It would be opportunistic for the postpartum statements to reference these adult recommendations. Of the guidelines reviewed, only the US ACOG referenced the 2000 American College of Sports Medicine recommendations (17) and the USDHHS guideline, which was comprehensive for multiple groups, including postpartum women and apparently healthy adults. To facilitate the implementation of physical activity guidelines in practice, one study recommended that health professionals include a continued assessment of women in all health care encounters, including well baby visits (58). Another idea is to consider the Physical Activity Readiness Medical Examination (PARmed-X) for Pregnancy tool (59) which provides a pre-exercise checklist for the woman to complete and a prescription for health care providers to complete, as part of an evaluation of pregnant women who want to start a prenatal fitness program. Use of this tool may increase adherence to the guidelines by both providers and their patients (60, 61). A similar tool could be created for the postpartum period; this could be introduced at hospital discharge or at the first postpartum visit with a healthcare provider. Across the countries that have guidelines that we reviewed, it is standard practice to conduct a postpartum visit at approximately six weeks postpartum. In our view, this period is too long to wait for most postpartum women before resuming or beginning a low intensity physical activity program, including walking, pelvic floor, and abdominal muscle exercises.

Limitations

This review has several limitations. It was narrow in scope and other guidelines that met our review criteria may not have been captured with our search efforts, particularly those not found in PubMed. For example, the review did not include guidelines from lower income nations, indicating either the recommendations were not captured by our search procedures

or do not exist. While we abstracted information from published guidelines, some countries created supplemental documents geared towards laypersons; these were not reviewed. Future reviews can expand upon this work as guidelines are developed, updated, and better accessed. Lastly, a number of terms were used in the guidelines including “physical activity”, “exercise”, “aerobic exercise”, “aerobic activity”, and further variations with intensity modifiers (“moderate” or “vigorous”). These inconsistencies made comparisons across guidelines challenging. Definitions of these key terms should be provided and used consistently. While the focus in this review was on physical activity, another important concept to consider in the guidance documents is sedentary behavior, defined as periods of little or no movement while awake (62, 63). It is important to note that it is possible to meet physical activity recommendations and to also accumulate large amounts of sedentary time, with the latter being potentially detrimental to health and well-being. This could also be addressed in postpartum guidelines.

Conclusions

Despite these limitations, to our knowledge this review is the first to summarize and compare guidelines for postpartum physical activity from six countries. The guidelines were generally brief and often lacked specificity. Greater clarity in guidelines would be more useful to both practitioners and the women they serve. The lack of specificity may also indicate areas in need of research. To facilitate this, a critical review and synthesis of the literature is needed to guide the development of improved postpartum physical activity guidelines, and to identify areas where quality evidence is lacking. The review should cover a range of physical activities, including aerobic and strengthening exercise, as well as sedentary behavior. This evidence-based summary could stimulate more national bodies to develop guidelines where they do not exist and promote the sharing of best practices across countries. Postpartum physical activity guidelines have the potential to assist women to initiate or resume physical activity following childbirth, so that they can transition to meeting recommended levels of physical activity. Health care providers have a critical role in encouraging women to be active at this time, and the availability of more explicit guidelines may assist them to routinely include physical activity advice in their postpartum care.

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Table 1
Development of country-specific guidelines for physical activity during postpartum

	Postpartum Guidelines					
	Australia	Canada	Norway	United Kingdom	United States (ACOG)	United States (USDHHS)
Year	2002, online 2009	2002-2003	2000	2006	2002; reaffirmed in 2009 without changes	2008
Prior versions	none	1996	none	none	1985, 1994, 2002	none
Postpartum Combined with Pregnancy Guideline	yes	yes	yes	yes	yes	yes
Mentions Physical Activity Guideline for Adults	no	no	published together in same report	no	yes	published together in same report
Language of Guidelines	English	English	Norwegian	English	English	English
Organization	Sports Medicine Australia; endorsed by the Royal Australian and New Zealand College of Obstetrics and Gynaecology	Society of Obstetricians and Gynaecologists of Canada; Canadian Society for Exercise Physiology	Norwegian Directorate of Health	Royal College of Obstetricians and Gynaecologists	American College (now Congress) of Obstetricians and Gynecologists	Department of Health and Human Services
Audience	all who are involved in management of active pregnant women, including health professionals, coaches, and the women themselves	obstetricians, gynecologists, exercise physiologists	health professionals and policy makers	obstetricians, gynecologists	obstetricians, gynecologists	health professionals and policy makers
Evidence process used	narrative review of the evidence published in English to early 2002	MedLINE search 1966-2002; evidence reviewed by the societies and quantified using evaluation evidence from the Canadian Task Force on the Periodic	a working group reviewed the scientific literature and summarized the relationship between physical activity and health that provided the scientific rationale for the guidelines	MedLINE search 1980-2004, also searched several other databases	Physical Activity Guidelines Advisory Committee reviewed scientific literature (1995-8/2007) that prepared a report and provided scientific rationale for the guidelines	unknown, labelled as "committee opinion"

Postpartum Guidelines						
	Australia	Canada Health Exam	Norway	United Kingdom	United States (ACOG)	United States (USDHHS)

Table 2

Health benefits during postpartum by country-specific guidelines

Characteristics of guidelines	Australia	Canada	Norway	United Kingdom	United States (ACOG)	United States (USDHHS)
<u>Stated Health Benefits:</u>						
Improved mental health or mood	yes			yes		yes
Improved emotional well-being	yes					
Weight loss and/or maintenance				yes		yes
Cardiorespiratory fitness	yes			yes		yes
Reduce postpartum depression	yes			yes	yes	
Reduce anxiety				yes		
<u>Activities that will not affect breast milk volume, breast milk composition, or infant growth:</u>						
Sporting activities	yes*					
Moderate exercise		yes		yes		
Moderate physical activity						yes
Moderate to vigorous physical activity			yes			

* As long as there is appropriate food and fluid intake.

Table 3

Exercise prescription during postpartum by country-specific guidelines

Characteristics of guidelines	Australia	Canada	Norway	United Kingdom	United States (USDHHS)
Frequency		3-5 times/week			spread throughout the week ^{***}
Duration or total time		>=15 minutes/session			>=150 minutes/week ^{**}
Intensity		use conventional heart rate and ratings of perceived exertion targets		do not resume high impact activity too soon	moderate intensity recommended ^{***}
Type of activities:					
Aerobic activities	yes*	yes			yes
Non-ballistic exercises	yes*				
Pelvic floor exercise		yes	yes	yes	
Running	yes*				
Strengthening		yes			yes
Stretching		yes		yes	
Swimming			yes		
Walking		yes		yes	

* Specified to delay these activities until there is resolution of some of the hormonal and physical effects of pregnancy and childbirth (usually about 6 weeks postpartum).

** Among women who are not already highly active or doing vigorous intensity physical activity.

Note: Exercise prescription during postpartum was not covered by the United States ACOG guidelines.