

Pelvic Physical Therapy Distance Journal Club

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Rehabilitation of the postpartum runner: a 4-phase approach. Christopher SM, Gallagher W, Olson A, et al. JWHPT 2022.

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Introduction:

- 70% of runners who become pregnant continue to run through pregnancy and resume running between 2 weeks and 2 months postpartum
- There is potential for pelvic floor dysfunction and musculoskeletal pain with postpartum running, but there is also a great physiological and psychological advantage to exercise
- There is not a lot of evidence and research on returning to run, but many individuals are continuing to do it so we need to have guidance for them
- There are many musculoskeletal changes that may happen during pregnancy and childbirth that can affect postpartum return to activity that require rehabilitation
- Each runner should have an individualized plan to return to run and other high impact activities that is guided by clinicians, orthopedic providers, or pelvic floor physical therapists

Aim/Primary Aim: To give clinicians a framework and guidelines for rehabilitation and eventual return to run following pregnancy and childbirth.

Study Design/Study Format: Clinical guidelines for return to run in postpartum individuals

Methods: Screenings for Readiness to Run

- Screening should include thorough physical therapy evaluation, screening for impact readiness, pelvic health symptoms, physiological variables, and performing a running gait analysis
- Screening and rehabilitation framework should be stopped if there are any contraindications
 - Absolute contraindications
 - Vaginal bleeding not associated with menses (increase in bleeding in first 8 weeks postpartum; persistence or new onset beyond 8 weeks postpartum)
 - Abdominal pain
 - Hemodynamically unstable (ischemic symptoms combined with systolic BP decrease >10 mm Hg with exercise)
 - Pregnancy related or postpartum related conditions in which no vigorous exercise has been advised (such as postpartum cardiomyopathy)
 - People with cesarean birth should be cleared by their obstetric provider prior to resuming running
 - Breathing difficulties
 - Chest pain
 - Dizziness
 - Neurological symptoms, such as fainting, ataxia, or muscle weakness influencing balance
 - Calf pain or swelling
 - Pelvic and Abdominal Health
 - Subjective
 - Urine leakage with cough/sneeze/laugh/exercise?
 - Bulge or feeling of something falling out of vagina?

- Accidental leakage of feces?
 - Pain with bowel movements, intercourse, or use of tampons?
 - Pain or bulging in abdomen?
- Objective
 - Can use the Pelvic Floor Disability Inventory- 20 (PFDI-20)
 - Pelvic floor muscle strength, endurance, coordination, excursion in supine & standing
 - Grade 3 or less score on the Modified Oxford Manual Muscle Testing (MOMMT) and presence of pelvic health symptoms may warrant more time in phase I of the running progression
 - Measurement of the genital hiatus and perineal body portions of the POP-Q35
 - If the sum of these two measurements is greater than 7cm on Valsalva a pessary may be recommended for use during running
 - Assessment of pelvic floor muscle quality (e.g., elevated resting tone) and pain provocation with palpation
 - Measurement of inter-recti distance at rest and with head lift Measurement methods include ultrasound, calipers, tape measure, or finger widths based on availability
 - Active straight leg raise (ASLR) test
 - Perceived difficulty without and with external pelvic compression
 - Provocation of pelvic joint pain
 - Trunk/pelvic shift, rib flare, or breath holding
 - Abdominal muscle strength (resisted trunk rotation, head lift, manual muscle testing & endurance (forward plank) testing
 - Orthopedic assessment of pelvic joints, hip, lumbar spine
- Impact Readiness
 - Goom et al
 - Lower extremity screen includes being able to perform 20 reps:
 - single leg calf raise
 - single-leg bridge
 - single leg sit-to-stand
 - side-lying hip abduction
 - jogging in place for 1 minute
 - hopping in place for 10 reps
 - Payne et al
 - Run Readiness Scale includes six tests that are performed for one minute:
 - step ups
 - double leg hopping
 - wall sit
 - single leg squats
 - double leg squat
 - plank hold
- Running gait
 - Capturing running from two angles with a high-def camera analyzing foot strike pattern, foot inclination angle at initial contact, tibia angle loading response, knee flexion during stance, hip extension during late stance, trunk lean, stride length, vertical displacement,

base of support, heel eversion, foot progression angle, heel whips, knee window, and pelvic drop

- Physiological variable/multi-systems review
 - Sleep, fatigue, nutrition, cardiovascular, and infection
- Use Figure 1 for timeline on screening, evaluation, and initiating framework

Results: Rehabilitation Framework

- Framework proposes a progressive return to run that targets key muscle groups for gait and that may be affected after childbirth
 - pelvic floor muscles, abdominals, gluteus medius, foot muscles
- Runners may begin running at any time in post-partum period as long as they have been medically cleared and screened using above assessments
- Symptoms need to be continually re-assessed throughout framework
- Clinicians should use framework and clinical judgement to give patients appropriate exercise prescriptions including frequency, intensity, and rest
- Pelvic Floor progression
 - Supplemental Table C describes goals for PFM progression as “No leakage with exercises and or runner reports exercises are not challenging” for each phase
 - Phase I
 - Isolated quick flicks (1-2 s) and endurance hold (3-5 s) in supine, side-lying, sitting
 - Phase II
 - PFM activation with hip and abdominal draw-in maneuver in supine, side-lying, and sitting
 - Sustained quick flick and endurance holds
 - Phase III
 - Quick contractions 3 sets of 10 in standing
 - Endurance holds with hip exercises
 - PFM activations simultaneous to other exercises
 - Plyometric exercises- jumping with pelvic floor coordination
 - Phase IV
 - Vaginal weight in standing for proprioceptive input, contraction 3-5s 3 sets of 10
 - Vaginal weight with endurance hold with gentle ADLs for no greater than 20 min/day
- Before starting the running progression in phase II, runner should be able to walk for 30 minutes without exacerbation of symptoms

Discussion:

- Previous evidence may suggest an exercise plan based on time following birth, usually introducing various activities at specific time frames, which include running at 12 weeks post-partum with minimal guidance on graded return to run that is specific to these individuals.
- **Strengths**
 - Guidance for progressing and regressing framework as needed to facilitate individuals' needs and goals
 - Provides phases of rehabilitation that can be progress, with the flexibility of using clinician discretion to alter plan based on need for patient-specific care
- **Weaknesses**
 - Not every postpartum runner will be able to complete the progression and guideline as it states due to individual restrictions and symptoms

- Pelvic floor progressions in framework lack specifics and seem like they are a bit less difficult when compared to other muscle group exercises

Conclusion/Summary: Research-based post-partum rehabilitation and return to impact activity is limited, but this framework does give a comprehensive progression for return to running. Once the runner is medically cleared, the rehabilitation framework provides specific progressions with room for clinician judgements.

Clinical Application

- Understand the need for screening of impact readiness, pelvic health symptoms, and physiological variable of the postpartum runner before starting their program
- Every postpartum runner will experience different symptoms and have different barriers and timelines to their return to run; need for clinicians to give an individualized approach to their care

Discussion questions

- Are there any screening tools or outcome measures not in the article that you use as a framework for return to run in post-partum individuals?
- Is there any other testing or guidelines not listed in the screening that you would like to see before advancing to another phase?
- How do you have conversations with patients about the psychological readiness of return to activity?

Other References:

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