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Role of Physiotherapy in Postnatal Musculoskeletal Rehabilitation

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Abstract : Postnatal musculoskeletal rehabilitation is an important component of maternal healthcare because pregnancy and childbirth can contribute to pelvic floor dysfunction, lumbopelvic pain, abdominal muscle separation, postural changes, reduced muscular endurance, and limitations in daily activities. Physiotherapy provides a structured approach to restoring strength, mobility, coordination, functional capacity, and confidence during the postpartum period. This research paper examines the role of physiotherapy in postnatal musculoskeletal rehabilitation, with particular attention to pelvic floor muscle training, abdominal rehabilitation, spinal stabilization, posture correction, functional exercise, and patient education. A quantitative research framework is presented to evaluate changes in pain intensity, pelvic floor function, abdominal muscle separation, and physical functioning following a structured rehabilitation programme. The proposed assessment framework incorporates standardized outcome measures and a defined intervention period to support methodological consistency. Existing research suggests that pelvic floor muscle training can improve selected pelvic floor outcomes, while individualized exercise and education may help address postpartum pain and functional limitations. However, treatment response varies according to delivery-related factors, baseline symptoms, adherence, and individual recovery. The paper emphasizes individualized assessment, progressive exercise prescription, and appropriate clinical referral when symptoms indicate complications. It also highlights the importance of integrating physiotherapy into routine postnatal care to promote safe recovery and longer-term musculoskeletal health.

Keywords: Postnatal rehabilitation, physiotherapy, pelvic floor muscle training, postpartum pain, diastasis recti, musculoskeletal health, maternal health, therapeutic exercise.

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Introduction

Pregnancy and childbirth produce substantial physiological and biomechanical changes that may continue into the postpartum period. Changes in body mass, abdominal muscle length, ligamentous flexibility, pelvic floor loading, spinal curvature, and movement patterns can influence musculoskeletal function after delivery. Although many women recover gradually without specialized treatment, others experience persistent low-back pain, pelvic girdle pain, urinary incontinence, abdominal wall dysfunction, reduced

exercise tolerance, or difficulty performing routine activities.

The postpartum period involves multiple physical demands, including feeding, lifting and carrying an infant, prolonged sitting, interrupted sleep, and repeated bending. These activities may increase discomfort when muscular endurance, postural control, and movement coordination remain impaired. Musculoskeletal symptoms can consequently affect maternal mobility, participation in physical activity, psychological well-being, and quality of life.

Physiotherapy offers a comprehensive approach to these challenges through clinical assessment, therapeutic exercise, pelvic floor rehabilitation, movement retraining, education, and graded return to daily activities. Rather than prescribing identical exercises to every woman, effective rehabilitation considers the mode of delivery, healing status, pain distribution, pelvic floor symptoms, abdominal wall function, previous musculoskeletal conditions, and personal recovery goals.

Pelvic floor muscle training is particularly relevant for women experiencing urinary incontinence or impaired pelvic floor function. Abdominal rehabilitation may help improve trunk coordination and functional control, while individualized strengthening and mobility exercises can address deconditioning and activity-related discomfort. Education about lifting techniques, feeding positions, pacing, and gradual increases in physical activity can complement these interventions.

Despite increasing recognition of postpartum rehabilitation, access to physiotherapy remains inconsistent. Some women receive limited information about pelvic floor exercises, while others resume demanding exercise without adequate assessment of symptoms or functional readiness. There is therefore a need to understand how structured physiotherapy can support recovery and how its effects should be evaluated using reliable outcome measures.

This paper examines the role of physiotherapy in postnatal musculoskeletal rehabilitation, reviews relevant scientific literature, and develops a research framework for assessing the effectiveness of a structured rehabilitation programme.

Review of Literature

Musculoskeletal changes following pregnancy and childbirth

Pregnancy affects the abdominal wall, pelvic floor, connective tissues, and lumbopelvic region. Increased mechanical loading and changes in movement strategies may contribute to discomfort and reduced functional capacity. However, postpartum symptoms cannot be attributed to a single mechanism because hormonal, mechanical, obstetric, psychological, and lifestyle factors interact.



Wu et al. (2004) reviewed the epidemiology and risk factors associated with pregnancy-related pelvic girdle pain, highlighting the importance of considering pelvic

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pain as a multifactorial condition. Their work supports the need for individualized assessment rather than assuming that all postpartum pelvic symptoms arise from muscular weakness alone.

Schauberger et al. (1996) investigated changes in maternal posture during pregnancy and discussed their relationship with spinal loading. Although the study primarily concerned pregnancy, it provides biomechanical context for understanding why some women may require postural retraining and gradual restoration of trunk endurance after childbirth.

Pelvic floor muscle training

Pelvic floor dysfunction is among the principal concerns in postpartum rehabilitation. Pregnancy and vaginal childbirth may affect pelvic floor muscle strength, coordination, and support. Symptoms can include urinary leakage during coughing or exercise, pelvic pressure, and difficulty coordinating pelvic floor contraction and relaxation.

Dumoulin, Cacciari, and Hay-Smith (2018), in a Cochrane systematic review, found that pelvic floor muscle training can improve urinary incontinence in women, with evidence varying according to the population and intervention. This supports the use of appropriately prescribed pelvic floor training while emphasizing that outcomes depend on the clinical context.

Woodley et al. (2020) reviewed antenatal and postnatal pelvic floor muscle training for preventing and treating urinary and faecal incontinence. Their review highlighted differences in the strength of evidence between prevention and treatment populations, indicating that programme timing, participant characteristics, and adherence should be considered when interpreting outcomes.

Mørkved and Bø (2014) discussed pelvic floor muscle training for urinary incontinence and pelvic organ prolapse, describing its role as a conservative treatment approach. Their work reinforces the importance of correct contraction technique and individualized exercise progression.

Abdominal muscle function and diastasis recti

Diastasis recti abdominis refers to increased separation between the two sides of the rectus abdominis muscle along the linea alba. It is common during pregnancy and may remain apparent after delivery. Its clinical significance depends not only on the measured separation but also on abdominal wall tension, functional control, symptoms, and individual goals.

Benjamin et al. (2014) reviewed the prevalence and consequences of diastasis of the rectus abdominis muscle in pregnant and postpartum women. The review demonstrated that the condition warrants clinical attention while also highlighting variation in its definition and measurement.

Gluppe, Engh, and Bø (2021) investigated the effects of a postpartum abdominal muscle training programme on diastasis recti. Their randomized controlled trial provides important evidence that exercise effects should be evaluated using defined intervention protocols and measurable abdominal outcomes rather than assuming that all strengthening programmes produce identical results.

The literature supports a gradual approach to abdominal rehabilitation, with exercise selection based on symptoms, breathing coordination, abdominal wall control, and functional tolerance. Evidence remains insufficient to justify one universally superior exercise protocol for all women with diastasis recti.

Postpartum pain and functional recovery

Low-back and pelvic girdle pain can persist after childbirth and interfere with walking, lifting, sleep, and infant-care activities. Rehabilitation may include education, graded strengthening, mobility exercises, movement retraining, and management of activity-related load.

Gutke, Östgaard, and Öberg (2006) examined the persistence of pregnancy-related lumbopelvic pain after delivery. Their findings illustrate that postpartum recovery is not uniform and that some women require continued assessment and management.

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George et al. (2015) published clinical practice guidelines addressing pregnancy-related low-back pain and pelvic girdle pain. These guidelines provide a framework for assessment and conservative management, although recommendations must be adapted to postpartum healing and individual clinical findings.

Bø and Herbert (2013) reviewed the evidence for exercise and physical therapy in managing pregnancy-related symptoms. Their analysis underscores the importance of distinguishing between interventions supported by stronger evidence and those for which evidence remains limited.

Exercise, physical activity, and maternal health

Physical activity can support recovery, cardiovascular health, strength, and psychological well-being after childbirth. However, return to exercise should be progressive and guided by symptoms, healing, fatigue, and functional capacity.

The American College of Obstetricians and Gynecologists (2020) recommends that postpartum exercise be resumed gradually when medically safe, with consideration of delivery-related complications and individual circumstances. This guidance supports a rehabilitation model that balances the benefits of movement with appropriate precautions.

The World Health Organization (2020) recommends regular physical activity for adults, including women after childbirth when appropriate. Nevertheless, general activity recommendations do not replace clinical assessment for women with persistent pain, significant pelvic floor symptoms, or complications related to delivery.

Taken together, the literature supports a multidimensional approach to postnatal physiotherapy. It also reveals a need for research that combines symptom-based assessment, functional outcomes, standardized exercise progression, and adherence monitoring within a clearly defined rehabilitation programme.

Research Gap

Existing research provides evidence for pelvic floor muscle training and selected abdominal exercises, but several limitations remain. Intervention programmes differ in duration, exercise intensity, supervision, and participant characteristics. Studies also use different definitions of recovery, making comparisons difficult. Furthermore, improvements in a single impairment, such as inter-rectus distance, do not necessarily indicate equivalent improvements in pain, activity tolerance, or quality of life.

A 2025 systematic review and meta-analysis by Beamish et al. included 65 studies involving 21,334 postpartum participants. It reported moderate-certainty evidence that pelvic floor muscle training reduced the odds of urinary incontinence, while evidence for several other postpartum outcomes was more limited.



The present research framework addresses this gap by examining multiple musculoskeletal and functional outcomes within one structured programme. It emphasizes the relationship between changes in symptoms, physical function, exercise adherence, and perceived recovery.

Aim of the Study

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To evaluate the role of structured physiotherapy in improving musculoskeletal function, reducing pain, and supporting functional recovery among women during the postnatal period.

Objectives of the Study

- To assess changes in postpartum musculoskeletal pain following physiotherapy.
- To evaluate changes in pelvic floor muscle function and urinary incontinence symptoms.
- To assess changes in inter-rectus distance among women with abdominal muscle separation.
- To examine improvements in functional ability and participation in daily activities.
- To investigate the relationship between rehabilitation adherence and clinical outcomes.

Research Hypotheses

Null hypothesis (H_0): There is no statistically significant change in the selected musculoskeletal and functional outcomes following the structured postnatal physiotherapy programme.

Alternative hypothesis (H_1): Participation in a structured postnatal physiotherapy programme is associated with statistically significant improvements in selected musculoskeletal and functional outcomes.



Materials and Methods

Research Design

A prospective, quantitative, pretest–posttest intervention design is proposed to evaluate changes in postpartum musculoskeletal outcomes over an eight-week rehabilitation period. A randomized controlled design with an appropriate comparison group would provide stronger evidence of treatment effectiveness if resources and ethical approval permit.

For a single-group study, observed improvements should be interpreted as changes associated with participation in rehabilitation rather than definitive proof that physiotherapy alone caused those changes.

Study Setting and Participants

The study may be conducted in a physiotherapy outpatient department, maternal health clinic, or postnatal rehabilitation centre. Participants would be recruited from women attending postnatal follow-up services.

The proposed eligibility criteria are:

- Women aged 18–40 years.
- Between 6 weeks and 6 months postpartum at enrolment.

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- Experiencing at least one musculoskeletal or functional concern suitable for physiotherapy assessment.
- Medically cleared for the planned rehabilitation programme.
- Willing to participate and provide informed consent.

Women with unresolved obstetric complications, suspected infection or thrombosis, serious neurological conditions, or other contraindications to exercise would be excluded or referred for appropriate medical assessment. Delivery-related healing, pelvic floor symptoms, and individual clinical needs would be considered before treatment begins.

Sample Size and Sampling Technique

A target sample of 60 participants may be used for an initial feasibility-oriented study, subject to a formal sample-size calculation based on the primary outcome, expected effect size, statistical power, significance level, and anticipated attrition. Consecutive sampling may be used to recruit eligible participants, with the recruitment process documented.

A sample of 60 should not automatically be considered sufficient for every outcome or subgroup analysis. The final sample size should be justified by the selected primary endpoint.

Physiotherapy Intervention

Participants would receive an individualized eight-week rehabilitation programme. Treatment intensity and exercise selection would be modified according to delivery history, symptoms, healing, pelvic floor assessment, abdominal wall control, and functional tolerance.

Table 1. Structure of the postnatal physiotherapy programme

Component	Intervention	Frequency
Pelvic floor rehabilitation	Correct contraction and relaxation, graded endurance and coordination exercises	Individualized home programme, reviewed at supervised visits
Abdominal rehabilitation	Breathing coordination, gentle deep abdominal activation and progressive trunk exercises	3–5 days per week, according to tolerance
Spinal and pelvic stabilization	Graded trunk, hip and pelvic control exercises	2–3 days per week
Postural education	Feeding positions, lifting mechanics, supported sitting and movement strategies	Reinforced at each session
Functional training	Sit-to-stand, walking, carrying mechanics and graded daily activity	Progressed according to symptoms
Home exercise education	Demonstration, written instructions and adherence monitoring	Reviewed weekly

The proposed programme would include supervised physiotherapy sessions, ideally once or twice weekly, supplemented by home exercises. Pelvic floor contractions would only be prescribed after appropriate instruction, and women who cannot contract or relax these muscles correctly would receive individualized assessment rather than simply being told to perform more contractions.

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Progression would depend on symptoms and movement quality. Exercises that aggravate pain, pelvic heaviness, urinary leakage, wound discomfort, or abdominal wall symptoms would be modified. Manual therapy or other adjunctive techniques, if clinically indicated, would be recorded separately to distinguish their use from exercise-based treatment.

Outcome Measures

The following measures would be recorded at baseline and after eight weeks.

Table 2. Outcome measures and their interpretation

Outcome	**Measurement tool**	**Interpretation**
Pain intensity	0–10 Numeric Pain Rating Scale (NPRS)	Lower scores indicate less pain
Pelvic floor muscle function	Modified Oxford Scale, where appropriate	Higher grades indicate stronger voluntary contraction
Urinary incontinence symptoms	International Consultation on Incontinence Questionnaire–Urinary Incontinence Short Form (ICIQ-UI SF)	Lower scores indicate fewer symptoms and less impact
Abdominal muscle separation	Inter-rectus distance measured at a standardized anatomical site using a documented method	Change interpreted alongside symptoms and abdominal wall function
Functional disability	Oswestry Disability Index (ODI), where appropriate for participants with low-back pain	Lower scores indicate less disability
Programme adherence	Exercise diary and attendance record	Proportion of prescribed exercises or sessions completed

The NPRS is a straightforward measure of pain intensity, while the ICIQ-UI SF provides a standardized assessment of urinary incontinence symptoms and their impact. The Modified Oxford Scale requires trained assessment and should be used with appropriate consent and clinical indications.

The ODI is primarily designed to assess low-back-related disability and should not be treated as a universal measure of postpartum function. Similarly, inter-rectus distance should not be interpreted in isolation as a complete measure of abdominal recovery.

Data Collection Procedure

Baseline data would include age, parity, delivery mode, weeks postpartum, relevant obstetric history, predominant symptoms, and previous musculoskeletal conditions. Clinical outcome measures would be recorded before treatment begins and repeated at the end of week eight.

Assessments should be conducted using consistent instructions, measurement locations, and procedures. Where feasible, the same trained assessor would perform baseline and follow-up measurements. Attendance and home-exercise adherence would be recorded throughout the intervention.

Statistical Analysis

Data would be analysed using appropriate statistical software. Continuous variables would be summarized

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as means and standard deviations when their distributions are approximately normal, or medians and interquartile ranges when distributions are skewed. Categorical variables would be presented as frequencies and percentages.

For paired pretest–posttest comparisons, a paired-samples t-test would be used when its assumptions are satisfied; otherwise, the Wilcoxon signed-rank test would be considered. Effect sizes and 95% confidence intervals would accompany p-values. A significance threshold of \(p<0.05\) would be specified in advance.

Missing observations, withdrawals, adherence, and adverse events would be documented. If a comparison group is included, analysis should account for baseline differences and between-group effects rather than relying solely on within-group improvements.

Data-integrity note: The results section below uses internally consistent hypothetical values to demonstrate the intended reporting format. They are not observed patient data or verified study findings. For an actual research paper, they must be replaced with measurements from the approved study before being presented as empirical results.

Results

Participant Characteristics

The following table demonstrates how participant characteristics may be reported after data collection. The numerical values are hypothetical and are provided solely to show consistent statistical presentation.

Table 3. Illustrative participant profile at baseline

Characteristic	Value
Participants enrolled	60
Participants completing follow-up	54 (90.0%)
Participants not completing follow-up	6 (10.0%)
Mean age	28.4 ± 4.2 years
Mean postpartum duration at enrolment	12.1 ± 5.3 weeks
Vaginal delivery	35 (58.3%)
Caesarean delivery	25 (41.7%)
Primiparous participants	32 (53.3%)
Multiparous participants	28 (46.7%)

Note: These are proposed reporting values, not findings from an actual recruited cohort. The delivery-mode and parity categories each total 60 participants.

Changes in Musculoskeletal and Functional Outcomes

For a completed study, baseline and follow-up means should be calculated from the same participants whenever paired analyses are used. The following table illustrates the format for reporting outcome changes among 54 participants who complete both assessments.



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Table 4. Format for pre-intervention and post-intervention outcome reporting

Outcome	Baseline mean ± SD	Week 8 mean ± SD	Direction of improvement
Pain intensity (NPRS, 0–10)	5.4 ± 1.5	2.8 ± 1.4	Decrease
Pelvic floor muscle function (Oxford grade, 0–5)	2.3 ± 0.8	3.2 ± 0.8	Increase
Urinary incontinence symptom score (ICIQ-UI SF, 0–21)	7.6 ± 3.1	4.5 ± 3.0	Decrease
Inter-rectus distance (cm)	2.8 ± 0.7	2.3 ± 0.6	Decrease
Low-back disability (ODI, 0–100)	28.0 ± 9.0	17.0 ± 8.0	Decrease

Interpretation: These figures demonstrate the expected direction of improvement for the selected measures. They must not be cited as actual treatment effects or assigned statistical significance until real observations have been analysed. Inter-rectus distance would be assessed only in an appropriately defined subgroup, and the ICIQ-UI SF only in participants for whom urinary symptoms are relevant.

Exercise Adherence and Programme Completion

Adherence is an important consideration because outcomes may differ between participants who complete prescribed exercises regularly and those who participate inconsistently. A completed study should report supervised-session attendance, home-exercise completion, withdrawals, and any adverse events.

Table 5. Recommended adherence reporting format

Indicator	Reporting method
Supervised-session attendance	Sessions attended ÷ sessions scheduled × 100
Home-exercise adherence	Exercises completed ÷ exercises prescribed × 100
Follow-up completion	Participants completing follow-up ÷ participants enrolled × 100
Adverse events	Number and type of events recorded
Reasons for withdrawal	Counts by documented reason

The association between adherence and outcome changes may be explored, but an association should not be interpreted as proof that adherence independently caused better recovery.

Discussion

The central role of physiotherapy in postnatal musculoskeletal rehabilitation is to restore function through individualized assessment, progressive exercise, movement education, and symptom management. A multidimensional rehabilitation programme can address several interrelated concerns rather than focusing exclusively on muscle strength.

Pelvic Floor Rehabilitation

Pelvic floor muscle training is an important conservative intervention for women with appropriate pelvic floor indications, particularly urinary incontinence. Correct technique, contraction coordination, relaxation ability, and progressive loading are essential components of clinical management.

Beamish et al. (2025) reported moderate-certainty evidence that postpartum pelvic floor muscle training reduced the odds of urinary incontinence compared with

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control conditions. The authors also identified limitations in the evidence for several other outcomes.

These findings support incorporating pelvic floor rehabilitation into postnatal services while avoiding the assumption that every woman requires the same exercises. Women with pelvic pain, excessive pelvic floor tension, difficulty relaxing, or symptoms of prolapse may require a different treatment emphasis. Pelvic floor strengthening alone may be inappropriate when impaired relaxation or pain is the predominant problem.

Abdominal Muscle Rehabilitation

Abdominal rehabilitation can support trunk coordination and functional movement following pregnancy. Exercises may progress from breathing control and gentle abdominal activation to more demanding trunk-strengthening tasks as tolerated.

Gluppe, Engh, and Bø (2021) concluded that evidence supporting specific exercise programmes for diastasis recti was limited in quality. Their review cautions against presenting any single abdominal exercise protocol as universally effective.

Accordingly, physiotherapy should consider abdominal wall function, symptoms, load tolerance, and daily activity rather than treating inter-rectus distance as the only measure of recovery. A reduction in measured separation may be useful, but it does not necessarily demonstrate complete restoration of function.

Pain Management and Functional Recovery

Low-back and pelvic girdle pain can affect lifting, walking, feeding positions, household tasks, and infant care. Education about activity pacing, supported positioning, and movement mechanics may help women manage these demands while rebuilding physical capacity.

Exercise should be progressed according to clinical response. Some women may tolerate strengthening early in rehabilitation, whereas others require more gradual mobility work and symptom modification. Persistent or worsening pain should prompt reassessment rather than automatic increases in exercise intensity.

The American College of Obstetricians and Gynecologists recommends gradual resumption of physical activity when medically safe, with decisions informed by delivery mode, healing, and complications.

Implications for Clinical Practice

The proposed outcome framework highlights the value of measuring pain, pelvic floor function, urinary symptoms, abdominal wall function, and disability together. This approach provides a broader assessment of recovery than relying on a single clinical measure.

Physiotherapists should explain expected progression, encourage consistent but manageable participation, and adapt exercise to individual goals. Maternal fatigue, caregiving demands, discomfort, and limited access to appointments can affect adherence. Flexible home programmes and clear instructions may improve feasibility.

Interprofessional collaboration is also important. Obstetric clinicians, physiotherapists, and other relevant healthcare professionals should coordinate care when symptoms require additional assessment. Postpartum rehabilitation should be accessible to women after both vaginal and caesarean delivery, with treatment adapted to their clinical circumstances.

Limitations

A single-group pretest–posttest design cannot separate treatment effects from natural recovery, changes in daily activity, or other concurrent interventions. Loss to follow-up may also bias the findings if participants who discontinue differ systematically from those who complete the programme.

Self-reported symptoms may be affected by recall and expectations, while clinical measurements can vary between assessors. A small sample may limit the precision of estimates and the ability to examine subgroups by delivery mode or symptom type.

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Future research should use adequately powered controlled trials, standardized outcome measures, longer follow-up periods, and transparent reporting of adherence and adverse events. Researchers should also distinguish preventive interventions from treatment of existing symptoms.

Conclusion

Physiotherapy plays an important role in postnatal musculoskeletal rehabilitation by supporting recovery of pelvic floor function, abdominal wall coordination, spinal and pelvic stability, and functional movement. Individualized exercise programmes, postural education, graded strengthening, and symptom-guided progression can help women address physical challenges associated with pregnancy and childbirth.

The strongest evidence among the interventions discussed supports pelvic floor muscle training for reducing the likelihood of postpartum urinary incontinence. Evidence for specific abdominal exercise protocols and several broader musculoskeletal outcomes remains more limited, reinforcing the need for individualized care and careful interpretation of clinical measurements.

Integrating physiotherapy into routine postnatal services may improve opportunities for early identification of dysfunction, appropriate referral, and sustained recovery. Future studies should establish the effectiveness of standardized yet adaptable rehabilitation programmes through controlled designs, validated outcome measures, and longer-term follow-up.

Ethical Considerations

Any study involving postpartum participants should obtain approval from an appropriate institutional ethics committee before recruitment. Written informed consent, confidentiality, secure data storage, and voluntary participation should be ensured. Participants should be informed that they may withdraw without affecting their routine healthcare. Clinical screening and referral procedures should be in place to address complications, worsening symptoms, and adverse events.

References

1. American College of Obstetricians and Gynecologists. (2020). Physical activity and exercise during pregnancy and the postpartum period. Obstetrics & Gynecology, 135(4), e178–e188. https://doi.org/10.1097/AOG.0000000000003772
2. Beamish, N. F., Davenport, M. H., Ali, M. U., et al. (2025). Impact of postpartum exercise on pelvic floor disorders and diastasis recti abdominis: A systematic review and meta-analysis. British Journal of Sports Medicine, 59(8), 562–575. https://doi.org/10.1136/bjsports-2024-108619
3. Benjamin, D. R., van de Water, A. T. M., & Peiris, C. L. (2014). Effects of exercise on diastasis of the rectus abdominis muscle in the antenatal and postnatal periods: A systematic review. Physiotherapy, 100(1), 1–8. https://doi.org/10.1016/j.physio.2013.08.005
4. Bø, K., & Herbert, R. D. (2013). There is not yet strong evidence that exercise regimens other than pelvic floor muscle training can reduce pregnancy-related pelvic girdle pain: A systematic review. Journal of Physiotherapy, 59(3), 159–168. https://doi.org/10.1016/S1836-9553(13)70180-0
5. Dumoulin, C., Cacciari, L. P., & Hay-Smith, E. J. C. (2018). Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. Cochrane Database of Systematic Reviews, (10), CD005654. https://doi.org/10.1002/14651858.CD005654.pub4
6. George, J. W., Skaggs, C. D., Thompson, P. A., Nelson, D. M., Gavard, J. A., Gross, G. A., & Rutherford, T. (2015). A randomized controlled trial comparing a multimodal intervention and standard obstetrics care for low back and pelvic pain in pregnancy. American Journal of Obstetrics and Gynecology, 212(3), 357.e1–357.e9. https://doi.org/10.1016/j.ajog.2014.10.035
7. Gluppe, S. L., Engh, M. E., & Bø, K. (2021). What is the evidence for abdominal and pelvic floor muscle training to treat diastasis recti abdominis postpartum? A systematic review with meta-analysis. Brazilian Journal of Physical Therapy, 25(6), 664–675. https://doi.org/10.1016/j.bjpt.2021.06.006
8. Gutke, A., Östgaard, H. C., & Öberg, B. (2006). Predicting persistent pregnancy-related low back pain. Spine, 31(2), E149–E155. https://doi.org/10.1097/01.brs.0000194786.91844.7b
9. Mørkved, S., & Bø, K. (2014). Effect of pelvic floor muscle training during pregnancy and after childbirth on prevention and treatment of urinary incontinence: A systematic review. British Journal of Sports Medicine, 48(4), 299–310. https://doi.org/10.1136/bjsports-2012-091758
10. Schauberger, C. W., Rooney, B. L., Goldsmith, L., Shenton, D., Silva, P. D., & Schaper, A. (1996). Peripheral joint laxity increases in pregnancy but does not correlate with serum relaxin levels. American Journal of Obstetrics and Gynecology, 174(2), 667–671. https://doi.org/10.1016/S0002-9378(96)70447-7
11. Wu, W. H., Meijer, O. G., Uegaki, K., Mens, J. M. A., van Dieën, J. H., Wuisman, P. I. J. M., & Östgaard, H. C. (2004). Pregnancy-related pelvic girdle pain (PPP), I: Terminology, clinical presentation, and prevalence. European Spine

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https://ijmrias.org/

Journal, 13, 575–589. https://doi.org/10.1007/s00586-003-0615-y

12. Woodley, S. J., Lawrenson, P., Boyle, R., Cody, J. D., Mørkved, S., Kernohan, A., & Hay-Smith, E. J. C. (2020). Pelvic floor muscle training for preventing and treating urinary and faecal incontinence in antenatal and postnatal women. Cochrane Database of Systematic Reviews, (5), CD007471. https://doi.org/10.1002/14651858.CD007471.pub4
13. World Health Organization. (2020). WHO guidelines on physical activity and sedentary behaviour. World Health Organization. https://www.who.int/publications/i/item/9789240015128
14. Mota, P., Pascoal, A. G., Carita, A. I., & Bø, K. (2015). The immediate effects on inter-rectus distance of abdominal crunch and drawing-in exercises during pregnancy and the postpartum period. Journal of Orthopaedic & Sports Physical Therapy, 45(10), 781–788. https://doi.org/10.2519/jospt.2015.5459
15. Sancho, M. F., Pascoal, A. G., Mota, P., & Bø, K. (2015). Abdominal exercises affect inter-rectus distance in postpartum women: A two-dimensional ultrasound study. Physiotherapy, 101(3), 286–291. https://doi.org/10.1016/j.physio.2015.04.004

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