

Exercise and Rehab Issues in the Pregnant and Postpartum Female Athlete



Nicole Ferguson, PT, MSPT, CSCS
Samantha Oft, PT, DPT, ATC, LAT

Agenda

Pregnancy

1. Anatomical and Physiological Changes
2. Exercise
3. Rehab Considerations

Postpartum

1. Physical Considerations
2. Psychosocial Considerations
3. Return to Exercise
4. Referral

Pregnancy

Anatomical and Physiological Changes in Pregnancy

Musculoskeletal ^{1,2}

- Center of gravity shifts
 - Ligamentous laxity
- *Affects postural balance
- *May interfere with performance of specific sports
- *Increased risk for sprains and strains



Morphological and Physiological Changes in Pregnancy

Cardiovascular^{1,2}

- ↑ cardiac output
- ↑ maternal blood volume
- ↓ systemic vascular resistance
- ↑ blood flow to the uterus

Morphological and Physiological Changes in Pregnancy

Respiratory ^{1,2}

- ↑ tidal volume
- ↑ $\dot{V}O_2$
- Impaired ventilation (rise in diaphragm)

Exercising in Pregnancy

Exercise Recommendations in Research

ACOG and US Dept HHS recommends...^{3,4}

- 30 min or more of moderate intensity exercise 5-7 days/week
- Those who habitually engage in vigorous intensity aerobic activity/highly active, can continue during pregnancy as long as they are healthy



Exercising in Pregnancy

Exercise Recommendations in Research

- Exercise below 90% MHR ^{5,6}
- Monitor intensity of exercise through HR directly (avoid Borg's RPE scale) ⁷
- Aerobic fitness will stay the same or improve slightly ¹



Exercising in Pregnancy

Exercise Recommendations in Research ¹

- Light-moderate strength training is safe
- Large strength gains can be made
- Monitor for Hypotension Syndrome (10-20% pregnant women)



Exercising in Pregnancy

Important Points to Remember...

- Rules do not apply for high risk pregnancy
- Follow MD Guidelines
- Every pregnancy is different
- Research is variable and lacking



Pregnancy and Rehab

Contraindicated Modalities ⁸

- Pulsed and Continuous US (local)
- Electrical Stimulation (local)
- Low-level Laser Therapy (local)
- Thermal & Non-Thermal Short Wave Therapy
- Superficial Heat (Hydrotherapy Tanks)

Safe Modalities ⁸

- Cryotherapy
- Superficial Heat (Extremities)

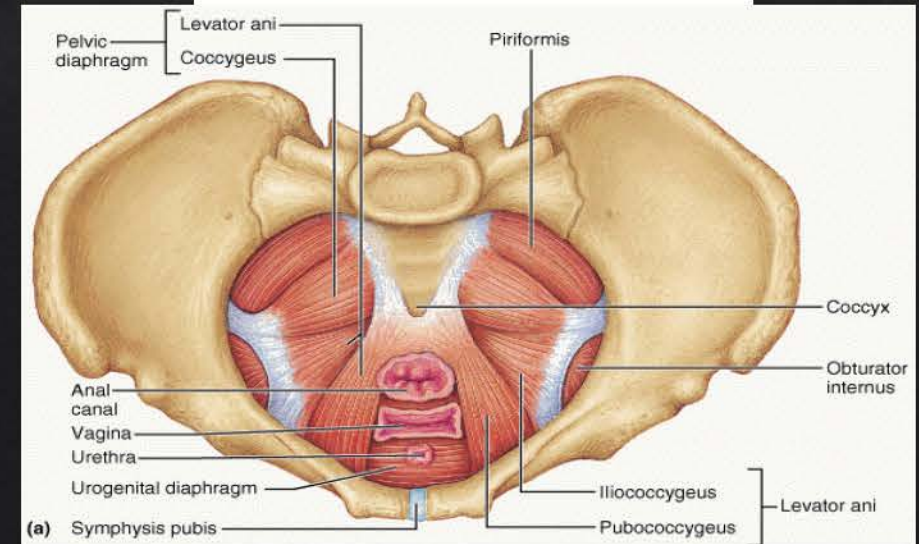
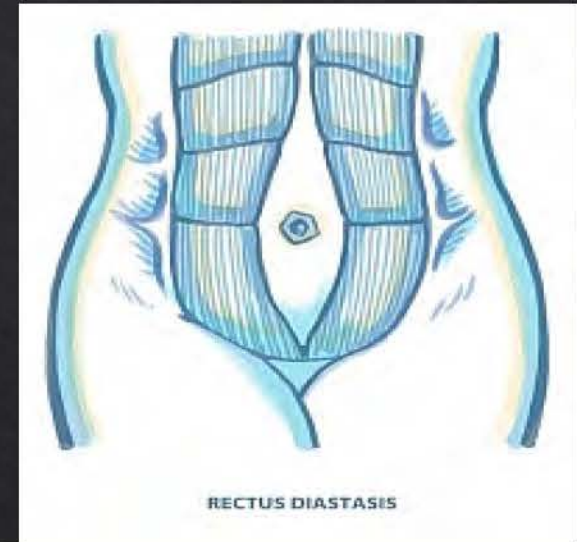
Pregnancy and Rehab

- 50% prevalence rate of pregnancy related LBP & PGP (20-25% will require medical help) ¹
- Already a high prevalence of UI in nulliparous female athletes.¹ This condition gets worse with pregnancy.
- Rectus Diastasis begins in pregnancy and becomes a postpartum consideration. No studies found on prevention/treatment for this condition during pregnancy.¹

Postpartum

Physical Considerations

- L&D History
 - Vaginal vs. Cesarean
- Pelvic Floor Dysfunction
 - Stress Incontinence
 - Pain
 - Prolapse
- Rectus Diastasis⁹⁻¹¹



Physical Considerations

- Breastfeeding
 - Ligamentous laxity
 - Clogged ducts/mastitis
- Thoracic Hypomobility
 - Weight distribution during pregnancy
 - Posture
- SI Joint Dysfunction
 - Unilateral hip carry



Psychosocial Considerations

“Baby Blues”¹²

- Mood swings
- Irritability
- Sadness/crying
- Anxiety
- Feeling overwhelmed
- Appetite disturbance
- Sleep deprivation



Psychosocial Considerations

- Postpartum Depression^{12,14}
 - Difficulty bonding with baby
 - Fear of being a bad parent
 - Loss of interest or pleasure in favorite activities
 - Severe anxiety/panic attacks
 - Impaired memory and concentration
 - Withdrawal
 - Suicidal ideation



Psychosocial Considerations

- Body Image
 - Excess weight/body fat
 - Striae gravidarum
 - Weight plateau
 - Body fat/weight loss
 - Muscle Building
 - Rib Cage Expansion¹³



Psychosocial Considerations

- Breastfeeding
 - Social pressure
 - Difficulty with weight regulation
 - Fear of decreased milk supply with exercise
- Sleep deprivation
- Relationship changes
- Lifestyle changes



Return to Training vs. Competition

- 6-8 weeks post-partum
 - MD clearance depending upon delivery
- Often ready to begin exercise, **NOT** to compete or perform



Refer, Refer, Refer

- OB/GYN
 - Bleeding, pelvic pain
 - Postpartum psychiatric disorders
- Women's/Pelvic Health
 - Pelvic floor dysfunction
 - Pelvic pain
 - Pain with intercourse



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