

# Exercise Prescription in the Prenatal and Postpartum Population

Micky Marie Morrison, PT, ICPFE

## Necessity for PT in Prenatal and Postpartum Phases

- progressive weakness in muscles that become overstretched during pregnancy
- progressive tightness/tension/ spasm in opposing muscle groups
- postural changes
- aches and pains associated with all of the above

## Benefits of Prenatal Exercise- evidence-based, multiple studies

- Decreased pregnancy weight gain
- Decreased pain/ discomfort
- Decreased medical intervention during childbirth
- Decreased length of labor
- Faster postpartum recovery

## Anatomy and Physiology of Pregnancy and Childbirth

- Hormonal Changes- significant to PT because lead to ligament laxity
- Body Changes- shift in position of uterus causes shift in COG, increased breast weight
- Postural Changes- posterior shift of upper body, forward head and rounded shoulders, anterior pelvic tilt and increased lordosis, external hip rotation (see graphic on pg. 4)
- Muscular Changes- Tight cervical paraspinals, SCM, and anterior chest, Overstretched periscapular muscles, Overstretched Abdominals, Diastasis Recti\*, Tight lumbar extensors, hip flexors, quadriceps; Overstretched Pelvic Floor; Tight hip rotators and heel cords

\*Diastasis Recti- Separation of the two sides of the Rectus Abdominus ms, normal in all pregnancies to a degree, considered abnormal or problematic if it reaches or exceeds 3 finger-widths

## Residual Effects in the Postpartum Body

- continued weakness in overstretched muscles- abdominal corset, thoracic extensors, pelvic floor)
- continued tightness in tight muscles- cervical paraspinals, trapezius, hip flexors, lumbar extensors, hip external rotators, quads, heel cords

- continued aches and pains
- stress urinary incontinence and pelvic organ prolapse

#### Role of PT in Prenatal Phase

- Exs prescription to: Strengthen what is weak, stretch what is tight, and counteract postural changes
- Treat aches and pains
- Patient Education for: Safe exs practices and strategies to stay active during pregnancy, joint protection, body mechanics
- Treatment of non-pregnancy related issues

#### Role of PT in Postpartum Phase

- Exs prescription to: Strengthen what is weak, stretch what is tight, and counteract postural changes; FOCUS on core muscles, pelvic floor, and building endurance
- Correct Diastasis Recti
- Patient Education for: Strategies to stay active with new baby, joint protection until 4 months PP, body mechanics, safely strengthening

#### Special Considerations in Prenatal and Postpartum Exercise Prescription

- Ligament Laxity- increased risk of injury; low impact and submaximal is key
- Diastasis Recti- If gap reaches or exceeds 3 finger widths, activities modified
- Pelvic Floor Symptoms- ask about B&B Sx, incontinence, constipation

#### Preventing Diastasis Recti During Pregnancy

- Avoid overstraining rectus abdominus muscle is key!
- Consider kinetic chain with exercise and activities
- Teach rolling to sit
- Splinting with exercises if gap approaches 2 finger-widths
- Progress strengthening exercises gradually only after one level is mastered- isometrics, adding unilateral then bilateral movements first with bilateral then unilateral support
- Sample progression: Pelvic Tilt-->Heel Slide-->Chin Lift-->Heelslide with Chin Lift-->Single Knee Lift-->Straight Leg Raise-->Toe Taps-->Single Leg Ext (unsupported)

## Treating Diastasis Recti Postpartum

- If gap > 3 finger-widths, use splinting technique with isometric exercise until gap closes to 3 finger-widths
- Gradually progress exercises to add LE movement with splinting technique, first with bilateral support then with unilateral support until gap is closed to 2 finger-widths
- Resume normal abdominal training progression once gap is closed to 2 finger-widths or less
- Sample Progression: Pelvic Tilt-->Heel Slide-->Chin Lift-->Heelslide with Chin Lift (all with splinting technique until gap closes to less than 3 finger widths)--> ADD Single Knee Lift-->Straight Leg Raise (both with splinting technique until gap closes to 2 fingers or less)-->Toe Taps-->Single Leg Ext (unsupported)

## Prenatal and Postpartum Fitness Plan should include:

- Cardio Component- 20+ minutes 3 x/wk at 60-75% of target heart rate; should be low impact; walking, swimming, elliptical machine, water aerobics, low impact cardio classes (for seniors); jogging is ok if previously was a runner
- Specific Strengthening and Stretching exercises 3x/wk
- Pelvic Floor Component

## Pelvic Floor in PT

- PF ms help to support the pelvic organs and aid in urinary and fecal continence
- Teach patient to isolate the PF ms w/ "pee test"; use fast contract and slow hold isometrics to train both fast and slow twitch fibers and to build endurance
- Train the PF ms just as we do any other ms group, with progressive resistance- start isometric in gravity eliminated position, move to against gravity (supine-->sitting-->standing--> squatting)
- Incorporate PF exs into other exercises, esp. lumbar stabilization progression and hip adduction
- Teach patient to incorporate PF exs into daily tasks to make it a habit (traffic lights, waiting in line, brushing teeth, commercial breaks)

## Safe Abdominal Muscle Training During Pregnancy

- Same progression as with lumbar stabilization exercises:

Isometric--> Unilateral LE movement (first w/ BLE support then unilateral, and first w/ knee flexion, then w/ knee ext)--> Bilateral Unsupported--> Add unilateral LE mvmt--> BLE mvmt (first with flexion then extension)

- Work also in other positions: Quadruped, plank/ modified plank, sidelying, sitting and standing

### Postpartum Progression of Abdominal Exercises

- Same as prenatal in absence of significant diastasis recti, but now include elements not safe during pregnancy:
- Add weight or resistance as tolerated
- Include open-chain activities

## Problems Associated with Poor Posture During Pregnancy

### 1. Forward tilting of the neck:

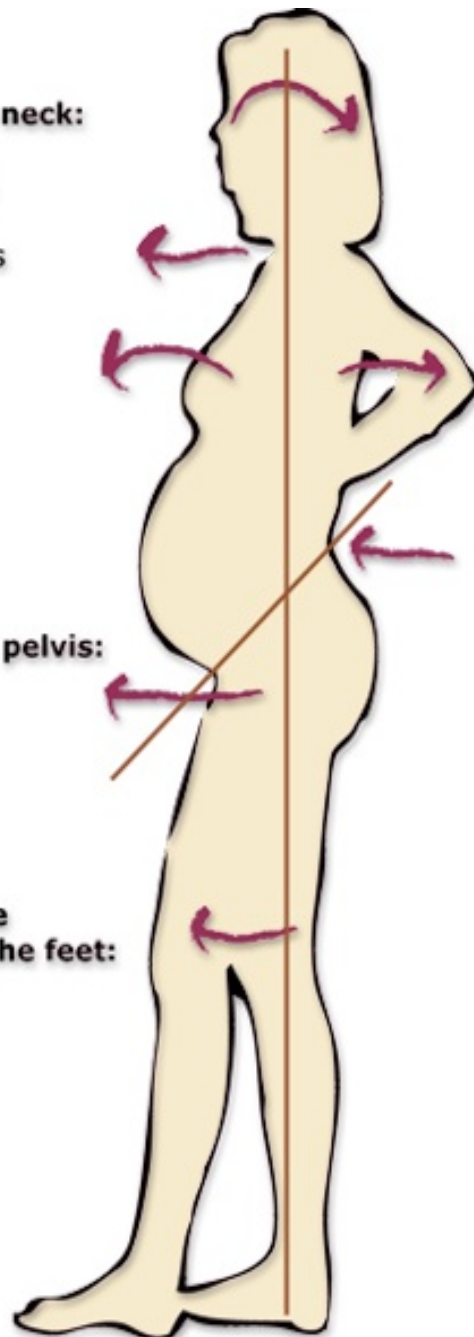
- Neck pain
- Numbness and tingling in hands and fingers
- Pain b/w shoulder blades
- Carpal Tunnel

### 2. Forward tilting of the pelvis:

- Sciatica
- Low back pain
- Leg pain
- Pubic pain

### 3. Hyperextension of the knees & flattening of the feet:

- Heel pain
- Foot pain



### 4. Backwards extension of the head:

- Neck pain and stiffness
- Headaches

### 5. Hyperextension of the Upper Back:

- Rib Pain
- Difficulty Breathing

### 6. Accentuated low back curvature:

- Low back pain and strain