How Can Doulas Improve the Musculoskeletal Health of Childbearing Women?

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Doulas have a unique position

- Ability to interact with healthy women who are interested in being healthy
- Prenatal and post partum visits
- Many opportunities but 2 very important
  - Avoiding long term low back pain (LBP) and pelvic girdle pain (PGP) associated with pregnancy and delivery
  - Maximizing the function of the pelvic floor muscle (PFM)

How many women have back pain during pregnancy? (Wang 2004)

- 49% to 76% during pregnancy, 1.8 to 3.5 million per year
- 10% to 30% will have decreased function

What conditions predict LBP? (Wang 2004, Wu 2004)

- Previous LBP – non pregnant, pregnant, and menstrual
- Low socioeconomic class
- Weak evidence: second, third, fourth pregnancy, heavy fetus

So what? Implication of LBP and PGP in pregnancy

- 20% have pain so sever they avoid another pregnancy
- 1/3 report sever limitations in activities of daily living
- 3 months postpartum (Figeurs 2004, Schytt 2005)
  - 23 to 57% headaches
  - 30% neck and shoulder pain
  - 28 to 51% LBP
  - 26% leg pain
  - 21% urinary leakage
  - 21% carpal tunnel syndrome
- Continued LBP after delivery (Albert 2001, Larsen 1999, Mogren 2006)
  - 6 months – 30 to 43%
  - 18 months – 37%
  - 2 years - 8.6%
  - 12 years – 86% some amount of LBP after pregnancy

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Types of prenatal and post partum LPB and PGP (Stephenson 2000, Sapsford 1998)

Postural LBP

- Symptoms
  - Ache across the low back
  - Worst with long standing
  - Sway back
- Treatments
  - Pelvic tilt
  - Round back to stretch muscles
  - Heat and massage to low back
  - Strengthen abdominal muscles
  - Pregnancy brace

Sacroiliac pain

- Symptoms
  - Shooting buttock pain, radiating down the leg, sciatica
  - Pain with single leg stand and rolling in bed
- Treatments
  - Avoid uneven postures, miniskirt movements
  - Stretch tight buttock muscles
  - Heat and massage to buttock
  - Sacroiliac belt

Pubic symphysis strain

- Symptoms
  - Pain localized to pubic symphysis
  - Pain with single leg stand, walking, climbing stairs, and rolling in bed
- Treatments
  - Same as Sacroiliac joint pain except heat and massage to inner thigh muscles

Coccyx dysfunction

- Symptoms
  - Pain localized tailbone pain (in the buttock crack)
  - Increased with sitting
- Treatments
  - Avoid slouched sitting
  - Use tailbone cushion
  - Heat and massage to buttock

When to suggest further treatment

- Pain that limits function is never normal
- If the client is unable to care for her child or continue working because of pain

Physical therapy treatment of pregnancy and post partum pain

- Beth Shelly Physical Therapy
- There are many skilled orthopedic PTs in the Quad Cities
- Must have a prescription from a healthcare practitioner
- Covered by most insurances

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Labor position modification for musculoskeletal conditions (Boissennault 2002)

Condition	Positions to avoid	Recommended positions
Disc herniation / bulge	Lumbar flexion (rounded back) • Squatting • Semi-sitting • Litotomy with legs bent to chest	Lumbar extension (arched back) • Semi-reclined with lumbar roll • Side lying • Hands and knees
Spinal stenosis (arthritis) Spondylothiesis (spinal fracture with severely arched back)	Lumbar extension (arched back) • Standing	Lumbar flexion (rounded back) • Squatting • Leaning forward over ball • Side lying (may need to choose non painful side)
Sacroiliac dysfunction	Uneven positions • Walking during the first phase • Semi sitting with legs unsupported or unevenly supported • Side lying • Lying on back	Even, supported positions • Hands and knees • Semi-reclined with legs evenly supported with pillows or persons
Pubic symphysis	Legs widely spread apart or uneven • Squatting • Side lying with legs far apart and uneven • Semi sitting or reclined with legs unevenly supported	Legs closer together and even • Hands and knees • Side lying with legs comfortably apart and even • Semi sitting or reclined with legs supports, even and not too far apart
Tailbone dysfunction	Pressure on tailbone • Semi-sitting • Lithotomy	Any position where the tailbone is free to move • Side lying • Squatting • Hands and knees • Upright kneeling • Standing

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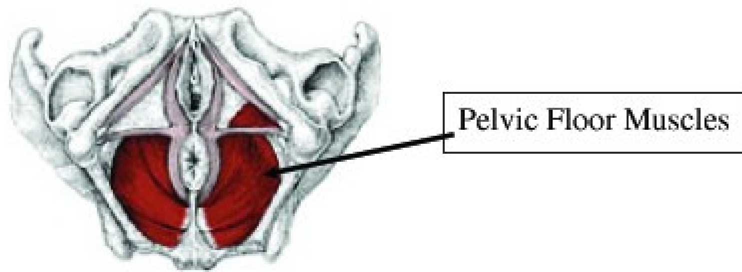
Pelvic floor muscles (PFM) during the childbearing year



- Lack of information – survey of women one day post partum – 46% received no information about Kegels (McLennan 2005)
- One year post partum
  - 23% still leaking urine
  - 6.8% leaking feces
  - 24% having painful intercourse
- 80% of vaginal deliveries show evidence of nerve trauma (Dolan 2003)
- Urinary leakage should be resolved by 3 months post partum (Rogers 2007)
- 15 million Americans

So what?
- Urinary leakage can result in
  - Decreased social activities outside the home or social isolation
  - Change in intimacy
  - Limited work opportunities – unable to get to bathroom, stress
  - Avoidance of exercise or social activities involving exercise activities (dancing and hiking)
  - Knowing were every community bathroom is before you go
- Women with severe urinary incontinence pay $900 annually for incontinence routine care (Subak 2006) similar to osteoporosis, Alzheimer's disease and arthritis (Anger 2006)
- Urinary leakage is one of the leading causes of admission to a NH
- Muscle strength is easier to improve when young

Risk factors for perineal trauma, painful penetration, urinary or fecal incontinence, pelvic organ prolapse
- Vaginal delivery
  - Instrument delivery – forceps
  - Abnormal presentation (breech, occiput posterior, deflexed fetal head – chin not tucked in)
  - Prolonged active second stage – more than 1 to 2 hours pushing
  - Birth weight over 7.7 to 8 pounds
  - 4th degree tear (especially for fecal leakage)
  - Episiotomy
  - Epidural or other regional anesthesia

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- Chronic increased intra abdominal pressure
  - Obesity – BMI over 30
  - Chronic cough, asthma, smoking
  - Repetitive lifting
  - Chronic constipation/straining
  - Exercise routines - high impact exercises

What can be done prenatally?

- Teach proper PFM contraction – see below
  - Women who start exercises started in early pregnancy have a less urinary leakage than those who start them in late pregnancy or post partum
  - PFM exercises during pregnancy decrease urinary leakage after delivery (Hay-Smith 2008)
  - PFM exercises with stability exercises and education decreased LBP, sick time and increased function during and after delivery (Morkved 2007)
- Encourage consistant, proper PFM exercise
  - Only 17% of Norwegian women performed PFM exercises during pregnancy (Bo 2007)
- Avoid increase intra abdominal pressure
- Education about labor and delivery avoidance of modifiable risk factors

What can be done post partum?

- Teach and encourage proper PFM exercises
  - Multiple studies show post partum PFM exercises decrease symptoms and improve function
  - At one year post partum success was related to adherence to exercises not degree of birth trauma (Gordon 1985)
- Restore normal fluid intake and bladder patterns (see below)
- Avoid constipation and other causes of increased intra abdominal pressure
- Suggest further medical treatment if symptoms do not improve

Normal fluid intake and bladder pattern

- Amount of fluid intake:
  - 6 to 8 8 oz glasses/ day.
  - Not more than 70 to 80 oz
  - Type of fluid intake: minimize irritants (caffeine, alcohol, nicotine)
  - Time of fluids: should be evenly spaced throughout the day
- Total number of voids/day: goal is less than 7/ 24 hours
- Number of voids per night: 0 to 1/ night under 65 years old
- Voiding interval: should be 2 to 5 hours between voids, average 3 to 4 hours
- Amount of urine voided each time: 8 to 12 oz/ void
- Bladder dairy can be used to record patterns – available at www.bethshelly.com "for patients" scroll down to see other forms.

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Teaching PFM exercises

- Key words to use – pull up and in, pinch your rectum, hold back gas
- Duration – start with 3 seconds holding, build up to 10 seconds
- Rest – at least as long as you hold – make sure to rest
- Repetitions – start with 5 to 10 and build up to 20 or 30
- Position – start supine, advance to sitting and standing
- Overflow muscles – do not squeeze buttock or legs, do not hold your breath
- Functional PFM contraction – squeeze before sneeze and lift
- Check yourself – place on finger inside the vagina or look at the perineum using a mirror – watch or feel for movement up toward the head

A word about vaginal pain

- There are many reasons for pain in the vagina. – it is never normal
- Women should discuss the symptoms with their health care professional before self treating
- After medical causes for pain have been ruled out – consider scar adhesion and PFM spasm
- Both can be treated with physical therapy – massage, dilators, biofeedback, relaxation

Physical therapy for PFM dysfunction

- This is a very small specialty in PT
- There is a national directory
- Treatment is often covered by health insurance
- Need a medical practitioner prescription
- Usually improves in 2 months with weekly visits
- Includes
  - Individualized PFM exercises
  - Coordination of PFM with other muscles – abdomen and breathing
  - Use of biofeedback to "see" the muscle activity
  - Bladder training
  - Education on fluids, constipation, posture and body mechanics
  - Possibly electrical stimulation, vaginal weights, home trainers

I hope this has been helpful. I am happy to be a resource. Please feel free to email or call.

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