

2017

# PERSONAL TRAINERS

## CONFERENCE

OCTOBER 27 - 29 | ANAHEIM, CA



# POWER YOUR POTENTIAL



# Conflict of Interest Statement

- **I have no actual or potential conflict of interest in relation to this presentation.**



# A Performance-Based Approach to Pre- and Post-Natal Training

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# What *exactly* are women training for?

## 3 different goals

1. Pregnancy
2. Childbirth
3. Postpartum

But training for them *simultaneously*

# Agenda

Introduce a performance-based approach to training pregnant and post-natal clients

- Physiological demands of pregnancy, labor, motherhood
- Essential programming variables
- Programming strategies for each trimester





# Physiological Demands of Pregnancy

Weight Gain

Biomechanical changes

Strength : Weight ratio

# Weight Gain

## Average weight gain: 25-35lbs

- Ramps up in 2<sup>nd</sup> and 3<sup>rd</sup>\* trimesters
- Women need an extra 300 cal/day

Smaller women pre-pregnancy can gain more  
≤ 40lbs

Larger women (overweight/obese) should gain less  
~15-20lbs



# Biomechanical Changes

- Shift of COG up and forward (baby & breast weight)
  - Anti-flexion
- Anterior pelvic tilt (~5°), lumbar extension
  - Anti-extension
- Pelvis widens (ligamentous laxity)
  - Increased hip abductor demand on single leg
- Uterus pushes:
  - Up into ribs
  - Down onto pelvic floor
  - Out onto abdominal wall

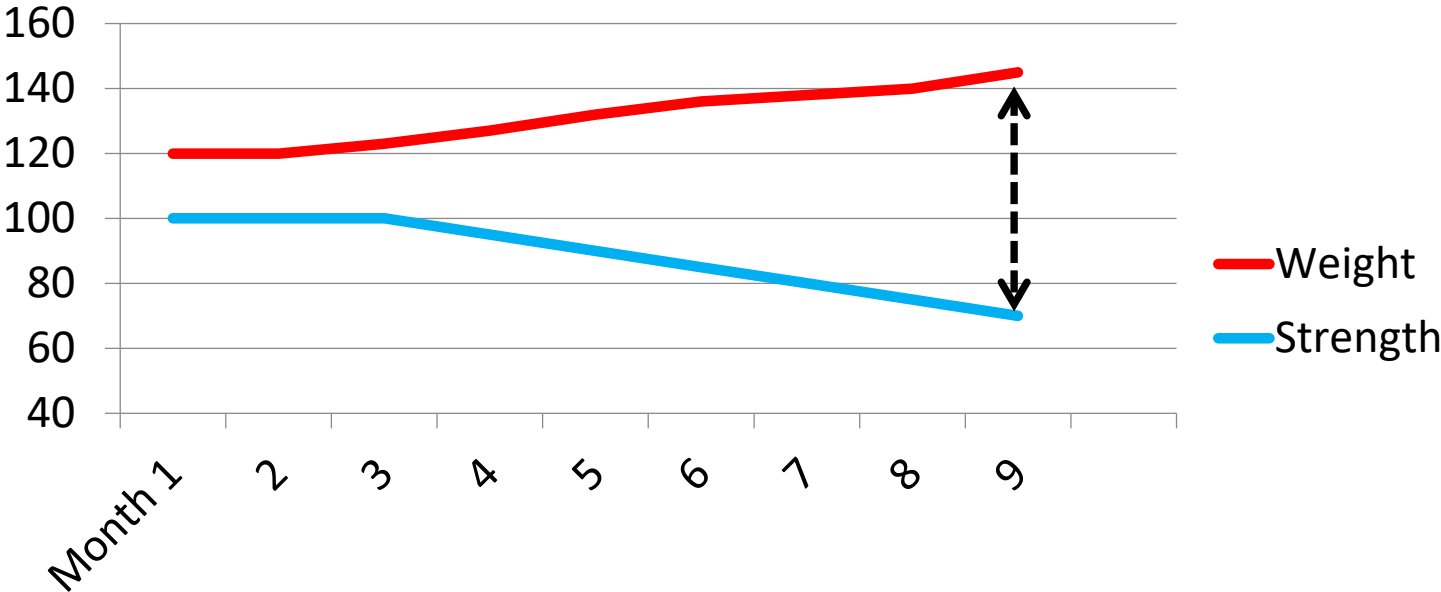






# Strength : Weight Ratio

**Staying strong is imperative**  
“Pregnancy lite” isn’t enough





# Game Day

Common Birthing Positions

Work : Rest Ratio of Contractions

# Common Birthing Positions

Rocking, shifting, pelvic tilts, breathing, moving helps “ease” pain





# Work : Rest Ratio of Contractions

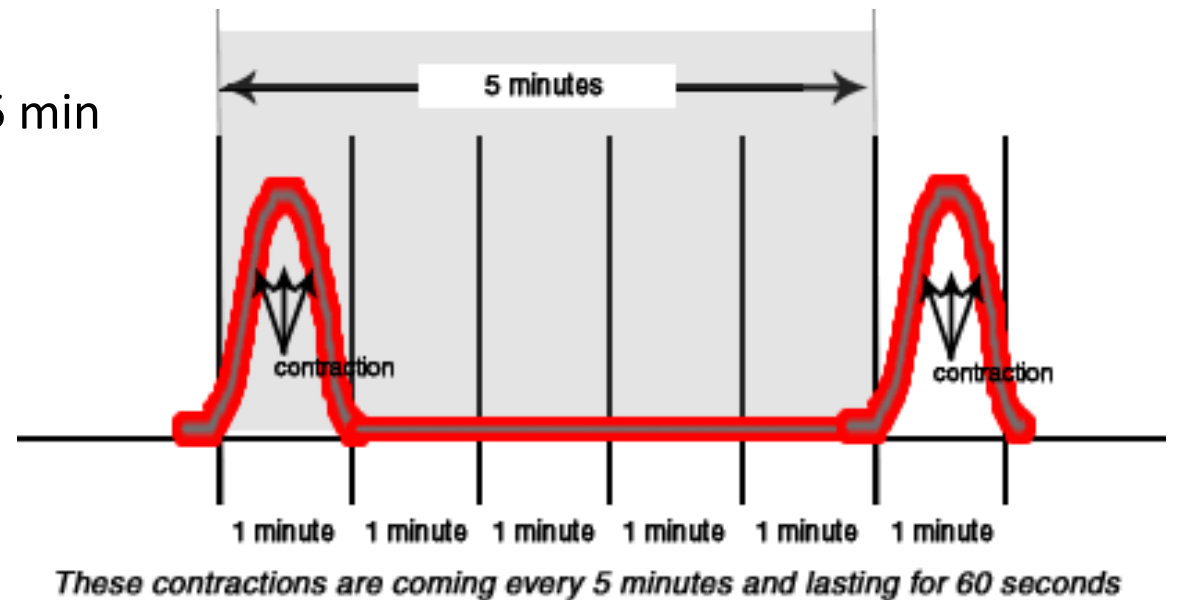
Labor is nature's interval training

## Early labor

- 30s-60s every 12-15 min
- 1:15-30

## Active labor

- 60-90s every 2 min
- 1:2\*



Credit: [www.babies.sutterhealth.org](http://www.babies.sutterhealth.org)



# Postpartum Mom

Physical Changes

Activities of Daily Living (ADLs)



# Physical Changes

The physical trauma of pregnancy and delivery often results in the following:

- **Diastasis Recti**
  - An increased inter-recti distance
  - Reduced connective tissue strength, tone
- **Pelvic Floor weakness**
  - Reduced strength, increased length
  - Incontinence, prolapse
  - Tearing (stitches)

# Activities of Daily Living

- Nursing
- Carrying baby (1 & 2 arms)
- Crib reach
- Baby pick up from ground
- Getup from ground (with baby)
  - From supine, side lying, seated
- Strollering
  - Up & down stairs, opening doors

} Triple flexion:  
Shoulders, elbows, wrists





# Essential Programming Variables

## Setup

Neutral Alignment, Core & Pelvic Floor Control

## Strength

Arc of Intensity, Perceived Exertion,  
Intra-Abdominal Pressure Management

## Specificity

Labor & Birthing Positions, Rest Intervals,  
New Mom ADLs, Stage of Pregnancy



# Setup

## Neutral Alignment

- Maintains balance between anterior/posterior/lateral tissues
- Makes breathing easier
- Reduces pain/stiffness from lordosis, forward pelvis

### 1. Vertical Stacking

- Ear-Shoulder-Hip-Knee-Ankle

### 2. Lumbo-pelvic neutral

- “Flashlights” forward
- Vertically align ASIS and pubic symphysis



# Setup

## Core & Pelvic Floor Control

Engaging the deep core (TVA/multifidus, obliques) and pelvic floor muscles will help:

- Resist getting pulled out of neutral alignment
- Reduce potential for developing pain (hip, back, SI, pubic symphysis)
- Transfer forces across body more effectively (minimize energy leaks)
- Make pushing more effective/productive
- Reduce chances of getting DR and PF disorder



# Setup

## Core & Pelvic Floor Control

1. Thoracic Breathing

360° thoracic expansion (instead of belly breathing)

2. PF Control

Contract, *fully* relax PF

3. C&PF Coordination

Inhale with relaxed PF, exhale with contracted PF

4. C&PF Integration

Inhale on eccentric, exhale on concentric

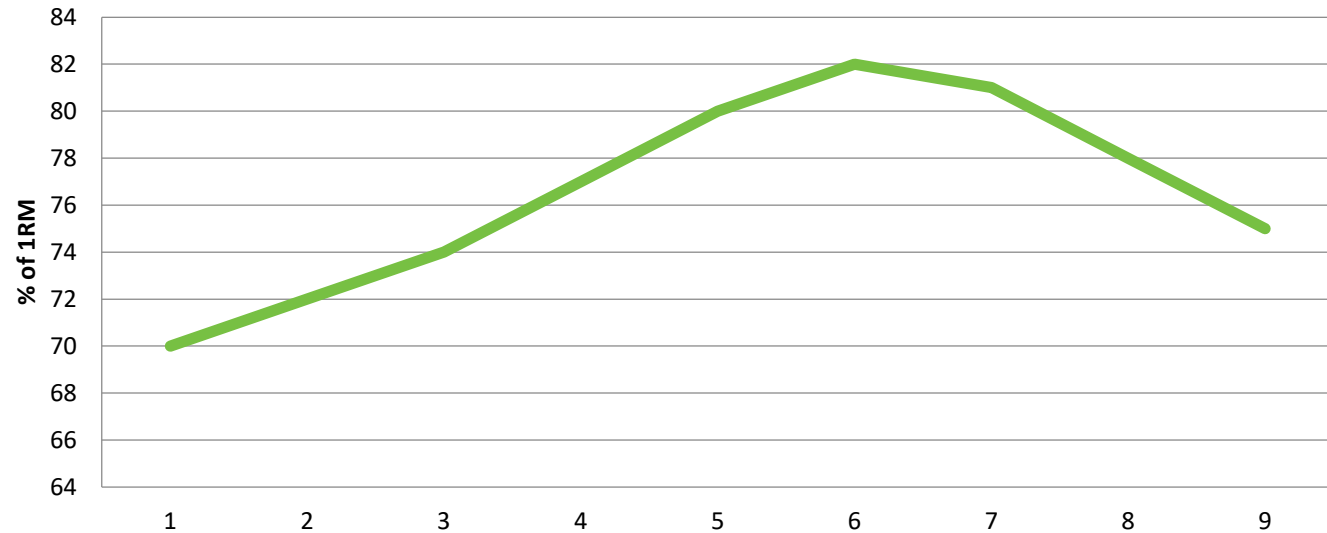


# Strength

## Arc of Intensity

A map of your client's intensity over 9 months

Arc of Intensity



# Strength

## Arc of Intensity

- Start moderate (~70%)  
Depends on prior training experience and first trimester fatigue
- Peak in late second trimester (~80%)
- Reduce in third trimester (~75%)  
She may finish higher than when she started

50-75%

60-85%

65-80%

# Strength

## Perceived Exertion (PE)

- Scale from 1-10 representing level of perceived difficulty  
1=extremely easy, 10=extremely difficult
- Roughly corresponds to intensities
- More reliable than heart rate
  - During pregnancy, HR can increase  $\leq 20$  BPM
- Client's perception can be changed based on:
  - Time of day
  - Any given day
  - Stage of pregnancy



# Strength

## Intra-abdominal pressure (IAP) management

- IAP contributes to Diastasis Recti & PF weakness
- Higher intensities = Higher IAP
- Manage throughout pregnancy (esp. later stages)
  - No breath-holding (Valsalva)
  - Second trimester*: switch to mostly single-leg movements
  - Third trimester*: reduce peak intensity to 75% (10 reps)



# Specificity

## Labor & Birthing Positions

Most positions involve:

- Deep squats
- Hip hinges
- Pelvic tilts

Implementation:

- Work on pre-requisite mobility during warm-up
- Add them to rest intervals
- Incorporate into supersets





# Specificity

## Rest Intervals

Adjust based on your client's conditioning, energy

### First trimester

Intensities are more moderate

1:2 work : rest ratio

### Second trimester

Pushing the intensity

1:3 ratio will allow moms recovery from heavier loads

### Third trimester

Reducing loads to offset weight gain

1:1 ratio to mimic late-stage contractions



# Specificity

## New Mom ADLs

Mom's postpartum body will be dramatically different, along with the ways in which she uses it

- Bed Roll
- Crib Reach
- Bath Time Kneel
- Baby Pickup
- Playtime Getup
- Carry



# Specificity

## Stage of Pregnancy: First Trimester

Fatigue and nausea quite common

### Objectives:

- Get her moving, however little energy she can muster
- Neutral alignment
- C&F control and integration
- Teach fundamental patterns (squat, row, press, DL)
- Establish cardio base  $\leq 80\%$  for 20-30 min

*Note: Fetus sensitive to hyperthermia first month - **don't overheat client***



# Specificity

## Stage of Pregnancy: Second Trimester

Feeling good!

### Objectives:

- Increase loads  $\leq 80\%$  (85% for experienced lifters)
- Switch to mostly single-leg movements to reduce IAP
- “Anti” exercises for core
- Hip mobility
- Ground-to-standing variations (level changes)

*Note: Avoid lying flat on back if mom is uncomfortable*



# Specificity

## Stage of Pregnancy: Third Trimester

Weight gain can make breathing & moving more challenging

### Objectives:

- Reduce intensities  $\leq 75\%$
- Avoid isometrics and most front-loaded exercises
- Practice labor and birthing positions
- Taper intensity last couple of weeks before due date

*Note:* Large fluctuation in how women feel so go at her pace



# Sample Pre-Natal Program

## Moderate

Designed for a moderately-fit client who did cardio and light lifting prior to pregnancy

### First Trimester

- 65-75% = 10-15 reps
- 1:2 Rest Interval
- Neutral alignment
- C&F procedure
- Master basic lifts

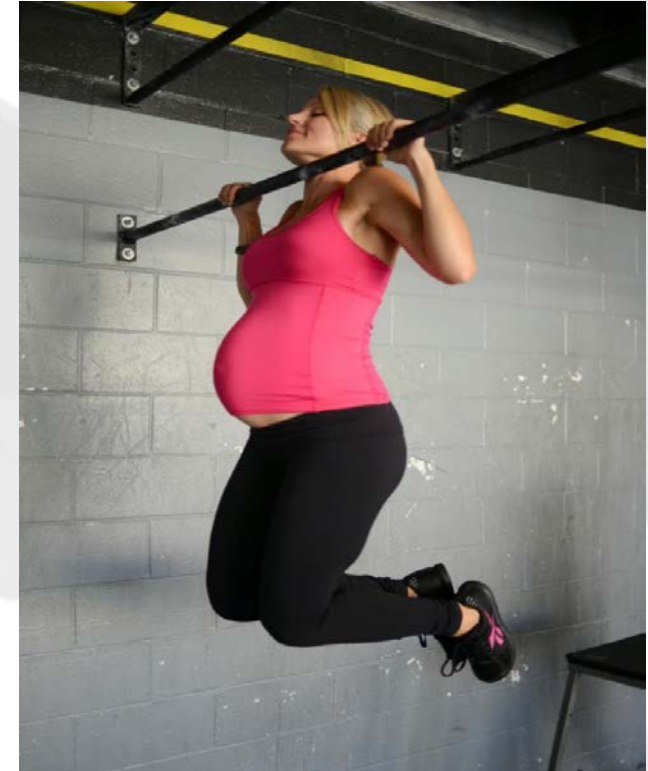
### Second Trimester

- 75-80% = 8-10 reps
- 1:3 Rest Interval
- Single-leg focus
- "Anti" exercises
- New mom ADLs

### Third Trimester

- 70-75% = 10-12 reps
- 1:1 Rest Interval
- Labor position prep
- Pulling/Carrying
- Tapering

# Strong Mamas





# Thank You NSCA!

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> Playlist > Pre- and Post-Natal