TRAINING EVE

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Training the typically Healthy Woman
- Typically 40+ years old

The Big Problem:
A LOSS IN MUSCLE TISSUE

- 3kg (7 pounds) muscle loss/decade and accelerates after age 45
- Starting around the age of 40, most women lose 1/2-1/3lb. muscle each year and gain at least that much in body fat. A sedentary woman can expect by the age of 80 to have only about 1/3 of the muscle she had at the age of 40.
- This negatively affects strength, endurance, metabolic rate, bone density, body composition, functional abilities and posture
- This loss is dominated by a loss in the number and size of FT muscle fibers
- This results in a reduction in power, reaction time and speed of movement

LOSSE OF STRENGTH

- Parallels the loss of muscle mass
- 50% of the strength of young women

A DROP IN METABOLIC RATE

- Resting metabolic rate drops approximately 2% per decade
- Reduction in RMR parallels the loss of muscle mass
- Results in reduced caloric requirements (100+ calories less per day) and can lead to creeping obesity

AN INCREASE IN BODY FAT

- Experience an average weight gain of 10 pounds per decade (women increase from 25% to 43% body fat)
- Body fat distribution changes such that more internal fat is deposited
- As women’s estrogen levels drop, they typically start to store fat more like a man
- Menopause is one period during a woman's life that fat cell number can be increased!
- 52% of women in their 50’s are overweight. And more than a 1/2 of women age 30-49 also weigh too much
- Increases risk for obesity related disorders such as coronary artery disease, hypertension, diabetes and osteoarthritis
DECREASE IN BONE DENSITY
• Bone density decreases at a rate of 1% per year after the age of 35.
• Bone loss in women is especially rapid during the first 5 years after menopause and can cause a 3-5% bone loss per year during this period.
• Increased risk for fractures (forearm, lumbar, wrist, vertebrae, hip).
• Risk factors:
  – Age.
  – Gender - Women tend to have less bone density than men. Women also tend to lose bone density earlier, which puts them at a higher risk for osteoporosis. More than half of all women over the age of 50 will suffer an osteoporotic fracture.
  – Family History.
  – Race.
  – Bone structure and Body weight.
  – Menopause/ Menstrual History.
  – Lifestyle.
  – Medications/Chronic Disease.
• 25% of post-menopausal women have enough bone loss to be diagnosed as Osteoporotic.

OSTEOPOROSIS
• A disease in which bones become fragile and more likely to break.
• Characterized by low bone mass and structural deterioration of bone tissue.

CHANGES IN POSTURE
• Lose height (average 10-15cm); 1 vertebral fracture results in approximately 1cm loss in height.
• 1000’s of women with compression and wedge fractures of spine aren’t aware of it.
• Kyphosis/Rounded Shoulders/Head Forward posture (tight internal rotators, weak scapular retractors and depressors, weak neck retractors).
• Gait becomes slower, shortened stride length and widened stride width.

A REDUCTION IN CARDIOVASCULAR FITNESS
• Aerobic capacity decreases 10% each decade.
• Activities of daily living start to become more challenging.
• Movement starts to be avoided to reduce fatigue and it’s a vicious downward cycle affecting quality of life and functional abilities.

MENOPAUSE
• Menopause is different for each woman. Although the average age of natural menopause is 52, some women start the transition as soon as their early 40s.
• The term menopause is often used to describe three distinct stages in a woman’s life:
  – Premenopause is the time when menstruation is normal.
  – Perimenopause or menopause is when menstruation becomes more infrequent, a stage that includes the year following the final period.
  – Postmenopause is the time when ovaries have stopped functioning and menstruation has ceased for at least 12 months (SWAN 2003).
• Symptoms of menopause are marked by a complex hormonal instability:
  – a 40-60% drop in estrogen levels.
  – drop in progesterone (to as low as zero).
  – drop in testosterone in her 40s to half of levels when she was 20.

Menopause Symptoms
• Menopause symptoms include weight gain, cravings, night sweats, fatigue, hot flashes, insomnia, migraines, mood swings, depression, reduced memory and cognitive function, vaginal & reproductive changes, decreased libido, and thinning of bones. (Pachman, Jones & Loprinzi 2010; Kronenberg 2010; Jacobs & D’Esposito 2011).
• 60% experience mild symptoms, 20% experience severe symptoms, 20% experience no symptoms.
• Menopausal symptoms can have a significant negative impact on QOL by creating a domino effect. Excessive sweating may affect sleep, self esteem, mood, anxiety levels, mental abilities...
• May affect ability or desire to exercise, eat well causing weight gain...
OTHER CHANGES

• Degenerative changes to all tissues affecting Connective tissue, joint cartilage, GI tract, organs, vision, hearing, taste, hair, teeth and skin

THE TOP EXERCISE STRATEGIES FOR WOMEN

#1: STRENGTH TRAINING

• Increased strength 7.5-226.7%
• Increased muscle (3-4 pounds in 8-12 weeks)
• Increases bone density (can be back to normal)
• Maintains a higher metabolic rate (1 pound of muscle = 30-40 cal/day)
• Improves posture
• Decreased joint pain by 59%
• Helps to manage menopausal symptoms

#1: STRENGTH TRAINING PRESCRIPTION

• 1 set of 8-12 reps for all large muscle groups 2x/week (>50 years = 10-15 reps)
• Momentary muscle fatigue
• Slow and controlled (4-6 second reps)
• Perfect execution
• Apply progressive overload
  – Weighted Vests (approx. 10% of body weight)
• Functional exercises (compound/integrated exercise, balance training)
• It’s not about gaining muscle or getting bulky, it’s about keeping what we’ve got!

Strengthen as a Minimum

• Middle and lower trapezius
• External rotators
• Posterior deltoids
• Abdominal stabilization
• Vastus medialis
• Hamstrings
• Gluteals in end ROM
• Abductors and adductors as stabilizers / repositioners
• Tibialis anterior / peroneals

Stretch as a minimum

• Internal rotators of the shoulder (pec major, minor)
• Scapular elevators (upper traps, levator scapula)
• Lats
• Hip flexors
• Hamstrings
• Calves
• Into Back extension (thoracic region)
# Exercise Staples

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunges</td>
<td>Be sure to offer less loaded options for step-ups, lunges and squats for women.</td>
</tr>
<tr>
<td>Squats</td>
<td>Be cautious of too many chest flies, overhead shoulder presses, front and lateral raises, and upright rows. These add to the risk of Shoulder Impingement Syndrome -- a significant concern for women.</td>
</tr>
<tr>
<td>Step Ups</td>
<td>Women who suffer from or show signs of Osteoporosis should not be performing any spinal flexion (crunches / situps) or heavily loaded spinal compression. Therefore, favor stabilization training vs. flexion training. Avoid jarring or high-load exercises in women with advanced or show signs of osteoporosis.</td>
</tr>
<tr>
<td>Deadlifts</td>
<td>Be sure to offer less loaded options for step-ups, lunges and squats for women.</td>
</tr>
<tr>
<td>Assisted Pull-ups</td>
<td>Be cautious of too many chest flies, overhead shoulder presses, front and lateral raises, and upright rows. These add to the risk of Shoulder Impingement Syndrome -- a significant concern for women.</td>
</tr>
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<td>Presses</td>
<td>Be cautious of too many chest flies, overhead shoulder presses, front and lateral raises, and upright rows. These add to the risk of Shoulder Impingement Syndrome -- a significant concern for women.</td>
</tr>
<tr>
<td>Bridging</td>
<td>Be cautious of too many chest flies, overhead shoulder presses, front and lateral raises, and upright rows. These add to the risk of Shoulder Impingement Syndrome -- a significant concern for women.</td>
</tr>
<tr>
<td>Torso Stabilization (Planks, V-sit variations), Rotation &amp; Extensions</td>
<td>Be cautious of too many chest flies, overhead shoulder presses, front and lateral raises, and upright rows. These add to the risk of Shoulder Impingement Syndrome -- a significant concern for women.</td>
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# Sample 60 min Training Session

- Client arrives early to complete general system warm up (min 15 minutes)
- First 5 minutes -- general ROM warm-up and physical prep for session (evaluate today’s body)
- 3-6 Full Body Integrated Movements
- 1-4 Compound Lower Body Movements (squats, lunges, step ups, deadlifts, 1 leg dips)
- 2-4 Compound / Isolated Pulling Movements (chin-ups, rows, pulldowns, reverse flies)
- 1-3 Compound Pressing Movements (pushups, chest press, overhead shoulder presses, tricep presses)
- 1-2 Bridging Exercises
- 1-2 Hip Stabilizer Exercises (resisted side steps, adduction, side lying exercises)
- 1-2 Middle / Lower trapzius / External rotator exercises
- 2-3 Spinal Stabilization Exercises
- 1-2 Spinal Extension Exercises
- 1 Spinal Flexion Exercise
- 1 Lateral Flexion Exercise
- 1 Spinal Rotation Exercise
- Last 5-10 minutes of session spent cooling down/ stretching/ muscle release/ lifestyle coaching/ actions steps

# Jumping promotes bone growth and is recommended in pre-menopausal women

- Running, hopping, skipping and jumping
- Squat jumps, Stride jumps, Bounding, Double leg kick butts, Cone/Hurdle hops, Box jumps...
- 50 daily jumps (two footed, using arms for propulsion, bare-feet, bent knee landing) show positive gains in bone mass at the hip for pre-menopausal women

# #2: AEROBIC/ANAEROBIC CARDIOVASCULAR EXERCISE WITH VARIABLE IMPACT

- Increased aerobic capacity by 30%
- Helps to decrease risk for all obesity/overweight health issues including heart disease, diabetes, cancer etc.
- Helps to manage all menopausal symptoms
- Increases bone density
- Improves body composition
  - There appears to be a link between breast cancer protection and healthy lifestyle habits such as proper diet and exercise. Key et al. (2004) found that overweight and obesity are very related to breast cancer (and other cancers) and suggested patients should strive to attain a healthy BMI (<25 kg/m2).
- Provides a natural high and improves energy
- Helps to manage hot flashes and enhances sleep quality
- Improves posture
- Improves functional ability

# #2: CARDIOVASCULAR EXERCISE PRESCRIPTION

- Surgeon General’s Report: 30 minutes of light activity every day (equivalent to household chores, walking, gardening, cycling)
- 20-60 minutes, 3-5x/week of activities like walking, stairclimbing, or fitness classes
- Include interval and agility training
  - Get fit - become a fat-burning machine
  - Include E/M/H workouts
  - Some research has suggested that some menopausal women may respond better to moderate vs high intensity exercise to control the vasomotor symptoms
- Enroll in a dance or choreographed workout class

# #3: POSTURAL TRAINING

- Abdominal contractions, scapular retraction/depressions, chin tucks, back extensions, low/mid trap exercises
- Be aware of posture at all times
- Avoid sitting in one position for extended periods of time
Daily Abdominal Contractions

- Submaximal deep contraction
- Start with 30 seconds and progress
- Use triggers

#4: BALANCE TRAINING

- Program a progressive use of balance exercises (exercise balls, BOSU Trainers, wobble boards, profitter, 2x4 training, 1 leg upper body training)

#5: FLEXIBILITY TRAINING

- Improves posture and functional ability
- Promotes the development of muscles that are both strong and pliable compared to strong and tight
- May reduce risks of injuries and DOMS

Prescription
- Use a variety of techniques
- Every day, 30 seconds or 15 seconds x 4 minimum
- Deep stretching must follow a 6-12 minute warm-up
- Wall stretching
- Foam rolling / MELT

#6: MIND-BODY RELAXATION TRAINING & STRESS MANAGEMENT TECHNIQUES

- Yoga, Tai Chi, Pilates, Meditation
- Breathing
- Prayer
- Laughter
- Whatever reduces your stress, do it! (baths, massage, nap, reading...)

#7: PELVIC FLOOR EXERCISES

- Kegel exercises - helps stress incontinence
- Benefits: strengthens pelvic floor muscles, gives blood supply to vaginal vault, and provides good pelvic floor support to all organs
- Sensation: Imagine contracting the muscles that stop the flow of urine while going to the bathroom
- 10 reps of “quick flicks” 3x/week – increase to 3 sets
- 10 sets of 10 seconds contract / 20 seconds relax 4x/weeks – increase to 20 seconds/40 seconds
- Kegel during strength exercises

Hormonal Influences on Women

- Estrogen helps regulate the menstrual cycle and prepare the uterus for pregnancy. Mid cycle estrogen levels spike and an egg is released (ovulation).
- Progesterone’s role is to change the character of the uterine lining to prepare for pregnancy. Additionally protects a woman’s body from many types of cancers, normalizing blood sugar levels, helping metabolize body fat, relieving anxiety and acting as a natural anti-depressant
- Testosterone helps build muscle and bone and affects a woman’s libido, mood and energy
The Mystery of Estrogen

- Estrogen is closely linked with women’s emotional well-being and mood regulation. Exactly how estrogen affects emotion is much less straightforward. Is it too much estrogen? Not enough? It turns out estrogen’s emotional effects are nearly as mysterious as moods themselves.
- Normal estrogen levels vary widely. Large differences are typical in a woman on different days, or between two women on the same day of their cycles. The actual measured level of estrogen doesn’t predict emotional disturbances.
- Estrogen’s Role:
  - Increasing serotonin, and the number of serotonin receptors in the brain
  - Modifying the production and the effects of endorphins, the “feel-good” chemicals in the brain
  - Protecting nerves from damage, and possibly stimulating nerve growth
- What these effects mean in an individual woman is impossible to predict. As an example, despite estrogen’s apparently positive effects on the brain, many women’s moods improve after menopause, when estrogen levels are very low.
- Depression and anxiety affect women in their estrogen-producing years more often than men or postmenopausal women. Estrogen is also linked to mood disruptions that occur only in women – premenstrual syndrome and postpartum depression.

How hormones affect women at different stages of life

- Some experts believe that some women are more vulnerable to the menstrual cycle’s normal changes in estrogen. They suggest it’s the roller coaster of hormones during the reproductive years that create mood disturbances.
- As many as 90% of women experience unpleasant symptoms before their periods. If symptoms are relatively severe enough to interfere with quality of life, it’s defined as premenstrual syndrome (PMS).
  - Symptoms include bloating, swelling of arms or legs, and breast tenderness. Feeling overly emotional, premenstrual depression, anger and irritability, or having anxiety and social withdrawal. As many as 30% of women may have negative symptoms over their lifetime.
- 10% to 25% of women experience a major depression within the first six months after childbirth. The abrupt drop in estrogen after delivery seems like the obvious culprit – but the link has never been proved. Postpartum depression is treated like any other depression, with antidepressants, therapy, or both. Some preparations of estrogen do show promise as a potential add-on to these established treatments.
- At menopause, estrogen levels fall to very low levels. Interestingly, taking oral estrogen does not improve depression in women after menopause. In large trials evaluating hormone replacement therapy, women taking estrogen reported the same mental health as women taking placebo. After menopause, women’s rates of depression fall, becoming similar to men of the same age.

Research indicates that women have a significantly higher likelihood of ACL injuries in the pre-ovulatory stage of menstruation, than post-ovulatory stage.

Exercise programs will need to be modified during hormonally influenced stages of a woman’s life and will be completely client-dependant

- Puberty
- Menstruation cycle
- Pregnancy
- Post-partum
- Perimenopause

Average weight gain of 25-35 pounds

- Maternal stores of fat, protein, other nutrients: 7 pounds
- Increased body fluid: 4 pounds
- Increased blood: 3-4 lbs.
- Breast growth: 1-2 lbs.
- Enlarged uterus: 2 pounds
- Amniotic fluid: 2 pounds
- Placenta: 1 pound
- Baby: 6-8 lbs.

Cardiovascular changes

- 50% increase in total blood volume
- Increase in SV, which increases cardiac output to 40% above normal
- Increase in RHR of 10-15 bpm
- Heart working much harder
- Reduces a woman’s ability to exercise at the same intensity as she did prior to becoming pregnant
Respiratory changes

- Oxygen not as readily available for aerobic exercise – common complaint of shortness of breath
- Maternal breathing becomes more difficult as the uterus enlarges
- Breathing rate increases

Musculoskeletal Changes

- Shifting center of gravity
- Lordosis and rounded shoulders
- Secretion of the hormone relaxin increases joint laxity, making a woman more susceptible to joint injuries and lengthening and widening of the feet
- Diastasis – separation of the rectus abdominis muscle – (can take years to repair if torn); Have client lie supine. Place 2 of your fingers horizontally on her umbilicus. Have her perform a curl-up with her hands behind her head and her knees bent. Palpate from above and below the umbilicus. A 2cm. separation above or a 1 cm separation below the umbilicus is considered a diastasis
- Sciatic nerve pain as the uterus presses on the sciatic nerve – condition aggravated when a woman is lying down or sitting for long periods
- Carpel Tunnel Syndrome

What happens to a pregnant woman’s body during exercise?

- Heart rates of both mother and fetus increase (5-15bpm increase in fetal heart rate)
- Working muscles compete with fetus for blood flow– (25% decrease in UPBF); don’t worry there is more than enough blood for both parties and there appears to be improved oxygen extraction
- Hyperventilation
- Maternal core and fetus temperature increases

Emotional Changes

- Food cravings
- Anxiety
- Insomnia
- Nightmares
- Low blood sugar
- Mood changes
- Fatigue
- Nausea

Exercise Benefits During Pregnancy

- Decreases the risk of excessive weight gain and improves circulation, which can reduce the occurrence of hemmoroids, constipation and varicose veins, often associated with pregnancy.
- May help relieve other common problems such as leg cramps, insomnia, fatigue, and swelling of hands and feet.
- Prepares the body for the tremendous stresses of labor and delivery and increases energy, self-confidence and self-esteem. Some studies have shown that the length of labor (contractions) is 30% shorter in women who continue to exercise throughout their pregnancy while other studies have shown up to a 18% reduction in the need for forceps and cesarean sections, episiotomies and epidurals in exercising pregnant women.
- Helps to improve posture, which in turn will help alleviate some of the pains associated with an enlarging abdomen and the associated curve in the lower back, as well as the enlarging breasts and the associated rounding of the shoulders and upper back.

- Many studies have shown that exercise has profound benefits for the mother and the fetus (Doran & Davis 2011). It is highly recommended that women get 30 minutes of moderate-intensity exercise on most, if not all, days before, during and after pregnancy (Doran & Davis). Benefits include weight management, prevention of gestational diabetes mellitus (and thus type 2 diabetes), better physiological readiness for the demands of childbirth, and the energy and ability to properly care for a newborn baby. Unfortunately, most women do not get the recommended amount of exercise.
**2011 ACOG Guidelines**

- After the first trimester of pregnancy, avoid doing any exercises on your back.
- If it has been some time since you have exercised, start slowly. Begin with as little as 5 minutes of exercise a day and add 5 minutes each week until you can stay active for 30 minutes a day.
- Avoid brisk exercise in hot, humid weather or when you have a fever.
- Wear comfortable clothing that will help you to remain cool.
- Wear a bra that fits well and gives lots of support to help protect your breasts.
- Drink plenty of water to help keep you from overheating and dehydrating.
- Make sure you consume the daily extra calories you need during pregnancy.

**High Risk Exercises**

- In general, activities in which there is a high risk of falling, such as gymnastics, water skiing, rock climbing, ice skating and horseriding, should be avoided.
- Some racquet sports also increase the risk of falling because of your changing balance.
- Downhill snow skiing or boarding — Your change in balance may put you at greater risk of injuries and falls. Also, you may be at risk of altitude sickness, an illness caused by breathing air that contains less oxygen.
- Contact sports, such as hockey, basketball, and soccer — These sports can result in harm to you and your baby.
- Scuba diving — Scuba diving can put your baby at risk of decompression sickness, a serious illness that results from changes in the pressure surrounding the body.
- The changes in your body can make certain positions and activities risky for you and your baby. While exercising, try to avoid activities that call for jumping, jarring motions, or quick changes in direction that may strain your joints and cause injury.
- There are some risks from becoming overheated during pregnancy. This may cause loss of fluids and lead to dehydration and problems during pregnancy.

**Reasons to Discontinue Exercise and Seek Medical Advice**

- Vaginal bleeding
- Dizziness or feeling faint
- Increased shortness of breath
- Chest pain
- Headache
- Muscle weakness
- Calf pain or swelling
- Uterine contractions
- Decreased fetal movement
- Fluid leaking from the vagina

**Physiological reasons for guidelines**

1. Neural Tube defects – Excessive heat buildup, especially during the 1st Trimester, could impede the fetus’s neural tube development. These conservative guidelines insure a maternal core temperature (rectal) that doesn’t exceed 101 degrees F. (38 degrees Celsius). Same reason for avoiding hot tub use.
2. Fetal growth retardation – Decreased uterine blood flow and consequently decreased blood and oxygen (hypoxia) to the fetus may cause harm.
3. Dehydration can cause premature labor, places stress on the kidneys and can hinder perspiration.
4. Lack of research studying high intensity exercise.
5. Subtle, long-term effects to the fetus are difficult to measure.

**Cardio Guidelines**

- **Duration**
  - 20-30 minutes
  - Up to 45 minutes for the advanced exerciser
- **Frequency**
  - 3x/week
  - Up to 5x/week for the advanced exerciser
- **Intensity**
  - Talk test
- **Type**
  - Familiar
  - Not too skill dependent — avoid a lot of choreography and fast music
  - Graduate to low-impact or non-weight bearing activities
  - Natural choices are indoor cycling, walking, swimming, water jogging, and prenatal fitness classes
  - Require longer warm-up (10-15 minutes) and cardio cool down

**Muscle Conditioning General Guidelines**

- 20-30 minutes of strength training for the entire body
  - Important because upper-body and abdominal exercises help release tension and enhance good posture.
  - Car seats, diaper bags and a big, bouncing baby.
- **Technique**
- **Speed**
- **Breathing**
- **Posture**
- **Kegels**
- Avoiding extended supine positions post-1st trimester – use standing (not extended), seated or reclined positions
- Avoid heavy resistance training because of joint instability and the likelihood of performing a Valsalva maneuver (momentary or sustained breath holding – which could divert blood from the womb to the working muscles, potentially compromising the fetus)
Torso Modifications
- Pelvic tilts
- Curl Backs
- Side crunches
- Baby Hugs
- Alternate Arm + Leg Lift
- Sidelying C-curves
- Reclined Leg Lifts
- Releasing Lower Back
- Gentle Thoracic extension

POST-PARTUM
You just gave birth to the most beautiful baby in the world! This is the happiest time in your life! – Right?!

Postpartum Emotional Changes
- Elated, joyful, excited
- Exhaustion / Insomnia
- In Pain
- Scared / Feeling Incompetent
- Irritable / Angry
- Stressed from numerous responsibilities
- Depression / Crying – Severe Postpartum Depression – more severe symptoms, obsessive/compulsive behaviors, violent thoughts
- Starved for adult interaction

Risk factors for PPD
- History of depression, anxiety, panic, obsessive thoughts or behavior, mania
- Family history
- Marital conflict
- Prior episode
- Low confidence as a parent
- Baby’s personality, health or disability
- Single parent
- Super woman syndrome
- Hormonal risks (thyroid imbalance, PMS, infertility, etc.)

Postpartum Physiological Changes
- Tearing of pelvic floor tissues / stitches
- Separation of the pubis symphysis
- Bleeding
- Change of Center of Gravity
- Incontinence

‘9 months on – 9 months off’ Rule
- A goal of ½ to 1 pound weight loss per week is a healthy approach
- Faster weight loss – may experience difficulties with breastfeeding and start losing muscle, plus recent studies have suggested fast weight loss may increase the chances of developing postpartum depression
**Easing Back into Exercise**

- Doctors usually recommend waiting for six weeks before easing into a Postpartum exercise program.
- A woman who has exercised throughout pregnancy and has had an uncomplicated delivery could be ready to begin in 2 to 3 weeks.
- After a Caesarean delivery, most women will not feel comfortable starting a fitness program until about 10 weeks postpartum.

**ACOG Postpartum Exercise Guidelines**

- Talk to your doctor - he or she may suggest a plan.
- Begin slow and remember to W/U & C/D for 5-10 minutes before/after each workout.
- Be sure to start with low impact activities and avoid any sports or activities that are extremely competitive, vigorous, could cause a fall, or put the joints in an extreme position.
- Wear an athletic bra for added support and try to schedule exercise sessions immediately after breast-feeding when the breasts are not as large. It’s also probably a good time to mention that in no way does exercise negatively affect your breast milk. If for some reason your infant struggles with breastfeeding after you workout, try washing your breasts well or try feeding your baby immediately before you workout.
- Include strengthening exercises for the abdomen, back and legs.
- Kegels and Pelvic Tilts.
- Regular consistent exercise a minimum of 3x/week is always better.
- Avoid vigorous exercise in hot, humid weather and drink plenty of water before and after exercise to avoid dehydration.
- And last if you experience any of the following symptoms, you should stop exercising and contact your doctor immediately: pain, increased bleeding, dizziness, shortness of breath, heart palpitations, faintness, or difficulty walking.

**Planning**

- Front Baby Carriers:
- Baby Jogger:
- Back Pack:
- Bike Trailer:
- Exercise Tubes:
- Stability Ball:
- Exercise Videos:
- Music:
- Fitness Facility:
- Caregiver:

Be sure to avoid exercising in the hotter times of the day, cover baby's skin, use a shade for jogger and talk to pediatrician about sunscreen. In the colder months, remember to bundle baby well.

**Immediately Post-birth:**

**Kegels & Abdominal Contractions**

- It's not a maximal contraction – only contract about 25% of your maximum capacity – you still should be able to breathe comfortably.

**Immediately Post-birth:**

- **Pelvic Tilt:** Stand with your back against a wall and your feet only a few inches from the wall. Stand with perfect posture, and contract your abdominals as you flatten your back against the wall. Do 8-20 reps whenever you have a moment.
- **Shoulder Blade Pinches:** Whenever you think about it, squeeze your shoulder blades together. Hold for a few seconds and release. This will help to begin strengthening your postural muscles.
- **The 1st Walk:**
  - As soon as you feel ready, start moving around
  - C-section – still important to move – must be more careful – avoid bending

**Postpartum Exercise – Before 6 week checkup**

- Previously Listed Exercises
- Easy walking around the neighborhood
- Light leg lifts
  - Outer thigh lifts
  - Inner thigh lifts
  - Rear leg lifts
- Bridging

Remember - If at any time, your client experiences pain, dizziness or excessive bleeding, discontinue the exercise and have client talk to her physician immediately.
Postpartum Exercise – Special areas of Concern

Abdominal Conditioning
- **Diastasis Recti:**
  - Separation of the abdominal muscles
  - Have client lie supine. Place 2 of your fingers horizontally on her umbilicus. Have her perform a curl-up with her hands behind her head and her knees bent. Palpate from above and below the umbilicus.
  - Generally, a 2-3cm separation of the abdominal muscle postpartum would require exercise modification.
  - In this circumstance, you would want to avoid any oblique, twisting exercises until the separation heals and you will want to clasp your hands over your abdominal muscles while doing any ab exercises essentially 'splinting' or holding the muscles together while you work them. And remember if you’ve had a C-section, you’ll want to wait at least 6 weeks until you begin abdominal exercises and then speak to your physician to ensure you’re ready to begin these movements.

TVA & Other Great Core Stabilization Exercises
- Heel slides
- Abdominal Alternating Leg Lifts
- Abdominal Alternating Leg Extensions
- Abdominal Alternating Leg Lower & Lifts
- Side-lying Plank
- V-sits
- Dead Bug

Back conditioning
- Back rows
- Reverse flies
- Prone retraction and Arm Lifts
- Wall Presses
- Standing Opposite Arm and Leg Lift
- Alternate Arm and Leg Lift
- Peek-a-Boo Back Extension
- Ball Stretch

Getting creative with Muscle Conditioning Exercises
- Baby Carrier Wide Squats
- Chair Squats
- Baby Carrier Step Ups
- Baby Carrier 1 Leg Dips
- Baby Chair Squats
- Leg Extensions
- Pushups
- Chest Press
- Overhead Shoulder Press
- Baby Bridge Training
- Baby Crunches
- Baby Reverse Crunches

Postpartum Cardiovascular Exercise Guidelines

**Frequency:**
- Start at 3x/week
- Increase gradually to 5x/week
- Exercise every other day

**Intensity:**
- Moderate intensity (60-70% MHR)
- Talk test

**Time:**
- Start at 15 minutes of activity
- Increase gradually to approx. 40-60 minutes of activity
- Remember warm-ups and cool-downs

**Type:**
- Pick her favorite activity
- Activities that involve baby – walking, hiking, at-home cardio equipment or video – as baby gets older, jogging, cycling
- Swimming, fitness classes...

Breast Cancer Post Rehab

- Type of surgery will determine a woman’s recovery, how her body is affected and the post rehab process
  - Begin post-rehab an average of 10 weeks post surgery. Work closely with physician to determine effective and safe protocol
- Breast Cancer Surgery will result in
  - Soreness, tightness in chest/underarm/sides/abdominals & reduced ROM in shoulder.
  - Internal Shoulder rotation, postural deviations, weakness & muscle imbalance in pecs/lats/seratus
- Treatment therapies can cure the cancer but cause symptoms such as decreased BMD and Sarcopenia (decreased muscle)
  - Loss 1 year post-treatment is same as typical 10 year losses in women
Breast Cancer Post-Rehab Goals

• To restore strength and flexibility to particular joints and muscle groups that have become weak, stiff, and inflexible as a result of surgery.
• Depending on type of surgery, nerve damage may be present causing muscular dysfunction (lats, serrates). Strengthening surrounding muscle groups will be critical.
• To minimize the development of scar tissue
• To re-train postural muscles
• To reduce risk of lymphedema
  – Protein rich lymphatic fluids are unable to be properly transported to the lymph nodes for processing because these nodes have been removed.
  – This results in chronic or sometimes permanent, abnormal swelling in the arm or hand, often accompanied by tightness, pain, or heaviness around the surgical area.
  – Be sure to warm up, avoid lifting too much resistance and use compression sleeves as needed
• To improve cardiovascular fitness
• To minimize weight gain and maintain body composition
• To maintain muscle mass and maximize body strength
• To improve BMD

Toglia, 2003

Breast Cancer Post Rehab Exercise Guidelines

• Focus on ROM at shoulder – Try 15 seconds x 3-4 sets
  – Supine Single Arm Shoulder Stretch with pillow/assistance with unaffected arm
  – Butterfly stretch – start with pillow
  – Wall climb – start with assistance from unaffected arm
    • Front
    • Side
  – Single arm chest/doorway stretch – shoulder height, above shoulder height
  – Seated side stretch
  – Towel stretch
  – Overhead tricep stretch
  – Supine double arm/leg stretch
  – Dumbbell pendulum stretch

Breast Cancer Post Rehab Exercise Guidelines

• Cardio – Walking is the perfect post-surgery exercise
  – 20-30 minutes (continuous or intermittent as needed)
  – Moderate intensity
  – 3x/week
  – Increase F & D before intensity; progress slowly based on side effects

• Strength
  – Start with little or no resistance
  – Slow and gradually progress
  – 1 set of 8-10 exercises
    • Gradedly increase to 2-3 sets
  – 8-12 reps
  – 2-3x/week

Specific Post Rehab Strength Exercises for Breast Cancer Survivors

• Lower/Mid Trap floor presses
• Lower/Mid Trap wall presses
• Prone lower/mid trap arm lifts
• Shoulder tubing exercises
  – Variety of angles
• Rows
• Back flies
• External rotation – Side lying/standing
• Chest press/flies
• Pullovrs
• Standing torso rotation
• Oblique crunch
• Prone/quad opposite arm/leg

“A healthy body is a guest-chamber for a woman’s soul; a sick body is a prison.”

F. Bacon

www.nwFitnessEducation.com
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