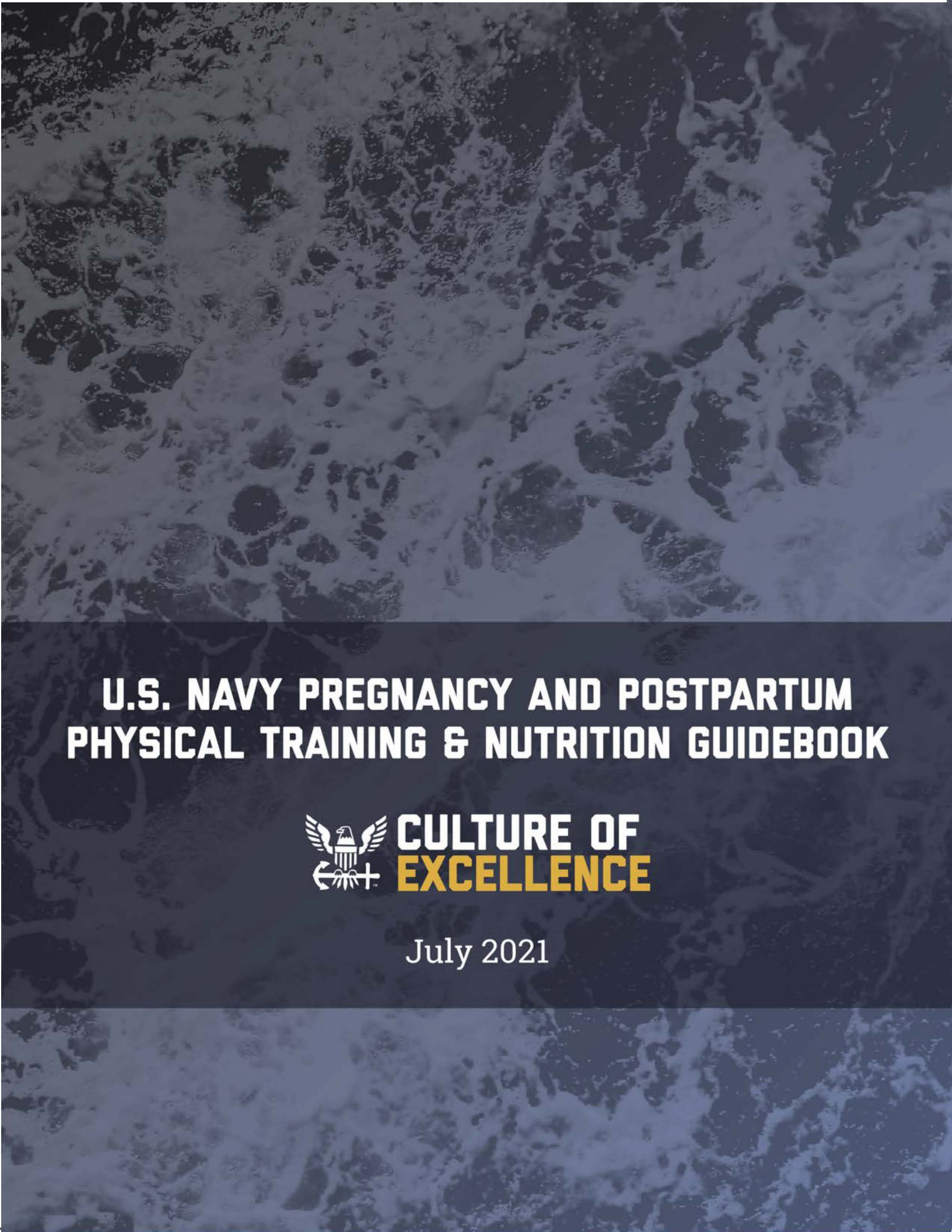

U.S. NAVY PREGNANCY AND POSTPARTUM PHYSICAL TRAINING & NUTRITION GUIDEBOOK

CULTURE OF EXCELLENCE

July 2021

CONTENTS

DISCLAIMER

This U.S. Navy Pregnancy and Postpartum Physical Training and Nutrition Guidebook is a resource that provides Servicewomen with guidance on physical fitness and nutrition during their pregnancy and postpartum periods. The content of this guidebook should not be taken as medical advice. Each Servicewomen should consult a registered dietitian prior to beginning any new dietary regimen and for individualized nutrition. Similarly Servicewomen should seek medical guidance from their health care provider (HCP) before engaging in any physical fitness program. If HCP recommendations differ from information in this guidebook, Servicewomen should defer to the guidance provided by their HCP as they are most familiar with their individual health status.

Participation in any physical training program may involve inherent risks including, but not limited to: developing various musculoskeletal injuries (e.g., strains, sprains, fractures, etc.), serious injury or death. Pregnant and postpartum Servicewomen should ensure that they have been cleared by their HCP for participation in physical activity and they follow recommendations within this guidebook to limit potential risk. Servicewomen should seek guidance on proper technique and form on exercises they are not familiar with from pre/postnatal certified fitness professionals throughout all stages of their pregnancy and postpartum period. Some exercises may require modifications due to anatomical changes that occur during pregnancy, especially in the later trimesters.

The nutrition section of this guidebook has been developed for Servicewomen to use as a resource for nutritional needs specific to preconception, pregnancy, postpartum and breastfeeding. The goal is to provide nutrition information to Servicewomen that reinforces the importance of healthy eating, prevention of excessive weight gain, and prevention of complications associated with pregnancy. The information provided is generalized and not specific to those Servicewomen with medical complications or concerns.

OVERVIEW

This guidebook provides physical training and nutrition guidance for pregnant and postpartum Servicewomen. Physical activity and good nutrition are integral to maintaining your overall health and fitness, and equally contribute to a healthy lifestyle. Nutrition guidance will address nutritional needs prior to conceiving, throughout the stages of pregnancy, and during the postpartum period. Topics which will be covered include healthy eating guidelines, recommended food choices and those foods to avoid, weight management strategies, nutrition to support breastfeeding/lactation and additional nutrition resources. Physical training guidance will address what components should be included in a safe and effective workout during pregnancy and the postpartum period, example exercises for each of these elements and some sample workouts. Nutrition and physical training (PT) are important throughout all phases of your life to include the pregnancy and postpartum period. If you start your pregnancy healthy and with a base level of fitness, you will generally recover quicker than someone with a lower level of health and fitness. Pregnancy provides the opportunity to capitalize on developing and sustaining healthy behaviors.

The overarching concern of commanding officers, supervisory personnel and HCPs is to ensure the health and safety of you and your unborn child, while maintaining your optimum job and career performance. It is your HCP's responsibility, not the command fitness leader (CFL), to provide you with nutrition and exercise guidance. CFLs are encouraged to refer you to the U.S. Navy Pregnancy and Postpartum Physical Training and Nutrition Guidebook. You should also be familiar with the Physical Readiness Program Guide 8 (Managing Physical Fitness Assessment Records for Pregnant Servicewomen) located on the Physical Readiness Program Office website regarding relevant pregnancy and postpartum physical readiness policy. You are encouraged to seek additional guidance from your HCP, health educators and fitness professionals/instructors throughout your pregnancy and the postpartum period to develop or maintain optimal health and fitness levels. For specific nutritional needs that are tailored to you, please contact a registered dietitian using the dietitian locator found on the nutrition website. https://www.mynavyhr.navy.mil/Support-Services/Culture-Resilience/Navy-Nutrition/

PHYSICAL TRAINING

Cardiorespiratory (cardio) and resistance (strength) training are safe during pregnancy and the postpartum period for the majority of women; however, if you have other medical conditions or concerns you should consult with your primary care or obstetrical provider. In the absence of any medical complications or contraindications to exercise, you are encouraged to begin or continue participation in an exercise regimen throughout all stages of your pregnancy and the postpartum period. Pregnancy physical training (PT) should be based on your pre-pregnancy level of fitness (i.e., you should not increase intensity level nor incorporate exercise activities that you have not participated in prior to pregnancy). Pregnancy and postpartum PT can help you maintain and improve your body composition, overall physical fitness, prevent or limit various medical conditions

and complications, and promote a safe and effective postpartum recovery. See Table 1 for specific benefits of exercise during pregnancy and the postpartum period.

Table 1: Benefits of PT During Pregnancy & Postpartum Period

PREGNANCY PT	POSTPARTUM PT
Improves/maintains overall fitness	Assist with return to pre-pregnancy fitness level
Reduces stress, anxiety, depression	Reduces stress and risk of postpartum depression
Prevents excessive gestational weight gain and improves postpartum weight loss	Assists with weight loss
Reduces risk of preeclampsia, gestational diabetes, operative vaginal delivery and cesarean delivery (c-section)	Assists with recovery of core strength/stability
Reduces incidence/symptoms of low back pain	Limits bone loss due to breastfeeding
Improves sleep quality	Improves sleep quality
Reduces risk of urinary incontinence	Reduces urinary incontinence
Improves mood and energy levels	Improves mood and energy levels

Reference: American College of Obstetricians and Gynecologists, Committee Opinion No. 804. 2020 Physical Activity and Exercise During Pregnancy and the Postpartum Period

Pregnancy PT should focus on the maintenance or improvement of your fitness level to assist you with recovering from giving birth. After childbirth, you should gradually resume exercising under the guidance of your HCP. Postpartum PT should focus on helping you regain your fitness to return to daily PT and prepare yourself to meet the Physical Fitness Assessment (PFA) standards during your first official postpartum PFA. Despite the importance of PT during pregnancy and the postpartum period, the priority should be you and your baby's health and wellbeing.

Physical activity recommendations for pregnant women follow those for the general non-pregnant population with minor modifications (see Table 2). Pay close attention to how you feel and how your body responds to PT during your pregnancy. You should familiarize yourself with the symptoms and warning signs for when to stop exercise (See Table 3). If you experience any of the warning signs while exercising, stop and seek medical treatment. Similarly, you should not begin exercise if you are experiencing any of these symptoms. The following are a list of safety precautions regarding exercise for pregnant women:

- Avoid physical activity in the heat, especially with high humidity.
    - Avoid dehydration (pregnant women have 1.5 times more blood volume)
    - Avoid overheating (especially during the first trimester to prevent potential neural tube defects in your baby)
    - Avoid "hot" yoga and pilates
- Avoid activities with increased risk of falling (e.g., downhill/water skiing, surfing, off-road cycling, horse-back riding and gymnastics)
- Avoid activities at high-pressure or low-pressure altitudes (e.g., scuba-diving or skydiving)

  - PT above 6,000 feet (unless you live above 6,000 feet)
- Avoid contact sports or activities that have increased risk of abdominal contact/trauma (e.g., ice hockey, boxing, soccer and basketball)
- Avoid exercises while lying on your belly or in a facedown position (i.e., prone position) during the 2nd and 3rd trimesters of pregnancy which create too much intra-abdominal pressure and may cause or worsen abdominal separation (i.e., diastasis recti)
  - Avoid supermans, push-ups from the floor and planks
- Avoid exercises while lying flat on your back (i.e., supine position), especially after 28 weeks gestation which may reduce blood flow to your baby
  - Avoid bench and chest press on a flat bench

Table 2: Exercise Recommendations for Pregnant Servicewomen

	CARDIORESPIRATORY	RESISTANCE	FLEXIBILITY
Frequency	≥3-5 days/week (up to daily)	2-3 nonconsecutive days/week	≥2-3 days/week with daily being most effective
Intensity	Moderate intensity; *RPE of 12-13 on the 6-20 scale Vigorous intensity: *RPE of 14-17 on the 6-20 scale for Servicewomen who were highly active prior to pregnancy	8-10 repetitions or 12-15 repetitions; Intensity that permits multiple submaximal repetitions to a point of moderate fatigue	Stretch to the point of feeling tightness or slight discomfort
Time	~30 minutes/day of accumulated moderate intensity exercise to total at least 150 minutes/week OR 75 minutes/week of vigorous intensity cardio exercise	1 set for beginners 2-3 sets for intermediate & advanced	Hold static stretch for 30 seconds each, repeat 3-4 times for each muscle group
Type	A variety of weight- and non-weight bearing activities (see Table 8; pg 11)	A variety of machines, free weights, resistance bands/ tubing and body weight exercises which target major muscle groups (see Table 6; pg 9)	A series of static flexibility exercises for each muscle-tendon unit (see Table 9; pg 12)

Reference: American College of Sports Medicine's Exercise Guidelines for Pregnant Women.
**RPE = Rate of perceived exertion; See Table 7 in Cardiorespiratory Exercise section for further explanation*

Table 3: Symptoms and Warning Signs to Stop Exercise

PREGNANCY	POSTPARTUM
Dizziness, feeling faint, or headache	Dizziness, feeling faint, or headache
Vaginal bleeding or fluid leakage	Pain
Chest Pain	Bleeding

Muscle weakness affecting balance	
Calf pain or swelling	
Preterm labor (regular painful contractions)	
Decreased movement of your baby	

A pregnancy and postpartum PT session should include a combination of the following elements (always starting and finishing with the warm-up and cool-down):

- Warm-Up
    - Core Strength and Stability Exercises
    - Dynamic Stretching Exercises
- Resistance (Strength) Training
- Cardiorespiratory (Aerobic) Training
- Cool-down
    - Flexibility (Stretching) Training

Warm-Up

Warm-up exercises prepare your body for PT and minimize the likelihood of injury by gradually increasing your heart rate, breathing rate and body temperature. Such movements should be less intense versions of the movements performed in the workout, preparing you mentally and physically for the upcoming PT session. Pregnancy and postpartum warm-ups should include exercises to strengthen the core (deep abdominal muscles and pelvic floor) muscles followed by some dynamic stretching exercises.

Core Strengthening and Stability/Exercises

The main function of the core muscles (e.g., transverse abdominis and pelvic floor muscles) are to support and stabilize the spine. The transverse abdominis (TA) is the deep innermost abdominal muscle which encircles your trunk/torso like a corset. The TA acts to compress the abdominal cavity (has a “drawing in” effect) and can help you with pushing during labor. The main pelvic floor muscle (i.e., pubococcygeus) surrounds the openings of the urethra, vagina and rectum and can help reduce urinary incontinence which is common after childbirth. During pregnancy having a strong core is particularly important to assist you with delivery and lower the risk of postpartum urinary incontinence. Other benefits of a strong core can include: reduced pelvic pain/pressure during pregnancy, provide back support for your growing belly, prevent back aches and pain, and assist with abdominal separation recovery.

Pregnancy causes abdominal stretching and separation in order to make room for your growing baby. The two halves of your rectus abdominal muscles (“6-pack muscles”) are held together by connective tissue which are stretched during pregnancy and begin to separate. Abdominal

separation (i.e., diastasis recti) is a natural process that occurs in most women by the later stages of pregnancy. This can weaken your core and lead to back or pelvic pain. Diastasis recti is normally not treated and usually corrects itself after delivery as the abdominal muscles regain strength during the postpartum period. Performing core strengthening exercises during pregnancy and the postpartum period can reduce the severity of and/or assist with the closing of your abdominal separation, respectively.

Diastasis recti checks can be performed periodically during pregnancy and postpartum to determine the presence of abdominal muscle separation. You can perform a self-check for diastasis during pregnancy by lying down on your back (this temporary position is safe for all stages of pregnancy), knees bent, soles flat on the floor and raise your head and shoulders off the ground. Use your fingers to feel your abdomen for a soft lump or bulge above the belly button. If there is an outward bulge along the midline, this indicates a separation or diastasis. You can check for diastasis during the postpartum period (at least two to six weeks after giving birth) using a similar method. Lie on your back as described above, lift your shirt to expose the abdominal area and raise your head and shoulders off the ground as you exhale. While pressing down with your fingers, walk them along the midline of the belly a few inches above and below your navel to feel for a soft lump or bulge. You can tell how big the separation measures by counting the finger widths between the muscles. One to two finger-widths is normal; three or more could be a sign of diastasis recti. The intent of performing these self-checks is to be aware if you have abdominal separation so that you can avoid performing exercises which may further worsen it. If diastasis persists seek guidance from your HCP, obstetrical provider or a pelvic floor specialist.

The following table (Table 4) provides recommended safe core exercises to perform during all stages of pregnancy. Kegel exercises and TA breathing can be conducted daily during pregnancy and in the immediate postpartum period (first 6 weeks after giving birth) for 3 sets of 10-15 repetitions. The three sets do not need to be performed in one sitting but can be done throughout the day. The remaining core exercises can be performed during your PT session warm-up consisting of 1 set of 10-15 repetitions for each exercise. You should consult with your HCP or obstetrical provider before resuming core strengthening exercises after childbirth.

Kegel Exercises are performed as follows according to the Mayo Clinic – How to guide:

- Kegels can be performed in any position; however, it may be easiest seated or lying down.
- Identify your pelvic floor muscles by pretending you are stopping urination midstream.
- Next, imagine you are sitting on a marble and tighten your pelvic floor muscles as if you're lifting the marble. Try it for three seconds at a time, then relax for a count of three.
- Do not flex the muscles in your abdomen, thighs or buttocks. Avoid holding your breath.
- Repeat for 10 to 15 more repetitions to complete 1 set. Aim for 3 sets a day.

TA breathing is performed as follows:

- In either a seated or standing position, slowly inhale a deep breath to fill your lungs while keeping your shoulders level. You should see your lower belly expand.
- As you start to exhale slowly, gently do a Kegel. Pretend you are pulling your pelvic floor up like you are stopping a stream of urine.
- As you continue to slowly exhale, draw your lower belly in, up and around. This engages the TA muscle. Imagine you are lifting and hugging your baby with your abdominal muscles. Another helpful cue is to try to bring your belly button to your spine.
- The act of "drawing in" on the exhale is not "sucking in." The movement is a drawing in and lifting up motion.
- Repeat for 10 to 15 more slow breaths to complete 1 set. Aim for 3 sets a day.
    - Inhale, expand your belly. Exhale, perform a Kegel and draw in your abs to "hug your baby."

Table 4: Example Core Strengthening and Stability Exercises

PREGNANCY EXERCISES	POSTPARTUM EXERCISES
Kegel exercises	Kegel exercises
TA breathing ("belly breathing")	TA breathing ("belly breathing")
Pelvic tilts (standing)	Pelvic tilts (lying)
Cat-Cow	Pelvic/glute bridge
Bird-Dogs	Heel/leg slide
Modified side plank (30 sec. each side)	Side lying clams

The following are a list of movements/exercises to avoid during the 2nd and 3rd trimester and postpartum period (until medically cleared by your HCP) to prevent causing or increasing abdominal separation:

- Any exercise which creates too much intra-abdominal pressure causing your abdominal muscles to dome, bulge or cone out (due to abdominal separation)
    - crunches, sit-ups, full planks, full push-ups, V sit-ups, boat pose in yoga, heavy lifting
- Any exercises involving twisting your abdomen
    - oblique side bends, bicycle crunches, Russian twists
- Any exercises or moves that stretch the abdominal muscles
    - backbends (e.g., upward facing dog, cobra, bow pose)
    - hanging exercises (e.g., pull-ups, leg tucks)

Dynamic Stretching Exercises

Before engaging in any dynamic warm-up stretches, take time to warm up your large muscle groups for a few minutes (e.g., 3-5 minutes of walking/cycling/stair climbing). Dynamic stretching, which are slow-movement stretching or "bouncing" stretches, are effective pre-workout to help prepare muscles for PT without overextending your muscles and joints to cause injury. Table 5 shows some example dynamic warm-up stretches which can be performed over 5-10 minutes with 5-10 repetitions each unless otherwise noted.

Table 5: Example Dynamic Warm-Up Stretches

WARM-UP STRETCHES
Quadruped Thoracic Rotation
*Glute Bridge (30 sec. hold)
T's Bent Over
Reverse Lunge, Elbow to Instep – Kneeling
Leg Cradle-In Place
Body Weight Squats/Body Weight Sumo Squats

**Requires lying on back; do not perform during 3rd trimester of pregnancy*

Resistance (Strength) Training

Resistance training challenges your muscles to overcome resistance and increase muscular strength or muscular endurance. Strength training builds muscle for carrying weight (e.g., your newborn), increases your strength for upcoming labor, prevents fatigue and stabilizes joints to prevent injury. Resistance can be provided by your own body weight, resistance bands and tubing, or handheld weights (barbells or dumbbells). The exercises should work all of your major muscle groups, emphasizing those affected by pregnancy, including the upper back, chest, shoulders, glutes and legs. To ensure adequate blood flow to the uterus, resistance training should always be completed prior to performing cardiorespiratory exercise. Completing the cardiorespiratory workout before strength training may inhibit proper blood flow to your baby and/or cause you to experience lightheadedness.

When developing a strength training routine, schedule your sessions 2 to 3 times per week on nonconsecutive days, but be sure not to exceed 3 days per week. You are advised against participating in a powerlifting program with the intent of dramatically increasing strength during pregnancy due to the elevated risk of injury caused by the pregnancy hormone relaxin. Relaxin helps soften the ligaments around your joints during pregnancy and prepares your pelvis and cervix for birth. Heavy weight training (i.e., powerlifting) can put excess pressure on looser joints making them unstable and more susceptible to injury. Another reason to avoid heavy weight training during pregnancy is because heavy lifting usually involves holding one's breath (Valsalva maneuver) which increases intra-abdominal pressure that may damage the pelvic floor.

If you are a beginner or recently returning to exercise, you should aim for 1 set of either 8-10 repetitions to build muscular strength or 12-15 repetitions to build muscular endurance, for each exercise which causes moderate muscular fatigue (i.e., moderate resistance). If you regularly participate in strength training, you should aim for 2-3 sets of 8-10 or 12-15 repetitions for each exercise to develop muscular strength or muscular endurance, respectively. If this recommendation is too easy, try increasing the weight being lifted or the number of repetitions or sets. If too difficult, reduce either the weight, number of sets and/or repetitions.

Sample exercises (Table 6 below) have been categorized into either compound exercises (i.e., upper body push, upper body pull, lower body push, lower body pull) or single joint exercises. Compound exercises are multi-joint movements that work several muscles or muscle groups at one time. These exercises allow you to get a full-body workout in less time, burns more calories, keeps your heart rate up providing cardiovascular benefits and simulates real-world activities. Single joint exercises only work one muscle or joint at a time. Single joint exercises are usually performed during rehabilitation following an injury or to correct muscle imbalances/weakness. Your resistance training session should consist predominantly of compound exercises; however, a couple single joint exercises can be used to supplement your workout. To achieve a well-balanced total body workout, you should combine upper body push exercises with lower body pull exercises on one training day during the week. On the next strength training session during the week (i.e., a separate day), you should perform the opposite (i.e., upper body pull exercises with lower body push exercises). Single joint exercises should be performed last within a resistance training session.

Table 6: Example Resistance Training Exercises

UPPER BODY PUSH	UPPER BODY PULL	LOWER BODY PUSH	LOWER BODY PULL	SINGLE JOINT
*Push-ups	Seated row	Squat (Sumo)	*Leg/Hamstring curls	Bicep Curls
Overhead or Military Press	Bent-over Row	Lunge (lateral, front, or reverse)	Deadlifts	Triceps Extensions (overhead, dips, dumbbell kickbacks)
*Bench or Chest Press	*Pull-ups/Assisted Pull-up machine		Romanian Deadlifts	Calf Raises

**See Table 10 for recommended modifications and variations to traditional resistance exercises during pregnancy.*

Cardiorespiratory (Aerobic) Training

Cardiorespiratory fitness is the ability of your heart, blood vessels and lungs to supply oxygen to your muscles to sustain physical activity. Oxygen and nutrient-rich blood is circulated throughout the body, including the uterus, while performing aerobic exercise. You should use the Borg rating of perceived exertion (See Table 7) scale to monitor and self-assess your exercise intensity level during PT sessions. Rating of Perceived Exertion (RPE) is a way of measuring physical activity intensity level.

Rate of perceived exertion is how hard you feel like your body is working. It is based on the physical sensations a person experiences during physical activity, including increased heart rate, increased breathing rate, increased sweating, and muscle fatigue. Although this is a subjective measure, your exertion rating based on the 6 to 20 rating scale, may provide a fairly good estimate of your actual heart rate during physical activity. When exercising, multiply your RPE score by 10 to give you a rough heart rate estimate. For example, when taking a brisk walk, a RPE score of 13 would give an estimated heart rate of 130 beats/minute (13 x 10 = 130). You can also use the "talk test" to determine your exercise intensity level. If you are performing moderate-intensity exercise, you should be able to talk and carry on a conversation.

You should aim for 150 minutes (2 hours and 30 minutes) of moderate-intensity (RPE 12-13) aerobic exercise a week during your pregnancy and postpartum period which is spread out across the week. Your fitness level or a medical condition may require you to alter the type of physical activities you participate in and/or reduce the pace or intensity of those activities in order to continue exercising safely. Table 8 provides a list of safe aerobic activities to participate in during pregnancy.

Table 7: Borg Rating of Perceived Exertion (RPE) Scale

PERCEIVED EFFORT	RPE SCORES	EXAMPLE ACTIVITIES	TALK TEST
None	6	Reading a book; Using Computer; Watching TV	Able to carry on conversation
Extremely Light	7-8	Bending over to tie shoes	Able to carry on conversation
Very Light	9-10	Easy Chores (ex. Laundry)	Able to carry on conversation
Light	11-12	Leisurely walking or "strolling"; doesn't speed up your breathing	Able to carry on conversation
Somewhat Hard	13-14	Speed walking, resistance training; speeds up heart rate and breathing but doesn't make you out of breath	Able to carry on conversation
Hard	15-16	Cycling, Jogging, Swimming; requires vigorous effort causing your heart to pound and breathe very fast	Must take Breath between 4-5 words
Very Hard	17-18	Running; highest level of exercise you can maintain without stopping	Hard to Speak
Extremely Hard	19-20	A final sprint to the finish line in a race; a pace you can't maintain for long	Hard to Speak

Reference: Borg, G. Borg's Perceived exertion and pain scales. 15th ed. Champaign, Il: Human Kinetics; 1998.

Table 8. Recommended Safe Aerobic Exercises During Pregnancy

SAFE EXERCISES DURING PREGNANCY
Walking/Hiking
Bicycling/Stationary Cycling
Rowing
Dancing
Swimming**
Low-impact Aerobics/Water Aerobics**
Modified Yoga/Modified Pilates
Running/Jogging*
Resistance Training
Racquet Sports*

**May be safe with regular participation prior to pregnancy*
*** Avoid submersion in water during the first 6 weeks postpartum*

Cool Down

All PT sessions should end with a cool-down period which may include stretching or flexibility training. After finishing your aerobic exercise routine, walk around until your heart rate decreases and returns to pre-exercise levels.

Flexibility (Stretching) Training

Take advantage of your warmed-up muscles following your exercise routine to work on your flexibility. Pregnancy causes posture shifts to redistribute the weight of your growing baby belly and breasts which can cause tightness in the lower back, neck and chest causing muscle imbalances and soreness. Regular flexibility training can help you maintain or improve your normal range of motion, relieves discomfort associated with pregnancy and can prevent injury.

Post-exercise stretching should be static, a continuous hold with no bouncing. When performing flexibility exercises, it is important to place your body in a neutral and stable position. Stretch the muscle until you feel a gentle pull, continuing to breathe as you hold the stretch for 30 seconds. You will likely be more flexible than you were prior to pregnancy, due to the pregnancy hormone relaxin which loosens ligaments and joints in preparation for delivery. Therefore it is important to listen to your body and limit yourself to a range of motion that feels good and is not painful. These stretches should be repeated 3 to 4 times each for every muscle group, 2 to 3 times per week; however, they can be done every day as long as you warmed-up. As pregnancy progresses, you are advised to conduct stretches from a seated position instead of a standing position to avoid potential falls. Stretching should not be done while lying flat on the back after 28 weeks gestation (i.e., during third trimester) which may limit blood flow to your baby; however, many stretches can be modified to be performed while lying on your side. Table 9 provides a list of flexibility training exercises to perform during pregnancy and the postpartum period.

Table 9. Examples of Flexibility Training Exercises

UPPER BODY	LOWER BODY	CORE AND BACK
Chest Stretch	*Standing Figure 4 Glute Stretch/Seated Glute Stretch	*Low Back Stretch
Cross-body Stretch/Shoulder Stretch	Half Kneeling Hip Flexor Stretch	*Backward Stretch (with or without fitness ball)
Triceps Stretch	Standing Hamstring Stretch/Seated Hamstring Stretch	*Standing Pelvic Tilt/Pelvic Tilt with Fitness Ball
Neck Stretches	Standing Quad Stretch/Side-lying Quad Stretch	*Seated Torso Rotation
	Standing Calf Stretch/Seated Calf Stretch	*Carpal Tunnel Release

**Stretching exercises which may prevent or ease discomforts that may occur during pregnancy.*

Pregnancy Exercise Modifications and Variations

As your pregnancy progresses into the 2nd and 3rd trimester, you will need to use some exercise modifications to safely continue PT. For your aerobic exercise routine, you may need to choose an alternative activity and/or reduce your pace or intensity. Many women find jogging uncomfortable later in pregnancy and choose to walk or engage in low impact aerobic activities such as swimming, cycling or rowing instead which puts less pressure on loose joints. It is not necessary to complete your entire workout all in a single session. During the later weeks in pregnancy you may be feeling increasingly tired and sore; therefore, you could divide your workout up into short 10-15 minute exercise bouts throughout the day.

Recommendations for adjusting resistance training during pregnancy include: reducing the weight being lifted, using lighter resistance bands/tubing, performing body weight exercises, or decreasing sets and/or repetitions. You should not be performing exercises flat on your stomach (i.e., prone) or flat on your back (i.e., supine). Your balance may also be impaired due to the shift of your center of gravity. Therefore many exercises can be modified by using alternative equipment (machines vs. free weights), modifying your body position (seated vs. standing; side-lying vs. lying on your back), holding onto something for support or performing two-legged vs. one-legged exercises. Specific exercise variations for exercises listed within this guidebook are provided in Table 10 below.

Table 10. Examples of Modified Pregnancy Exercises

TRADITIONAL EXERCISES	MODIFIED PREGNANCY EXERCISES
Bench/Chest Press	Seated Chest Press (machine or resistance band) or incline chest press
Push-Up on floor	Incline Push-Up (against a wall or table)
Pull-Ups	Lat Pulldown (machine or kneeling with resistance band)
Squats	Half or Quarter Squats; *Sumo Squats
Leg/Hamstring Curls	Standing straight-leg extensions (resistance bands or cables)
Glute Bridge	External Rotation (resistance bands)

**Sumo squats help stretch the pelvic floor, expand the birth canal and can assist with the baby's descent during late stages of pregnancy*

Postpartum Exercise Considerations

Prior to resuming a postpartum PT regimen, you should consult with your HCP to seek medical clearance. Additional recovery time may be required if you had a complicated vaginal or cesarean delivery. General postpartum PT guidelines for uncomplicated vaginal deliveries include starting slowly and then gradually increasing your fitness routine as you heal and recover from childbirth. Stretching, pelvic floor exercises and breathing exercises are safe to perform in the immediate postpartum period (i.e., first 6 weeks after birth). The initial focus should be on strengthening the pelvic floor (e.g., Kegel exercises) and stabilizing the core (e.g., TA breathing). Low impact aerobic activities (e.g., walking), which put little pressure on the pelvic floor, can generally be resumed soon after birth. Beginning a moderate intensity aerobic exercise program should be delayed until after receiving medical clearance during the first postpartum checkup (usually 6-8 weeks after childbirth). Use this routine checkup to discuss any lingering pain or urinary incontinence you may be experiencing with your HCP or obstetrical provider.

You should use fatigue as your guide for participation in exercise activity. Avoid or stop performing any exercise that causes pain or discomfort. Activities that involve submersion in water (i.e., swimming, water aerobics) should be avoided during the immediate postpartum period. Exercises which involve putting excessive pressure on the abdominal muscles and pelvic floor, twisting of the abdomen, and/or stretching of the abdomen are not recommended (see pg 6 for contraindicated exercises under “core strengthening and stability exercises”). You may not have access to childcare during your maternity convalescent and/or primary caregiver leave, making it difficult to access gyms or various exercise equipment. A great alternative option is to take your baby for walks while pushing their stroller and to perform body weight exercises which require no equipment. Many common household items can also be used to substitute for weights or dumbbells (e.g., backpack full of books, gallon jug of water or milk) when you are ready to increase the intensity of your workout.

Participating in a mild to moderate exercise routine is compatible and safe with breastfeeding. Mild to moderate exercise doesn’t cause the accumulation of lactic acid in breast milk, doesn’t change milk volume and doesn’t affect infant growth. Some general guidelines for breastfeeding and exercise in the postpartum period include: avoiding strenuous or exhaustive exercise, ensuring adequate hydration before, during and after activity, and ensuring adequate caloric intake to support both exercise and lactation (see pg. 22 in nutrition section for further details). Another recommendation is to exercise after your baby is fed or your breasts are empty to avoid leakage or breast engorgement which can be painful. A supportive bra should be worn during exercise to support your breasts; however, sports bras should be avoided because of breast compression which may impact milk supply.

Ultimately, you know your body best and you should pay attention to how you are feeling during PT so not to overexert yourself. You should be familiar with the symptoms and warning signs listed in

Table 3 for when to stop exercise and seek medical attention, if you experience any of these symptoms during exercise that don't resolve with rest. Table 11 and 12 provide example workouts for a pregnancy PT session and a postpartum PT session, respectively.

Table 11. Sample Pregnancy Workout

EXERCISE ELEMENT	SUB-COMPONENT	SETS X REPETITIONS/TIME	ACTIVITY
Warm-Up	Core Strength/Stability Exercises	1 Set X 10 Reps	TA Breathing
			Cat-Cow
			Bird Dogs
		30 seconds each side	Modified Side Plank
	Dynamic Stretching Exercises	1 Set X 4 Reps each side	Quadruped Thoracic Rotation
		1 Set X 10 Reps	T's Bent Over
		1 Set X 4 Reps each side	Reverse Lunge, Elbow to Instep-Kneeling
			Leg Cradle In Place
		1 Set X 10 Reps	Body Weight Sumo Squats
Resistance Training	Upper Body Push	2 Sets X 12 Reps	Seated Chest Press Machine
			Overhead Press with Dumbbells
	Lower Body Pull	2 Sets X 12 Reps	Deadlifts with Dumbbells
			Seated Leg Curl Machine
Cardiovascular Training	N/A	30 minutes of moderate intensity exercise (RPE ~13)	Stationary cycle
Cool-Down	Flexibility Training	3 Reps X 30 seconds hold	Chest Stretch
			Shoulder Stretch
			Seated Glute Stretch
			Seated Hamstring Stretch
			Backward Stretch with Fitness Ball
			Carpal Tunnel Release

Table 12. Sample Postpartum Workout

EXERCISE ELEMENT	SUB-COMPONENT	SETS X REPETITIONS/TIME	ACTIVITY
Warm-Up	Core Strength/Stability Exercises	1 Set X 10 Reps	Kegel Exercises
			TA Breathing
			Lying Pelvic Tilts
		1 Set X 10 Reps per leg	Heel Slides
	Dynamic Stretching Exercises	2 Sets X 30 seconds hold	Glute Bridge
		1 Set X 10 Reps	T's Bent Over
		1 Set X 4 Reps each side	Reverse Lunge, Elbow to Instep-Kneeling
			Leg Cradle In Place
		1 Set X 10 Reps	Body Weight Squats
Resistance Training	Upper Body Pull	2 Sets X 12 Reps	Bent Over Rows with Dumbbells
			Lat Pulldown with Resistance Bands
	Lower Body Push	2 Sets X 12 Reps	Squats with Barbell
		2 Sets X 12 Reps per leg	Reverse Lunges

Cardiovascular Training	N/A	30 minutes of moderate intensity exercise (RPE ~13)	Brisk Walking while pushing stroller
Cool-Down	Flexibility Training	3 Reps X 30 seconds hold	Shoulder Stretch
			Low Back Stretch
			Standing Figure 4 Glute Stretch
			Standing Quad Stretch
			Half Kneeling Hip Flexor Stretch

NUTRITION

Pre-Pregnancy Nutrition

Key Recommendations

If you are trying to get pregnant, focusing on a healthy diet can help with your ability to conceive and may even improve your fertility. Focus on eating diets rich in fruits, vegetables, lean proteins, dairy or alternatives, whole grains and healthy fats.

Taking a daily prenatal vitamin is highly recommended to provide a higher intake of folic acid (vitamin B9). Folic acid is important for the development of your baby's nervous system and reduces the risk of your baby having neural tube defects. Consuming 400 micrograms (mcg) of folic acid, either from your prenatal vitamin or fortified foods, is recommended.

- Foods high in folic acid include the following: legumes (e.g., beans, peas, and lentils), eggs, leafy greens, beets, citrus fruits (e.g., oranges, grapefruit, lemons and limes), broccoli, brussel sprouts, asparagus, nuts and seeds, bananas, avocado and fortified grains (e.g., cereals).

Menstrual disturbances (e.g., missed or no periods) may occur when women engage in vigorous training with high amounts of physical activity. The recommendations to restore normal menstrual status are to increase caloric intake and/or decrease physical training volume.

If you are overweight or obese, it is recommended to try to reach a healthy weight prior to becoming pregnant. Knowing what your body mass index (BMI) is can help you understand if you are at normal weight or overweight. If your BMI is greater than 25 kg/m^2 you may benefit from some weight lost (~1-2 pounds/week) via exercise and dietary changes. You can calculate your BMI using an online BMI calculator available from the following website: https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm

IDEAL PLAN

You should meet with your HCP if you are trying to become pregnant. A Registered Dietitian Nutritionist (RDN) can also help develop a dietary plan to include caloric needs that best support your future pregnancy. Women who are experiencing menstrual disturbances and/or have a low or high BMI (i.e., <18.5 or >25 kg/m^2) are recommended to work with a RDN and your HCP to make lifestyle changes to support a healthy pregnancy.

Are dietary supplements safe?

Dietary supplements, which includes vitamins, minerals, herbs, botanicals, and amino acids, are not well regulated by the Food and Drug Administration (FDA). Use caution when taking dietary supplements as it can impact your ability to become pregnant and may have negative consequences for your unborn child. You should refer to the following websites listed below before starting or continuing to take any dietary supplements, if you are trying to conceive.

https://www.fda.gov/consumers/women/dietary-supplements-tips-women

https://www.opss.org/

Pregnancy Nutrition

Key Recommendations

Continue to eat a healthy well balanced diet throughout all stages of your pregnancy. It is not appropriate to eliminate food groups during pregnancy. Refer to the additional nutrition resources, listed at the end of this guidebook, for links to specific guidance on pregnancy nutrition.

Develop a well-balanced eating plan that focuses on consuming nutrient rich healthy foods (e.g., fruits, vegetables, whole grains, lean proteins, dairy and healthy fats). Limit unhealthy foods that do not provide significant nutrients but are high in calories (i.e., empty calories).

Continue to take a prenatal vitamin daily throughout all of stages of your pregnancy. If you are not able to take a prenatal vitamin, please consult with your HCP, obstetric provider or RDN to ensure your diet can provide you with all of the required nutrients.

Make sure to follow food safety rules and guidelines. Pregnancy puts you at a higher risk of foodborne illnesses which can have negative consequences for you and your baby.

How much total weight should I gain during my pregnancy?

The recommended weight gain is determined based on your pre-pregnancy BMI. If your BMI is <18.5 or >25 kg/m^2, you should discuss appropriate weight gain during pregnancy with your HCP. The guidelines for weight gain during a singleton (i.e., only 1 baby) pregnancy and with twins (i.e., 2 babies) are provided in Tables 13 and 14 below.

Table 13. Guidelines for Weight Gain During a Singleton Pregnancy

BODY MASS INDEX (BMI) (KG/M^2)	TOTAL RECOMMENDED WEIGHT GAIN (LB)	2ND AND 3RD TRIMESTER RATE OF WEIGHT GAIN (LB/WK)
<18.5	28 to 40	1.0 to 1.3
18.5 to 24.9	25 to 35	0.8 to 1.0
25 to 29	15 to 25	0.5 to 0.7
≥30	11 to 20	0.4 to 0.6

https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-weight-gain.htm

Table 14. Guidelines for Weight Gain During Pregnancy with Twins

BODY MASS INDEX (BMI) (KG/M^2)	TOTAL RECOMMENDED WEIGHT GAIN (LB)
18.5 to 24.9	37 to 54
25 to 29	31 to 50
≥30	25 to 42

https://www.acog.org/womens-health/faqs/multiple-pregnancy

Do my dietary needs change with pregnancy?

Yes, your caloric and nutrient requirements do change with pregnancy. Some key nutrients which are important to you and your baby's health are listed in Table 15 below. Your prenatal or multivitamin supplement will help you meet some of these needs. If you have questions about meeting your dietary needs, consult with your HCP.

Table 15. Key Nutrient Requirements During Pregnancy

NUTRIENT / IMPORTANCE	AMOUNT NEEDED	TIPS TO IMPROVE CONSUMPTION
Iron When pregnant you need 2x the amount of iron than normal because it is making extra blood for your baby.	27 mg/day	Use a cast iron pan when cooking or sautéing meat or vegetables Serve foods like tomato-based salsa or tomato-based sauces with meats (for example, meat sauce made with tomato sauce and spaghetti). Drink a glass of orange juice or a vitamin C–enriched 100% fruit juice with your fortified cooked or ready-to-eat cereal for breakfast. Snack on dry, ready-to-eat cereal instead of chips and crackers.
***Calcium** Your body needs it to provide aid in the development of vital structures of the baby like the skeleton.	1000 mg/day 18 year olds need 1300 mg per day	Include dairy foods, such as milk, cheese, and yogurt, and non-dairy alternatives such as fortified almond and soy milk. Most prenatal vitamins do not provide all of your calcium needs. It has to be achieved with both food sources and the vitamin together. Consume other foods rich in calcium such as spinach, broccoli, fortified orange juice, sardines, and fortified tofu. Check the label on any fortified foods to make sure calcium has been added.
Folate Folic Acid is important to prevent major birth defects (e.g., neural tube defects such as spina bifida)	600 mcg/day	Include fortified foods, lentils, beans, broccoli, spinach, collards, romaine, avocado, and orange juice.

**Calcium needs do not increase with pregnancy, but ~24% of pregnant women in the United Sates consume <800 mg/day*

During the first trimester, most women do not need to consume extra calories and tend to gain between 0 to 4 lbs. You should focus on making healthy food choices. Common symptoms which may affect your eating habits are nausea, vomiting and feeling very tired. Be sure when you are feeling well that you are trying to eat healthy options. If you were active before your pregnancy, you may need to alter (i.e., reduce) how many calories you are consuming if you are not as physically active due to these common pregnancy symptoms (i.e., nausea, vomiting, and fatigue).

A weight gain of 0.5 to 1 lb per week is expected in the second and third trimester. Hunger is the greatest during this time, so focus on eating healthy foods and limiting foods without nutritional value (e.g., candy, chips, soda) which can contribute to unwanted weight gain. Caloric intake should be increased by 340 and 452 calories per day to support your pregnancy. These extra calories should be obtained by incorporating more carbohydrates and protein (i.e., fruits, veggies, whole grains, peanut butter, lean meats, eggs, etc.) in your diet. This may be nothing more than an extra peanut butter and jelly sandwich or half a sandwich and an apple.

If you are pregnant with multiples (i.e., more than 1 baby at a time), your nutritional needs are different than if you were having a single baby. Since there is an increased risk of giving birth before 37 weeks, the need for increased nutritional needs start earlier. 500-600 additional calories should be consumed to the estimated caloric needs in your first trimester or as soon as the multiple pregnancy is diagnosed. Pregnancies with multiples usually do not go to term and the goal is to maximize the weight gain early. You should consult a RDN in your first trimester to ensure you are getting enough calories to meet the nutritional requirement of your growing babies.

What foods should I be eating during pregnancy and what should I be avoiding?

Consuming the "right" foods will help control your weight and assist you with having a healthy pregnancy. You should follow the recommendations and resources provided in this guidebook for "what to consume" during your pregnancy and when breastfeeding. Following these guidelines will assist you with limiting excessive weight gain, which can make it harder after giving birth to lose the gestational weight (i.e., baby weight) and return to Navy PFA standards. Additionally, these recommendations can help to prevent complications that may occur due to unhealthy eating habits and excessive gestational weight gain.

Recommended Food and Beverages

Fruits and vegetables

- 2-4 cups per day of any type of fruits (e.g., bananas, pears, apples, oranges, berries of any kind, mangoes, grapes, melons)
- 3-4 cups per day of any type of vegetables (e.g., broccoli, spinach, brussel sprouts, tomatoes, cauliflower, squash, asparagus, potatoes, carrots, celery)
- Fresh, Frozen or Canned – fresh and frozen are best; canned foods still provide nutrients just be conscious of added sugar, salt and/or fat

- Consuming fruits and vegetables can provide key nutrients for your baby's growth and can help you control your weight
- Foods that are orange or dark green in color should be consumed daily (at least 1 serving)
- Make sure to clean fresh produce well and practice good food safety
- Fruits can help you stay hydrated

Foods high in protein

- 5-6oz (3oz is approximately the size of your palm or a deck of cards)
- Most pregnancies need up to 71 grams of protein per day
- Examples: Cooked dried beans, peas, pinto beans, soybeans, tofu, lentils, kidney beans, chickpeas or hummus, nuts, seeds, peanut butter, lean beef, chicken, lamb, turkey, pork, shrimp, crab, halibut, cod, trout, salmon and yellowfin tuna, eggs
- Protein requirements are increased during pregnancy which can be achieved by consuming 3 cups per day of dairy with the 5-6oz coming from other protein foods. If you do not consume dairy or dairy alternatives (e.g., soy), other sources of protein will need to be added to your diet. Talk to a RDN or HCP for assistance
- Following food safety rules are imperative when consuming protein foods specifically related to meats, poultry and fish. Consuming undercooked or raw meat, fish or poultry could result in illness
- Consume no more than 12oz per week of fish and shellfish that have lower concentrations of mercury (e.g., shrimp, canned light tuna, salmon, polluck, and catfish)

Dairy products

- 3 cups per day (e.g., milk, yogurt, cheese, ricotta cheese, cottage cheese)
- Dairy can provide you protein, calcium and vitamin D which helps with your baby's growth
- Look for non-dairy alternatives (e.g., soy, almond, oat, and flax milk) which have been fortified with calcium and vitamin D. Soy milk has a comparable amount of protein to regular milk; however, it is plant based instead of animal based
- Ensure you get protein from other sources, if you choose not to consume dairy products

Grains

- 5-7oz per day are recommended
- Example of serving: 1 ounce= 1 slice of bread, 1 cup of ready to eat cereal, ½ cup cooked cereal, rice, or pasta, ½ bun or small bagel or English muffin
- Food Choices: Oatmeal/ Oats, tortillas, cereals, barley, quinoa, crackers, breads, pasta or rice, wheat germ
- Whole grains (e.g., oats, barley, quinoa, brown rice) are best and should make up half of your grain servings versus refined grains (e.g., white bread, pasta and rice)

- Consuming fortified grains is an easy way to consume some key nutrients required during pregnancy (e.g., folic acid, iron, and calcium)
- Do not eliminate grains from your diet as they play an important role in your baby's development

Healthy Fats

- Required as a source of energy and for your baby's development
- Examples: olive oil and olives, nuts,avocados, canola and/or sesame oil, peanut butter or other nut butters, flaxseeŘ, sunflower, pumpkin, soymilk, tofu
- Consuming fish high in Omega-3 fatty acids (e.g., salmon, tuna, and trout) but staying within the fish and mercury consumption guidelines is recommended
- Limit animal solid fats or foods high in saturated fat (red meat, chicken with skin, whole fat dairy products, butter, lard, and tropical oils)

Beverages

- Water should be the primary source of hydration when pregnant
- Consuming 2.7 to 3 liters of fluids per day is recommended depending on activity level and ambient temperature
- If consuming juice, ensure it is 100% juice and limit yourself to no more than 1 cup or 8oz per day. Choosing a juice fortified with calcium assists with meeting key nutrient requirements
- 3 cups per day of milk and/or milk alternatives are highly recommended
- Tea (not herbal) and coffee consumption is still acceptable; however, limit yourself to no more than 2 cups per day (6-8oz each) or moderate caffeine intake of 150-300mg per day

Food and Beverages to Avoid

- Alcohol
- Herbal Teas
- Energy Drinks or beverages with excessive caffeine
- Herbal Remedies or supplements
- Raw or undercooked meats, fish, poultry, eggs, or fish
- Fish with high mercury levels (e.g., shark, swordfish, king mackeral, tile fish; limit albacore tuna to 6oz per week)
- Avoid hot dogs and lunch/deli meats; consume only if they have been heated until steaming (due to foodborne illness risk)
- Raw or unpasteurized milks and cheeses (e.g., brie, blue cheese or gorgonzala)
- Raw sprouts and unpasteurized juices
- Vitamins or other supplements other than those recommended by your HCP

There are many foods that are considered high risk if not prepared properly when pregnant. In general, being pregnant puts you at a higher risk for foodborne illness. Follow the following safety link to ensure you making your foods safe. https://foodsafety.gov/people-at-risk/pregnant-women

Common Pregnancy Issues That Can Be Treated With Good Nutrition

Morning Sickness (i.e., nausea, vomiting)

Occurs in over 70% of all pregnancies at some point due to heightened sensitivity to smells. It is most common in the first 12 weeks of pregnancy. Extreme vomiting is rare, which occurs in a very small number of pregnancies, but you should seek immediate medical care. Severe dehydration can lead to poor nutrient intake and a miscarriage if not treated appropriately.

Recommendations:

- Eat smaller portions throughout the day
- Have easy to digest foods available (e.g., crackers, pretzels, applesauce)
- Drink carbonated drinks which can help settle the stomach
- Drink ginger drinks or add ginger to your beverages which can help with nausea
- Eat foods lower in fat which also can help prevent nausea
- Consume room temperature foods
- Other recommendations include eating foods that are either: spicy, crunchy, creamy, sour, salty, or bubbly. What works for one person may not work for another
- Staying hydrated is important. Try to eat popsicles, beverages with added electrolytes or fruits with a high water content
- Add soups or soup broth to meals

Constipation

Recommendations:

- Increase water consumption in your diet. Aim for at least 10 (8oz) glasses per day.
- Increase fiber from fruits, vegetables and whole grains
- Increase your daily physical activity. If you are sitting for long periods of time, try getting up and going for a walk periodically
- Avoid high fatty foods and/or processed foods with little fiber content

Indigestion (i.e., reflux, heartburn)

Recommendations:

- Avoid spicy foods, acidic foods (e.g., oranges, tomatoes, lemons), high fat foods (e.g., fried, cream sauces, butter) to reduce problems
- Avoid caffeine
- Exercise or be active on most days

- Elevate pillow or bed
- Stop eating 2-3 hours prior to going to bed

Obesity during pregnancy

Excess weight gain can occur during pregnancy which often results in childbirth complications to include: pre-eclampsia or high blood pressure, gestational diabetes, pre-term birth and/or increase risk for having birth injury such as cerebral palsy or neonatal distress or birth defects. You should focus on not exceeding the recommended weight gain listed in this guide to ensure you and your baby's health.

Recommendations:

- Try to eat the recommended foods provided in this guidebook
- Meal plan
- Be physically active
- Limit and avoid foods high in sugar and fat that have limited or no nutritional value
- Be mindful of what you drink. Consume more water than juices, soda or other high caloric beverages
- Remember that cravings are normal, but limit yourself to a few bites of something versus a whole container or bag
- Seek out support if you need help with weight gain and meal planning from your HCP, obstetric provider and/or RDN

Postpartum, Breastfeeding & Lactation Nutrition

Key Recommendations

You should continue to take your daily prenatal vitamin and eat a healthy diet consisting of fruits, vegetables, whole grains, lean proteins, and dairy.

Breastfeeding is recommended for optimal health and nutrition during the first 6 months of your baby's life. Continuing to breastfeed up to and beyond your baby's first year, can have beneficial impact if you are able to and choose to do so. Your breastmilk is the best source of nutrition for your baby and cow's milk may NOT be introduced until your baby is at least 1 year old. Baby formula is a great alternative to breastfeeding if you are unable to breastfeed or choose not to. Supplementing your breastmilk with formula is another good option which provides your baby with the best nutrition available, especially if you are having issues breastfeeding or with milk supply.

If you are breastfeeding, your caloric intake will require between 300 to 500 additional calories per day. The calorie amount will depend on how frequently and how much breastmilk your baby is consuming. As your baby is introduced to regular food (i.e., solids) or receives other supplements (i.e., formula), they will consume less breastmilk. This will reduce your milk supply and lower the amount of extra calories you need to consume.

Ensure you are drinking enough fluids, as dehydration or poor fluid consumption can lead to inadequate breastmilk production. Make sure you have snacks and plenty of fluids available to you

throughout the day. This will ensure you get enough calories and stay hydrated so that you are able to pump enough milk for your child while you are at work.

PUMPING AT WORK TIPS

1. Tricare covers breast pumps and breastfeeding supplies for beneficiaries. You can obtain a prescription for their pumps. You can either order a breast pumps from a DME (Durable Medical Equipment) service at no cost or purchase a breast pump and get reimbursed. Contact Tricare for further details or go to their website.
2. Commanding Officers are required to develop a command breastfeeding policy, provide private clean rooms (not a restroom) with access to running water and refrigeration for breast milk storage. Refer to the policy resource section at the end of this guide for further information.
3. Free door hangers are available to hang on your workspace door at the following website: www.mom2momglobal.org

General Postpartum Weight Loss Tips

- Set realistic goals for weight loss especially when you are busy caring for a newborn
- Eat nutrient dense foods which will provide you with energy (e.g., fruits, veggies, whole grains and lean proteins)
- Be mindful of serving size so you don't overeat. Keeping a daily food diary and creating a meal plan have been shown to be effective. Having a schedule for when you eat is just as important as your baby's feeding schedule
- Try to eat some healthy protein (e.g., yogurt, cottage cheese, nuts) with each meal to help you feel full
- Keep healthy snacks available so when you are hungry, you have a healthy option on hand
- Avoid foods with added sugar and refined carbs. They can add unwanted calories in your diet
- Exercise can assist with weight loss and has added mental health benefits (i.e., reduces stress, improves mood, improves sleep)
- Having a newborn is tiring and causes stress. Unfortunately, both lack of sleep and stress can negatively impact your weight loss goals. Try to get some sleep when the baby sleeps. Pre-planning meals and activities around the baby's schedule may also help to reduce some of your stress
- If you are struggling with your weight, reach out to your HCP and/or RDN for professional assistance. They will be able to evaluate you and create a personalized plan to help you achieve your goals

Special Considerations for Weight Loss During Breastfeeding

- Breastfeeding can help you return back to your pre-pregnancy weight; however, it may take up to a year to lose all the weight you have gained
- Wait at least 6-8 weeks after giving birth to start trying to lose weight. Your body needs this time to recover from childbirth and establish a good milk supply

- Gradual weight loss, of no more than 4-5 lb/month, is recommended for most individuals that are breastfeeding. However, some women may only lose 1-2lb per month
- Not eating enough food (i.e., not consuming enough calories) and/or not drinking enough fluids can reduce milk production
- Do not participate in any fad or crash diets that may disrupt your milk supply and could cause nutrient deficiencies. Food intake impacts your mental health and nutrient deficiencies
- In general, breastfeeding moms should consume at least 1800-2200 calories per day and can safely lose around 1lb per week. If you are exercising regularly, you may need to consume more calories than prescribed above. For more individualized plans, please consult a RDN

Additional Resources

The names of exercises included within this guidebook are commonly used. Many of these exercises can be found within the Navy Operational Fitness and Fueling Series (NOFFS) app which contains an extensive photo and video library demonstrating how to correctly perform these exercises. For those exercises not included within the NOFFS app, please use your browser to search (by exercise name) for descriptions, photos, and videos for how to correctly perform exercises with which you are not familiar. MWR Fitness professionals are another valuable resource for assisting you with proper technique on unfamiliar exercises.

Policy Resources

RESOURCE	WEBSITE	DESCRIPTION
BUMED Instruction 6000.14B, Support of Women in Lactation and Breastfeeding	https://www.med.navy.mil/directives/ExternalDirectives/6000.14B.pdf	Provides policy guidance for support of women in lactation and breastfeeding and various breastfeeding support resources
Navy Office of Women's Policy (Parenthood and Pregnancy)	https://www.mynavyhr.navy.mil/Support-Services/Culture-Resilience/Parenthood-Pregnancy/Policies/	Provides links to DoD and Navy policies and instructions which impact pregnant and postpartum Servicemembers
Navy Physical Readiness Program Office	https://www.mynavyhr.navy.mil/Support-Services/Culture-Resilience/Physical-Readiness/	Provides Navy Physical Readiness policy: OPNAVINST 6110.1(Series), Guides, NAVADMINs

Physical Readiness Program Guide 8: Managing PFA Records for Pregnant Servicewomen	https://www.mynavyhr.navy.mil/Support-Services/Culture-Resilience/Physical-Readiness/Guides/	Provides Physical Readiness Program policies regarding pregnant and postpartum Servicewomen

General Navy Resources

RESOURCE	WEBSITE	DESCRIPTION
Navy Medicine Office of Women's Health, Postpartum Return to Duty Transition Guide	https://www.med.navy.mil/sites/nmcphc/health-promotion/womenshealth/Documents/Pregnancy_and_Postpartum/Postpartum_Return_to_Duty_Transition_Guide_Print_vF.pdf	Provides Navy policy guidance and resources during the postpartum period for Servicewomen as well as practical information regarding various physical and mental health issues.
Navy Marine Corps Public Health Center, Women's Health and Readiness Website	https://www.med.navy.mil/sites/nmcphc/health-promotion/womens-health/Pages/default.aspx	Provides a one-stop shop for resources for Servicewomen on a multitude of health topics to include: contraception, general women's health, pregnancy/postpartum, deployment, menstrual management, nutrition
Fleet and Family Support Program Resources	https://www.cnic.navy.mil/ffr/family_readiness/fleet_and_family_support_program.html	Provides Navy Family Readiness programs that support work and family life as well as counseling, advocacy and prevention programs.

Mobile Applications: available at no cost from your smartphone's app store

RESOURCE	DESCRIPTION
Official Navy PFA App	The app provides a one-stop shop for all Physical Readiness Program information. Features include: the physical readiness program instruction OPNAVINST 6110.1 (series), guides, associated NAVADMINS and a mobile PFA calculator that combines the capabilities of all calculators found in the Official Navy PRIMS (Physical Readiness Information Management System).

Navy Pregnancy and Parenthood App	Helps Servicemembers understand the personal and professional responsibilities that come with parenthood while serving in the Navy. This app also captures pertinent regulations, instructions, benefits and references from a variety of sources in one easy-to-use app.
Navy Operational Fitness and Fueling Series (NOFFS) App	This app provides exercise programming designed to replicate the activities Sailors conduct in their operational duties: lifting, pushing, pulling, and carrying. This resource also includes injury prevention stretches, nutritional guidance, and an extensive video library for how to conduct various exercises.

Nutrition: Pre-Pregnancy Resources

RESOURCE	WEBSITE	DESCRIPTION
My Plate	www.choosemyplate.gov	Provides basic nutrition guidance on how to eat healthy.
USDA Lifecycle Nutrition	https://www.nal.usda.gov/fnic/preconception-nutrition	Nutrition information for all stages of pregnancy and breastfeeding.
National Institute of Health	https://www.nhlbi.nih.gov/health-topics/dash-eating-plan	Provides information on healthy eating specifically on the DASH diet.

Nutrition: Pregnancy Resources

NAME	WEBSITE	DESCRIPTION
CDC	https://www.cdc.gov/pregnancy/index.html	The CDC's website provides pregnancy information from pre to post-pregnancy for all populations. The information is also available in Spanish and English.
Military Once Source	www.militaryonesource.mil/family or call 800-342-9647	Military resource that provides access to pregnancy programs and other resources.
My Plate	https://www.myplate.gov/life-stages/pregnancy-and-breastfeeding	Healthy eating website.
NICHD	https://www.nichd.nih.gov/ncmhep/initiatives/pregnancy-for-every-body	This is an initiative by NICHD's for plus-size

		pregnancy care. However, it has resources and information for every body size and most of the information is available in Spanish and English.
Office of Dietary Supplement (ODS)	https://ods.od.nih.gov/factsheets/Folate-Consumer/ https://ods.od.nih.gov/factsheets/Iron-Consumer/	The ODS provides a fact sheets on folate and iron for consumers, which are available in Spanish and English.
USDA Lifecycle Nutrition	https://www.nal.usda.gov/fnic/nutrition-during-pregnancy	Nutrition information on breastfeeding.
Women Infants and Children (WIC):	https://wicworks.fns.usda.gov/resources	Resources and nutrition information for women, infants and children. Resource can provide food to some families.
USDA 2020 -2025 Dietary Guidelines Resources	https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf	Guidelines for pregnancy and breastfeeding and nutrition that were updated.
Obstetrics & Gynecological Site	https://www.acog.org/search#q=nutrition%20during%20pregnancy&sort=relevancy	Nutrition information on approved resource.

Breastfeeding and Lactation Resources

NAME		
Academy of Nutrition and Dietetics	https://www.eatright.org/health/pregnancy/breast-feeding/breastfeeding-and-the-athlete	Breastfeeding and nutrition resource.
Breastfeeding in Combat Boots	https://www.mom2momglobal.org	Provides information for military moms and breastfeeding.

My Plate	https://www.myplate.gov/life-stages/pregnancy-and-breastfeeding	Basic pregnancy and breastfeeding nutrition resource.
USDA Lifecycle and Nutrition	https://www.nal.usda.gov/fnic/nutrition-during-lactation	Breastfeeding and lactation nutrition resource.
USDA 2020 Dietary Guidelines Resources	https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf	Guidelines for breastfeeding and pregnancy both.
La Leche League	https://www.llli.org/breastfeeding-info/weight-loss-mother	Weight loss and pregnancy also breastfeeding approved resource.

DISCLAIMER

Content referenced through non-federal links are provided as a matter of common interest and not intended as an endorsement. Any mention of commercial services or applications is provided as a matter of common interest and is not intended as an endorsement.

GLOSSARY

Body Mass Index (BMI) - is calculated by dividing a person's weight in kilograms by the square of their height in meters. BMI screens are used to categorize weight ranges for a particular height. It can help identify if you are underweight, normal weight, overweight or obese prior to getting pregnant which will help determine the amount of weight you should gain during pregnancy. https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi-m.htm

Calorie - a unit of energy in food; also abbreviated as kilocalorie or kcal

Cesarean Delivery/Birth (C-section) – delivery of a baby through surgical incisions in the abdomen and uterus.

Complications – diseases or conditions that occur as a result of another disease or condition.

Constipation – a condition in which there is difficulty in emptying the bowels usually associated with hardened feces; infrequent passage of stool.

Conceive - to become pregnant with child.

Contraindication(s) – a symptom or medical conditions that occur as a result of another disease or condition.

Diastasis – the separation of normally joined parts.

Diastasis Recti – the partial or complete separation of the rectus abdominis, or "six-pack" muscles, along the midline of the abdomen typically seen in women during and after pregnancy.

Dynamic Stretching – stretching performed before starting a workout that involves active movements which help to warm-up and prepare muscles for exercise.

Fatigue – extreme tiredness resulting from mental or physical exertion or illness.

Gestation – the process of carrying or being carried in the womb between conception and birth.

Gestational Diabetes Mellitus – diabetes that arises during pregnancy.

Gestational Weight Gain – the amount of weight gained between conception and just before the birth of an infant.

Gram - refers to the unit of mass or amount equal to one thousandth of a kilogram; abbreviated as g or gm.

Health Care Provider – an appropriately credentialed medical officer, nurse practitioner, independent duty corpsman, physician assistant, or certified nurse midwife.

Indigestion - also known as reflux or heart burn. A burning pain or discomfort in the upper or mid chest, possibly involving the neck and throat, that can worsen when lying flat or down. Can be caused by consuming spicy, high fat or fried food, overeating, wearing tight clothing, and pregnancy.

Kegel Exercises – pelvic floor muscle exercises intended to help prevent or control urinary incontinence and other pelvic floor issues.

Lactation: Secretion of milk from the mammary glands.

Ligaments – a short band of tough, flexible connective tissue which connects two bone or cartilages or holds together a joint.

Microgram - refers to a unit of mass equal to a millionth of a gram; abbreviated as mcg.

Muscular Endurance – the ability of a muscle or group of muscles to perform repetitive contractions again a force for an extended period of time.

Muscular Strength – the amount of force a muscle can produce with a single maximal effort.

Neural Tube Defects – severe birth defects of the brain, spine or spinal cord.

Operative Vaginal Delivery – a vaginal delivery that is assisted by the use of forceps or a vacuum extractor.

Pelvic Floor – composed of muscles that span the bottom of the pelvis and support the pelvic organs (bladder, intestines, uterus); dysfunction can create problems with bladder and bowel control.

Postpartum Depression – depression suffered by a mother following childbirth, typically arising from the combination of hormonal changes, psychological adjustment to motherhood, and fatigue.

Postpartum Period – the state or period immediately following the birth event as the mother's body returns to a non-pregnant state.

Powerlifting – involves resistance exercises to lift the maximum amount of weight, as fast as possible; the ability to exert force in the shortest period of time.

Preconception - refers to pre-pregnancy or before pregnancy. It is the time period during which someone is trying to conceive or have a baby.

Preeclampsia – a disorder that may occur during pregnancy or after the birth event in which the mother has high blood pressure and other signs of organ injury, such as abnormal amount of protein in the urine, low number of platelets, abnormal kidney or liver function, pain over the upper abdomen, fluid in the lungs, or severe headache or vision changes.

Prone – lying flat on the stomach with the face downwards.

Pubococcygeus – a hammock-like muscle that stretches from the pubic bone to the tail bone forming the pelvic floor and supporting the pelvic organs; muscle that is used to perform Kegel exercises.

Rate of Perceived Exertion – a scale which measures the perceived intensity level of a physical activity; used to estimate how hard a task is and what effort that task requires.

Rectus Abdominis – a large muscle in the front of the abdomen that assists in the regular breathing movement, supports the muscles of the spine while lifting, and keeping abdominal organs in place; typically referred to as the "six-pack" abdominal muscles.

Registered Dietitian Nutritionist (RD or RDN) - a Navy health professional that has a degree and is recognized as a nutrition expert; credentialed with the commission of dietetics. Often located in military treatment facilities or hospitals.

Relaxin – a hormone produced by the placenta during pregnancy which relaxes ligaments in preparation for childbirth.

Static Stretching – stretching performed at the end of a workout which involves stretches that are held in place for a period of time without movement; intended to improve joint range of movement and flexibility.

Supine – lying on the back with the face upwards.

Transverse Abdominis – is a muscle layer located on the front and sides of the abdomen, and deeper than all the other abdominal muscles which helps to compress the abdominal cavity and stabilize the back and core.

Urinary Incontinence – loss of bladder control, varying from a slight loss of urine after sneezing, coughing, or laughing to complete inability to control urination.

Valsalva Maneuver – a forceful attempt at expiration when the airway is closed that is frequently used during powerlifting to stabilize the trunk to generate maximal force.

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