

PEP305  
Handout  
Materials  
Part I

# Teaching Methods: Walk Programs

- Program:** Walk
- Objective:** Easy-to-follow physical activity; very little formalized choreography  
Great for "on-the-spot" need for a workout
- Movement:** Group walks in a circle  
Make sure walk clockwise and counter-clockwise
- Usage:** Special populations (elderly, obese physical limited, pre & post-natal)  
Athletic populations (with varying intensity)  
Co-educational groups as a movement mixer, general population
- Facility/Equip:** Larger room is better, but not necessary; no extra equipment needed
- Modifications:**
1. Establish speed lanes
  2. Change strides
  3. Vary the intensity of the walking: Spontaneously (i.e., fartlek training)
  4. Create an interval walking workout (intensity specific to fitness level)
  5. May add an in-place march facing center
  6. May add walk in and out of circle
  7. Add free-style aerobics periodically: facing center
  8. Have students lead free-style aerobics
  9. Add a formal rhythmic warm-up to it: facing center
  10. What about walking with arm variations?
- Class Name:** No-Sweat Workout  
Express Walk  
Lunch Hour Walk  
Walk-It-Out
- Music:** Instructor's choice: Use of theme is excellent  
May choose multiple themes
- Tempo:** From 124 - 156  
124 - 135 beats per minute is enjoyable for many
- Instructor Notes:** Walk with group to get direction  
Walk opposite direction for better eye contact with students and for feedback  
Cuing is simple; much of this class is follow
- Example Cues:** March in place, let's walk, faster, slower, bigger strides, use your arms, swing your arms, other direction, face center, walk center, walk back



*Dr. Kravitz, How about calling it the sandwich workout?*

## Teaching Methods: More Walking Programs

- Program:** Walking Patterns
- Objective:** Easy-to-follow physical activity; very little formalized choreography
- Movement:** All walking patterns, some freestyle choreography mixed in
- Usage:** Special populations (elderly, obese physical limited, pre & post-natal)  
Athletic populations! and highly fit groups do well with these patterns  
Co-educational groups and general population
- Facility/Equip:** Larger room is better, but not necessary; no extra equipment needed
- Patterns:**
- I. Double circles
    - A. Start from one big circle
    - B. Create 2 circles by traveling down the center of room in 2 lines:
      1. Modifications: zig zag small, zig zag big, variation in strides, add leaps, add knee lifts, change direction (face in, face out, walk backward): Note usually only do this down center
    - C. Good idea to pick some good movement leaders for this program and explain to them in advance what they will be doing
    - D. Instructor needs to demonstrate each movement in front of the leaders
  - II. Two lines
    - A. Split class in two lines on either side of room
    - B. Great to add simple free-style aerobics when in lines
    - C. On instructor cue to cross over, lines cross over to other side
      1. May wish to have them cross over 2 times
  - III. Four sides of room
    - A. Have entire group face "the front of the class"
    - B. Only pattern that needs to be on the beat to work well!!
    - C. Main pattern: 8 walks. fr. & 8 walks bk, 1/4 TURN 8 walks for 8 walks bk, 8 walks. fr. & 8 walks bk, 8 walks. fr. & 8 walks bk
    - D. When facing the room can add vertical aerobics (add-on style)
      1. All in cts of 8
      2. After each 8 count the group turns 1/4 turn
    - E. Each time the group reaches front of the class the instructor needs to be ready to give and show the movement cue
  - IV. Power Lines
    - A. Put class in columns
    - B. Each column turns at front of room and walks to back, turns again and returns to front of class (be careful who your leaders are)
    - C. Can add aerobics when group is facing front
    - D. May also do a number of different repetition walks (1,2 3 or more)
- Class Name:** Patterns Workout, Power Patterns, Dynamic Pattern Aerobics
- Music:** Instructor's choice: Use of theme is excellent  
May choose multiple themes
- Tempo:** From 124 - 156 is very adequate
- Instructor Notes:** All of these patterns require good group management
- Example Cues:** March in place, face center, face wall, face mirror, walk, faster, slower, hold-up  
Cues are very directional cues for these patterns

# Teaching Methods: 'Fusion' Cardio Kick-Boxing Class

- Program:** Power Lines with Cardio Kick-Boxing skills
- Objective:** Very little formalized choreography: Add-on technique with skills
- Movement:** Power lines (column technique) with kick-boxing skills  
Can also do this program in a circle format
- Usage:** With appropriate modifications: Special populations (elderly, obese, physically limited). Athletic populations and highly fit groups do well with this program.  
Good with co-educational groups and general population
- Facility/Equip:** Larger room is better; no extra equipment needed
- Workout Design**
- I. Power Lines
    - A. Put class in columns
    - B. Each column turns at front of room and walks to back, turns again and returns to front of class (be careful who your leaders are)
    - C. Add kick-boxing moves while class is facing front
    - D. May also do a number of different repetition walks (1,2 3 or more)
- List of sample kick-boxing moves:
- Jab
  - Hooks
  - Upper Cuts
  - Elbow Strike
  - Double Jab
  - Flury
  - Side Lunge/Step—Kick
  - Squat Knee
  - Knee front and back
  - In and out of circle
  - Power Stride Punch
  - Boxer shuffle
  - Power Stride (upper cut)
- Class Name:** Power Kick-Boxing, Kick-Box Extreme, Dynamic Kick-Boxing
- Music:** Instructor's choice: Use as a theme class is excellent  
May choose multiple themes
- Tempo:** From 124 - 156 is very adequate
- Instructor Notes:** Once group understands power lines, this is an easy-to-follow class
- Example Cues:** Use the terms as cues: jab, hooks, upper cuts, elbow strike
- Safety Note:** Tendency to punch to hard. Show students how to use power but not injure joints with punches.

# Compulsory Warm-up (General Phase)

## Section 1. (Combo I)

32 cts March only

## Section 2. (Combo II)

16 cts March with bilateral arm punch (or push) forward

16 cts March with bilateral arm punch (or push) side

16 cts March with bilateral arm punch (or push) overhead

16 cts March with bilateral arm fly movement

## Section 3. (Repeat Combo II)

16 cts March with bilateral arm punch (or push) forward

16 cts March with bilateral arm punch (or push) side

16 cts March with bilateral arm punch (or push) overhead

16 cts March with bilateral arm fly movement.

## Section 4. (Repeat Combo I)

32 cts March

## Section 5 (Combo III)

32 cts Step touch only

## Section 6. (Combo IV: Note, Still in a step touch)

16 cts Step touch with bilateral arm punch (or push) forward

16 cts Step touch with bilateral arm punch (or push) side

16 cts Step touch with bilateral arm punch (or push) overhead

16 cts Step touch with bilateral arm fly movement

## Section 7. (Repeat Combo IV: Still in a step touch)

16 cts Step touch with bilateral arm punch (or push) forward

16 cts Step touch with bilateral arm punch (or push) side

16 cts Step touch with bilateral arm punch (or push) overhead

16 cts Step touch with bilateral arm fly movement

## Section 8. (Repeat Combo III)

32 cts Step touch only

## Section 9. (Repeat Combo I)

32 cts March only

## **D y n a m i c J o i n t I s o l a t i o n s**

32 cts Neck rotation; neck flexion/extension

16 cts Shoulder rolls backward

16 cts Shoulders rolls forward

32 cts Lateral spinal reach

32 cts Spinal rotation

32 cts Side-to-side lunges

32 cts Ankle (one side): heel lift

32 cts Ankle (other side): heel lift

### Benefits of an Effective Warm-up Len Kravitz, Ph.D. Teaching Methods

- ◆ Increase in body temperature
- ◆ Gradual increase in heart rate, stroke volume, blood flow, and breathing rate
- ◆ Gradual redistribution of blood flow to working muscles
- ◆ An increased rate of oxygen exchange between blood and muscles
- ◆ Increase in metabolism of carbohydrates and fats

### Benefits of Effective Warm-up cont.

- ◆ Faster transmission of nerve impulses
- ◆ Increase in force and speed of muscular contraction
- ◆ Increases secretion of synovial fluid in joints
- ◆ Decreased risk of acute injuries of soft tissues
- ◆ Increases perceived energy level of students

### Biological Systems at Work

Cardiorespiratory System



Neuromuscular System



Metabolic Pathways

### The Warm-up Case for Safety

- ◆ Warmed-up muscle has more elasticity
- ◆ Colder muscles more likely to be injured
- ◆ Increase in synovial fluid adds an anatomical shock absorber to weight bearing joints
- ◆ Abrupt exercise has been shown to lead to heart arrhythmias and an abnormal increase in blood pressure

### (No) Stretching in the Warm-up

- ◆ Was once the standard
- ◆ Group-led exercise has removed
  - Warm-up includes a dynamic muscle-joint isolations phase
  - Stretching is a muscle lengthening technique
- ◆ Stretching is most optimal after a workout when increase of about 4 degrees Fahrenheit
  - Typically a warm-up may increase core temperature 1 to 2 degrees

### Three Key Warm-up Components

1. Rehearsal Moves
  - Less intense identical movements of workout phase
  - Analogy: SAID principle
    - ↳ Specific Adaptations to Imposed Demands
2. Full-Body Movements
  - Not identical movements to workout phase
  - Purpose to engage the major muscles
    - ↳ Example: use of rhythmic squats or lunges

### Three Key Warm-up Components cont.

#### 3. Dynamic joint isolations

- Range of motion activities involving contraction of agonist and antagonist muscles around a joint



### Phases of Warm-up: Cardio Exercise

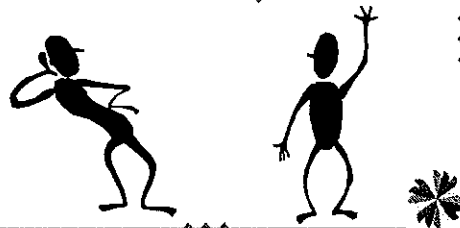
1. General, core temperature warm-up (rehearsal and full-body movements)
2. Musculoskeletal warm-up (dynamic joint isolations done rhythmically)
3. Pre-cardio warm-up, if aerobic activity follows (rehearsal moves at a gradually increasing intensity)

### Phases of Warm-up: Resistance Exercise

1. General, core temperature warm-up (full-body movements such as cycling, walking, jogging, etc)
2. Musculoskeletal warm-up (dynamic joint isolations done with light to moderate resistance: light set before a submaximal or maximal exertion)

### Pit Falls to Avoid in Group Exercise Warm-up

- ◆ Staying in one spot the majority of the time
- ◆ Avoid nonfunctional bodily movements



### How Long Should the Warm-up Be?

- ◆ No one really knows? ~3 to 10 minutes
- ◆ Generally speaking:
  - The higher the intensity of the workout
    - ↳ Longer warm-up needed
  - The older the students
    - ↳ Longer warm-up is needed
  - Intense enough to increase body temperature, but not so strenuous to cause fatigue

### The Warm-up Case for Weight Management

- ◆ Increase in metabolism of carbohydrates and fats will continue through the rest of the workout
- ◆ Less production of lactate will increase energy output potential

# Circuit Training

Len Kravitz, Ph.D.

Circuit training was developed by R.E. Morgan and G.T. Anderson in 1953 at the University of Leeds in England (Sorani, 1966) . The term circuit refers to a number of carefully selected exercises arranged consecutively. In the original format, 9 to 12 stations comprised the circuit. This number may vary according to the design of the program. Each participant moves from one station to the next with little (15 to 30 seconds) or no rest, performing a 15- to 45-second (or more) workout of 8 to 20 repetitions (or more) at each station (using a resistance of about 40% to 60% of one-repetition maximum). The program may be performed with exercise machines, hand-held weights, elastic resistance, calisthenics or any combination.

By adding a 30-second to 3-minute (or longer) aerobics station between each station, referred to as aerobic circuit training, the method attempts to improve cardiorespiratory endurance as well (although this has not been conclusively supported in experimental research). Variations of this aerobic circuit training model include performing 2, 3, 4 or more exercise stations in series, and then performing the aerobics station.

## Benefits of Circuit Training

Numerous investigations have been completed measuring the physiological benefits of circuit weight training. Circuit weight training has been shown to increase muscular strength from 7% to 32% while decreasing the percent of fat from 0.8% to 2.9% (Gettman & Pollock, 1981). Gettman and Pollock's review of the literature also showed an increase of fat-free weight (1 to 3.2 kg) with no subsequent change in body weight. Kilocalorie expenditure has been estimated to be approximately 5 - 6 kcal per minute for women and 8 - 9 kcal per minute for men (Hempel & Wells, 1985; Wilmore, Parr, & Ward, 1978). In terms of cardiovascular function, studies have shown little to mild improvement in aerobic capacity (5% to 9.5%) from participation in circuit weight training as compared to other aerobic modalities (5% to 25%) (Kass & Castriotta, 1994; Peterson, Miller, Quinney, & Wenger, 1988). Kass and Castriotta support the contention that the mild increases in aerobic capacity are due primarily to increases in fat-free mass from the circuit weight training, and not changes from the main factors affecting aerobic capacity: cardiac output (heart rate x stroke volume) or arterial-venous oxygen difference (exchange of oxygen and carbon dioxide at the cellular level).

Traditionally, individuals with cardiovascular disease and hypertension have been discouraged from performing any type of resistance exercise. However, circuit training performed at a moderate intensity (40% of repetition maximum) in cardiac patients has demonstrated significant increases in strength (13% to 40%), with no cardiac or orthopedic complications (Kelemen et al., 1986; Stewart, Mason, & Kelemen, 1988) . Furthermore, circuit weight training does not appear to elevate resting blood pressure or heart rate, and may beneficially lower resting diastolic blood pressure in borderline hypertensives (Harris & Holly, 1987).

Very little information is available on the psychological benefits of participation in circuit weight training. However, with law enforcement officers positive changes in mood, anxiety, depression and hostility have been observed (Norvell & Belles, 1993).



# Teaching the Link

A, A + B, A + B + C, A + B + C + D, A + B + C + D + E

## Link 1

A March

B Step side kick

C Double hop combination

D Double travel to side

E Knee Lift

## Link 2

A Step touch

B Basketball shuffle

C Low- or high-impact jacks

D Power Strides

E Karate kicks

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# Medicine Ball Function Circuit

1. Lunges Side to Side
  - a. Side to Side exchange of ball (8 rep)
  - b. Press ball forward and back into chest (8 rep)
  - c. Press ball overhead (8 rep)
2. Squat
  - a. Press ball forward and back into chest (release ball on way into chest) (8 rep)
  - b. Biceps curl with squat (bilateral and unilateral) (8 rep)
3. Single Arm Shoulder Press
  - a. With and without other arm helping (8 rep)
4. Jog with ball
  - a. Hold into chest and jog
  - b. Hold over head and jog
5. Sumo Jumps and Upper Body Figure '8s'
  - a. Two sumo jumps with ball held low (arm extended)
  - b. Four figure 8 patterns with ball in Wide stance
  - c. Four overhead throws
6. Stationary lunges with Triceps Extension (8 rep) [Change lunge]
7. Squat Position: "Tree Combination"
  - a. Start with medicine ball in chest
  - b. Press overhead and back down
  - c. Reach to the side and lunge to the side
  - d. Repeat: reaching and lunging to other side
8. Shuffle toss with partner--in same direction and opposite direction
9. Seated Position Abdominals
  - a. Figure 8 with arms (8 rep)
  - b. Feet on and off the floor (note, feet off floor may be stressful for some individuals with back problems--advise them to keep feet on floor)
10. Partner Catch for Abs
  - a. One person seated on floor
  - b. Toss medicine ball center, side, other side
  - c. Seated person throws back ball (16 throws) Change positions
11. You and your partner create a Floor Medicine Ball Station
12. You and your partner create a Standing Medicine Ball Station

Compulsory Step Routine  
Practical Test

A	March on ground	32 cts
B	Basic lead (8x)	32 cts
	Basic lead other leg (8x)	32 cts
C	Alternating lead (8x)	32 cts
D	Turn step (8x)	32 cts
E	Abduction/turn step (4x)	32 cts
F	Alternating knee lift (8x)	32 cts
G	Repeater knee lift (4x)	32 cts
H	V Step (4x on one side)	16 cts
	V Step (4x on other side)	16 cts
I	T Step (4x)	32 cts
	Finish marching in place on ground	

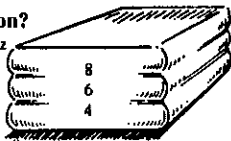
# STEP SAFETY

## STEP BITS

### Step Height Question?

Research directed by Len Kravitz at San Jose State University substantiated that an 8 inch high step significantly improves cardiorespiratory endurance.

Increasing the step height (above 8 inches) may add more challenge, but it also changes other variables including posture, knee stability and lower limb risk. The recommendation to avoid knee flexion approaching 90 degrees with your step height is a conservative guideline that is easy to follow.



### Balance the Hip Extensors and Flexors

The repetitive stepping action of step training can potentially create a muscular imbalance favoring the hip flexors. This could lead to lower-back stress due to the line of pull that the hip flexors apply on the thoracic spine. Make sure you do a number of leghip extensor movements with an extended leg. Stand tall on the platform and extend the lifting leg back, not up.



### Warm-Up Strategy

Begin with an active warm-up off the bench, similar to an aerobics class. Transition to some platform stepping drills to prepare the students for the stepping patterns in the workout. Then proceed to a muscle/joint preparation that specifically includes achilles, gastrocnemius and hip flexor range of motion stretches.

### Calf Controversy

Avoid overstretching the calf muscle in the warm-up. Do not stand on the platform and press the heels to their furthest point. There is a risk you may stretch too far, causing undue muscle soreness. This stretch is much more appropriate at the end of the workout.



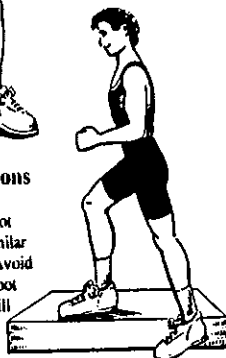
### Always Cool-Down

As with any type of physical activity, the cool-down phase is an important workout component to help promote physiological recovery, psychological relaxation, and the prevention of delayed-onset muscle soreness. The major muscles that need to be stretched are the soleus, gastrocnemius, quadriceps, hamstrings, gluteus maximus, and torso.



### Step-Out Squats

The key to this great thigh and buttocks exercise is to squat down with the body weight evenly balanced within the legs. Keep the knees over the ankles.



### Straddle-Up Combinations

When stepping up from a straddle-down, place the lead foot slightly forward of the body, similar to normal stepping technique. Avoid the tendency to place the lead foot directly under the hips. This will cause the knee to protrude (unsafely) forward.

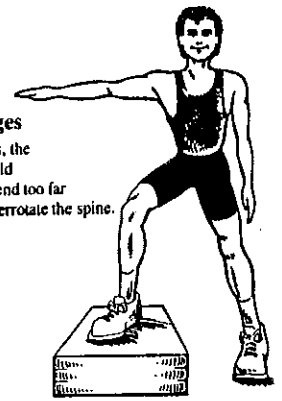
## 20 Step Training Tips to Success

1. Make sure you step entirely on the top part of the platform with your entire foot, not allowing any part of your foot to hang over the edge.
2. Start with a 4" or 6" height. Don't rush to raise the height of the bench. Most people find the 8" height to provide a satisfactory workout.
3. Adding hand-held weights (up to 5 lbs) changes your arm choreography to slow, controlled, nonrotational, shorter-lever movements.
4. To decrease your intensity, lower your bench or stop stepping and march in place.
5. Use a good step shoe or cross-training shoe for your workout. The tread on some running shoes does not provide suitable freedom of movement and support on some platforms.
6. Step quietly onto and off of the platform. Avoid pounding your feet on the ground and platform. Also, try not to step with a bounce, as this causes you to remain on the balls of your feet.
7. Remember not to lock your knees on the descending phase of the step pattern.
8. Avoid any movements that travel forward and down off the bench.
9. Drink plenty of water before, during, and after your step workout. Because you are using so many large muscle groups as you step, you may notice yourself perspiring more.
10. Be aware of the potential for overuse injury syndrome. Many people will enjoy the variety and uniqueness of step training so much that they will discontinue their other physical activities. Doing a variety of exercise programs, what we call cross-training, lessens the stress on many specific body parts, and still allows you to place a lot of demands on your body.
11. If you feel any discomfort underneath or around the knee you need to stop. See your health practitioner. Bench stepping may not be the best activity for you.
12. Always watch your platform when stepping, but make sure not to drop your head forward. Keep the step in full view as you train.
13. Be careful of overusing the lunge skills. They can cause you to lean too far forward, stressing your lower back, and they can place extra joint trauma on the lower leg with ground impact.
14. Do not step backward onto the step.
15. When stepping, lift more with the loaded leg that is being placed onto the bench as opposed to pushing off the extended leg on the ground.
16. As you step onto the platform allow your body to do a slight full body lean. Be careful not to just bend forward at the hips, as this may be stressful on your back.
17. Occasionally vary your step height in workouts to accommodate the body's periodization process of overloading and recovering.
18. Do no more than 5 repeater moves on one leg at a time. Also, regularly switch your leading leg while step training.
19. Be aware of the signs of overexertion: breathlessness, dizziness, tightness or pain in the chest, loss of muscle control, and nausea. If you experience any of these signs, stop immediately. See your physician to determine the cause.
20. Restraint is the key word for special populations including obese, pregnant, and seniors. Being obese and pregnant may impair a person's kinesthetic awareness, resulting in a loss of balance. Step height, movement speed, frequency of training, and duration of training need to be thoroughly considered for these populations.



### Side-to-Side Lunges

With side-to-side lunges, the hips and shoulders should face forward. Do not bend too far forward at the hip or overrotate the spine.



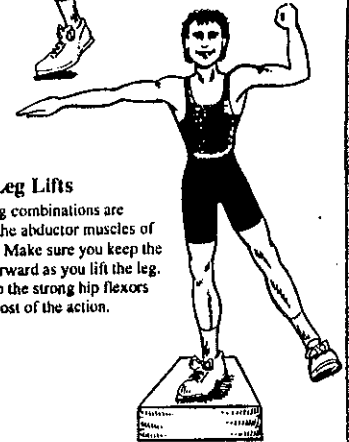
### Step-Back Lunges

Keep the body weight predominantly over the platform leg. Hold your torso up, not dropping forward at the hip. The leg reaching back should make floor contact with a slightly flexed knee and with the heel off the ground.



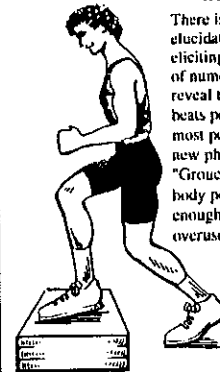
### Side Leg Lifts

Side leg lifting combinations are excellent for the abductor muscles of the outer leg. Make sure you keep the toes facing forward as you lift the leg. This will keep the strong hip flexors from doing most of the action.



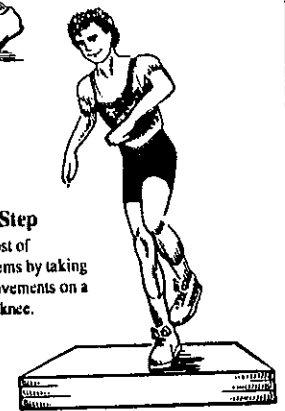
### "Groucho Marx Stepping"

There is no documented research that elucidates the most appropriate tempos for eliciting a cardiorespiratory effect. Surveys of numerous instructors around the country reveal that music speeds from 118 to 126 beats per minute are safe and common for most people. Faster tempos have created a new phenomenon belittlingly called, "Groucho Marx Stepping." This "crouched" body position never gives the knee and hips enough time to extend, which could lead to overuse problems.



### Turns on the Step

You can avoid a host of knee-related problems by taking out all pivoting movements on a loaded (weighted) knee.



# Push-Up and Step Back Lunge

Push-up Primary movers: pectorals, anterior deltoid; Joint Motion: horizontal flexion  
Performance Techniques (shoulder girdle and spinal stabilization)  
Neutral Back Spine; Neutral Cervical Spine  
Bracing and/or Transverse abdominis activation; Rigid torso

## 1. Modified Push-up (knees):

- Compare with and without weights
- Abduction at 30° and 75°

## 2. Position Assisted Push-up and Gravity Resisted Push-up

- How can the intensity be varied?

## 3. Push-up on Physioball (on ball and on floor)

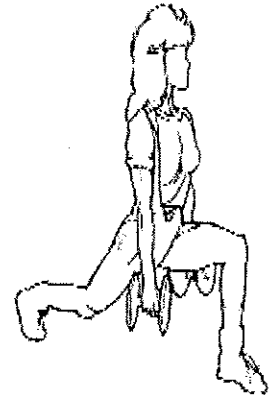
- Abduction at 30° and 75°

## 4. Step Back Lunge: with/without Platform and with/without wts.

Primary movers: gluteus, hamstrings, quadriceps

Joint Motion: Hip extension, knee extension

- Stand with feet together or slightly apart
- Neutral spine: brace abdominals or transverse abdominis activation
- Arms stay extended to side with/without dumbbells (may do with a biceps curl)
- Step back (~2.5 to 3 ft) with one leg landing softly on TOE
- Hips directly below shoulders and lead knee over the lead foot
- Lower to 90° angle; trailing leg remains bent
- Important performance technique: Touch back toe so weight stays on lead leg



## 5. Concentrated 1-Arm Push-up with Medicine Ball

- How can the intensity be varied?

## 6. Traveling Push-Up with Medicine Ball and Weights

- Develop some combinations

## 7. Wheel Lunge

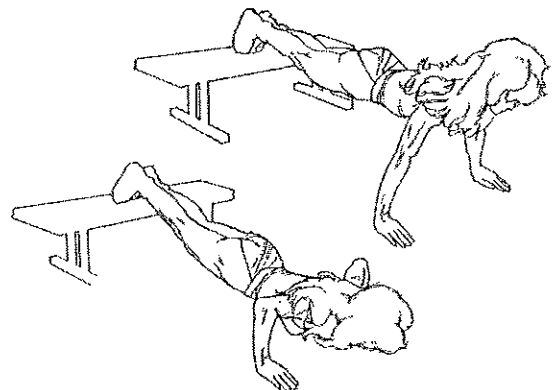
- Develop/create some combinations

## 8. Traveling Push-up with Weights

- Develop/create some combinations

## 9. Rotating and Balancing Plank

- Focus on core activation
- Create balance challenges



# Upper body and Squat Variations

(emphasis on function, balance and stability)

**Upper body-chest:** pectorals, anterior deltoid; joint motion horizontal flexion

**Upper body-back:** rhomboids, mid-trapezius, latissimus dorsi, teres major; joint motion horizontal extension

Performance Techniques (shoulder girdle and spinal stabilization)

Neutral Back Spine; Neutral Cervical Spine

Bracing and/or Transverse abdominis activation; Rigid torso

**Lower body:** gluteus, hamstrings, quadriceps; joint motion, hip extension and knee extension

Performance Technique (trunk stabilization in neutral spine) Bracing/Transverse Activation

## 1. Stability Ball Incline Chest Press (with dumbbells)

- a. Two-armed single arm version (palms starting facing in)
- b. Two-armed single arm barbell version (arms pronated)

## 2. Step-Up on Bench (High step position) (with dumbbells)

- a. Focus on balance and core stabilization: Variation 1—Add crane position
- b. Variation 2: SIDE Step-up
- c. Variation 3: Incorporate lungs into and out of the Step-Up on bench

## 3. Stability Ball "Piston" Pump Presses and Double/Single Flyes (with dumbbells)

- a. Single arm alternating in barbell arm position (Incline)
- b. Lower one dumbbell and do repeated single arm presses
- c. Flyes (double and single arm) allow arm to comfortably lower to 90 degrees

## 4. Squat With Overhead Press (with medicine ball)

- a. Vary position of legs (narrow and wide)
- b. Work on technique of squat

## 5. Stability Ball Seated Row (with tubes) Partner Exercise

- a. Double arm version and single arm version
- b. Vary the line of pull

## 6. Combination Squat and Lunge (with or without platform)

- a. Student-created squat/lunge combinations

## 7. Staggered and Square Stance Single Arm Row (with weights and bench)

- a. Emphasize neck and spinal stabilization

## 8. Single Leg Squat (on bench)

- a. Emphasize balance and stability

### Performing the Squat

1. Stand with feet shoulder width apart
2. Toes forward or slightly turned out (no more than 35 degrees)
3. Keep the back in its normal lumbar position (transverse activation)
4. Keep head up with eyes looking forward
5. Sit back with the buttocks and simultaneously lean slightly forward with the torso
6. Descend and ascend with a slow, even tempo  
Keep your weight over your ankles  
Keep your knees aligned over your feet
7. Descent for most people until there is approximately 90 degree angle between the upper and lower leg. There is little evidence that going lower enhances the physiological benefits
8. Breathing: inhale going down and exhale coming up