



Improving PRT Scores



Objectives

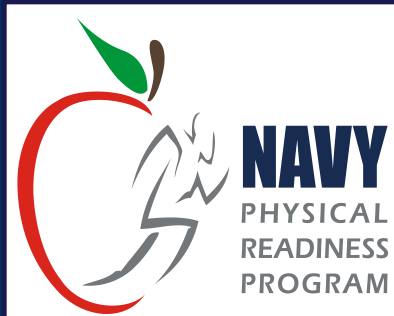
- Review the latest exercise guidelines
- Review ways to improve push-ups
- Review ways to improve curl-ups
- Review ways to improve the cardio-respiratory event

Introduction

The Physical Fitness Assessment (PFA) is a comprehensive health, physical fitness, and mission readiness tool.

All Naval personnel shall strive to optimize fitness and readiness by exceeding minimum standards and achieving continual improvement.





Exercise Guidelines and Principles

Basic Exercise Guidelines

- Train early:
6-8 weeks for any significant gains
- Train often:
At least 3 times/week to maintain fitness
- Train specific:
Incorporate components of the PRT into weekly workouts



ACSM Guidelines: Cardio-Respiratory

- 5+ days/week moderate intensity for a total of 30-60 min. per day
OR
- 3+ days/week vigorous intensity for a total of 20-60 min. per day
OR
- 3-5 days/week combination moderate/vigorous
- In one session or multiple 10+ min. sessions

ACSM Guidelines: Resistance

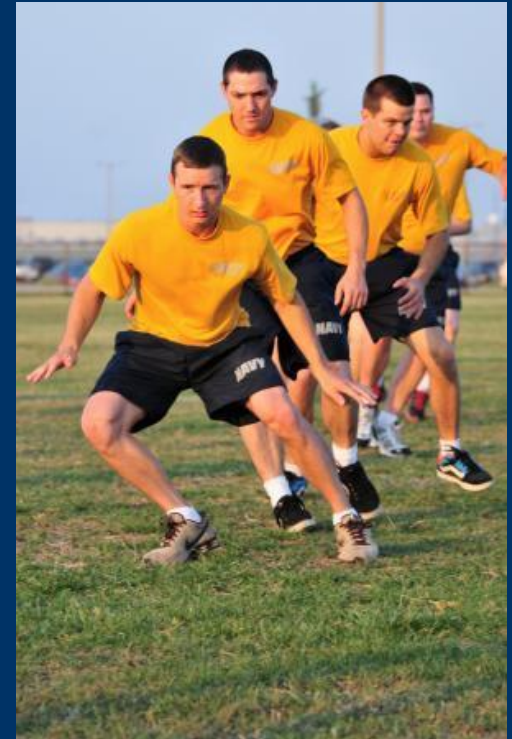
- 2-3 days/week
- Muscular endurance: Light-to-moderate intensity for 15-20 reps in 1-2 sets
- Strength: Moderate-to-vigorous intensity for 8-12 reps in 2-4 sets
- Rest 2-3 min. between sets, 48+ hours between sessions

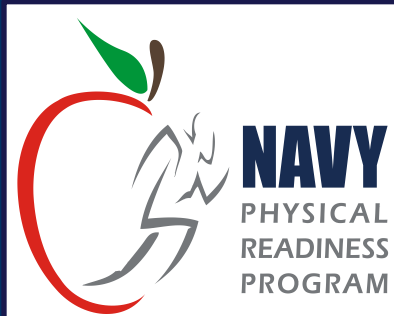
ACSM Guidelines: Flexibility & Neuromotor

- Flexibility:
 - 2-3 days/week (daily is best)
 - 10-30 sec. per stretch for a total of 60 sec. per stretch
- Neuromotor:
 - Balance, agility, coordination, gait, and multi-faceted (tai ji, yoga)
 - 2-3+ days/week for 20-30 min.

Balanced Exercise Sequence

- The ideal exercise program incorporates several different types of physical activity:
 - Cardio-respiratory
 - Muscular Strength & Endurance
 - Flexibility
 - Balance / Agility
- Balance opposing muscle groups (e.g. chest and back)
- Often individuals neglect one aspect and therefore do not receive optimal results

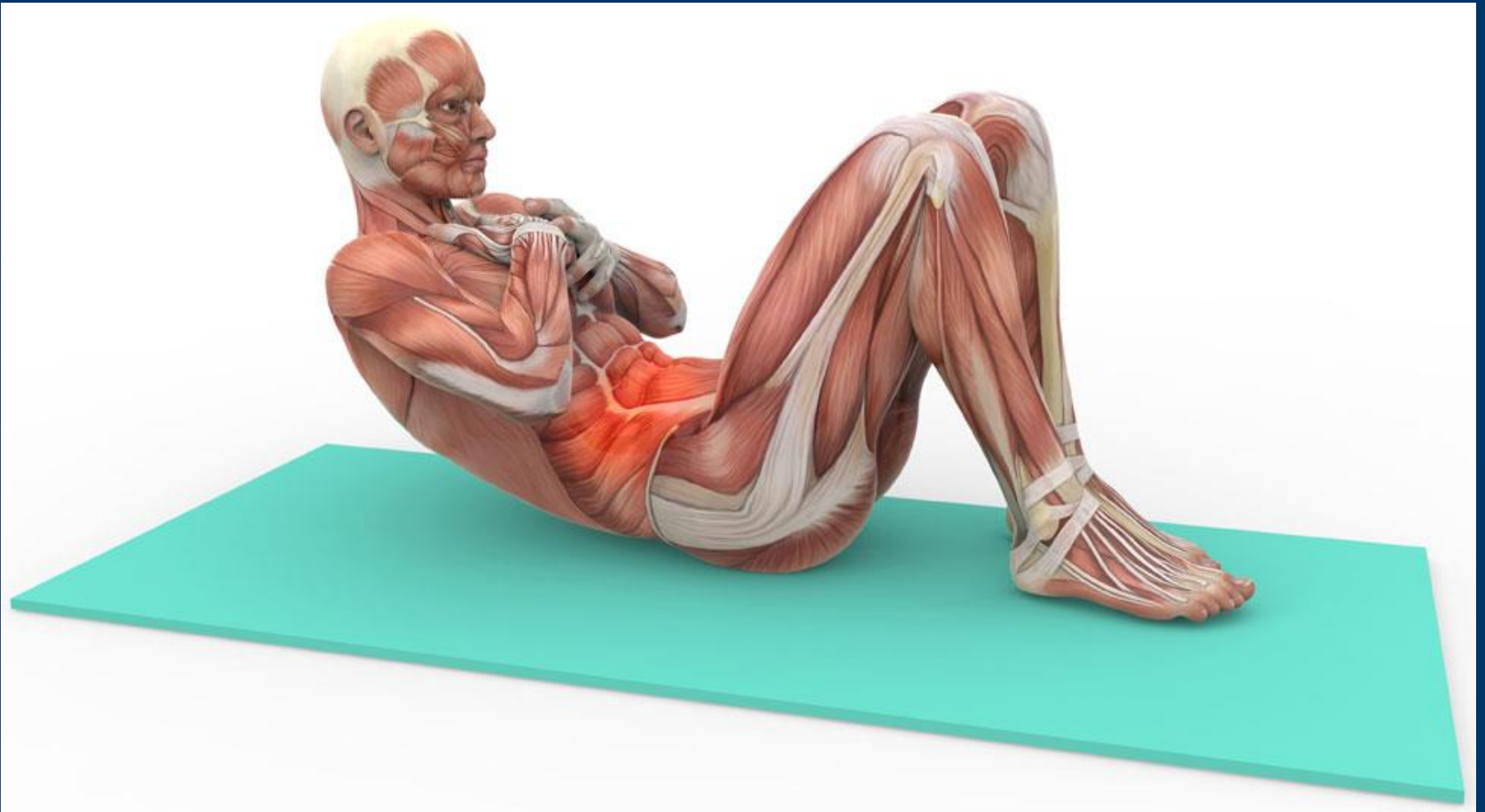




Improving your Curl-ups



Anatomy of the Curl-up



Abdominal Exercises

- Some basic exercises for the abdominals include:
 - Basic Crunch
 - Crunches on an Exercise Ball
 - Crunches with a Medicine Ball (shown)
 - Decline Sit-Ups
 - Cable Pull (shown)



Hip-Flexor Exercises

- Some basic exercises for the hip flexors include:

- Standing Hip Flexion
- High Knee Marches
- Spread Eagle Sit-up

Hip Flexion with Resistance:

- Plate Weight
- Cable Knee Drives
- Resistance Tubing



Tubing

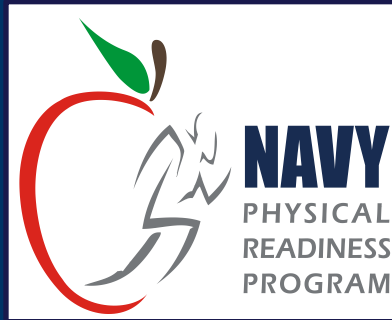


Standing hip flexion

Combination Exercises

- The exercises listed below target both the abdominals and hip flexors. They include:
 - Hanging knee raises
 - V-ups
 - Bicycles

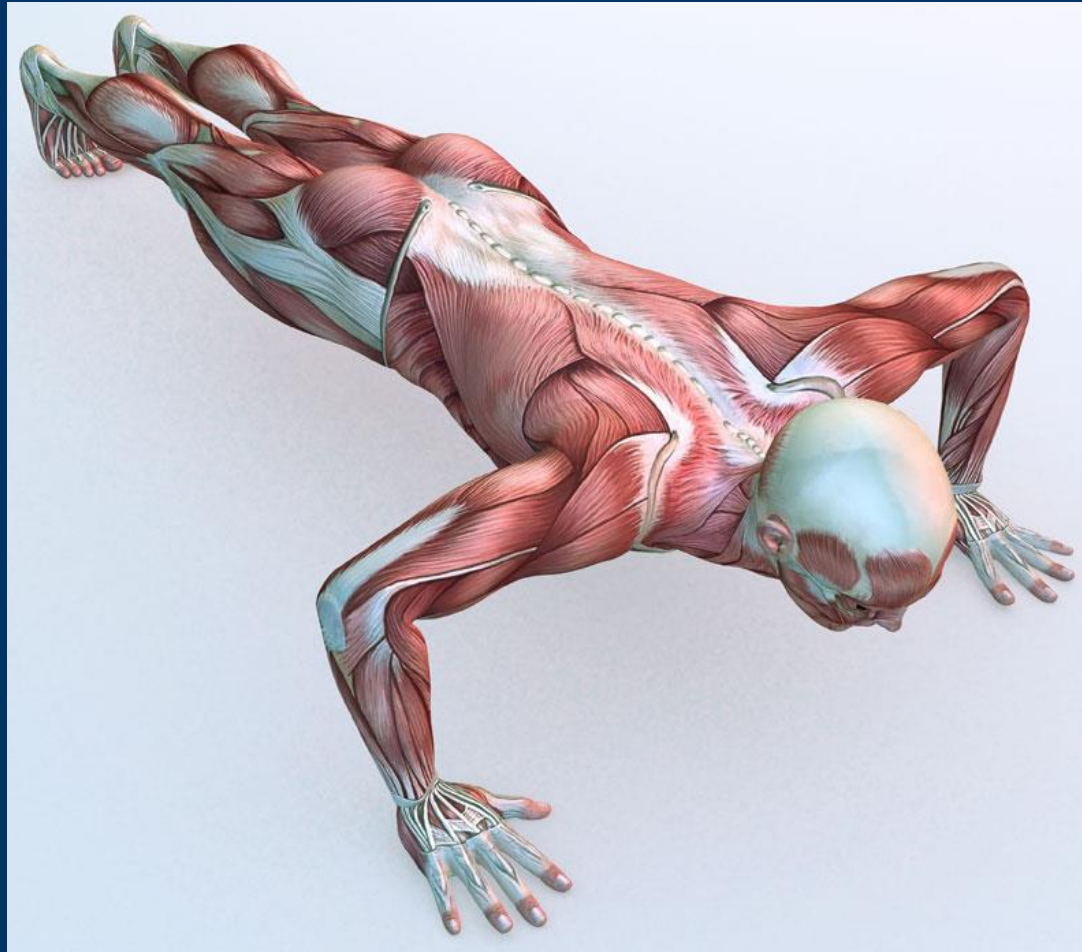




Improving your Push-ups



Anatomy of a Push-up



Push-up Progression

- Gradually progress from:
 - Push-ups on a wall
 - Push-ups on a bench/step
 - Toe-Knee-Toe push-up
 - Standard push-up
 - Push-up with 3 second isometric hold (hold in the down position)



Push-up Exercises

- Vary your hand stance:
 - Wide push-up
 - Narrow or diamond push-up
 - Staggered hand stance
 - One hand on book or medicine ball



Push-up Exercises (cont.)

- Use an exercise ball or BOSU:
 - With ankles on the ball
 - With both hands on an exercise ball or BOSU
- Use resistance with tubing



Sample Push-up Workouts

1. Beginner

- Take the number of push-ups you can complete in perfect form and divide in half
- Perform that number of push-ups for 5 sets with a 60 second rest between sets

2. Advanced

- 10 reps of each: Standard push-ups, Crunches, Triceps push-ups, Reverse crunches, Wide push-ups, Sit-ups
- Rest for 30 seconds between each set
- Repeat for total of 10 sets

Core Strength

- Core strength is essential to perform certain job related activities (e.g., lifting, pushing, pulling, carrying) as well as many everyday activities
- Good core strength may:
 - Reduce the risk of injury
 - Prevent low back pain
- Poor core strength may affect your ability to perform the push-up correctly



Core Strength Exercises

- Some basic exercises to target the core include:
 - Pillar Bridge
 - Lateral Pillar Bridge
 - Glute Bridges
 - Glute Marching
 - Bird Dogs



Weight Training

- Remember:
 - You are training for muscular endurance NOT strength
 - Use high repetitions (15-20 reps for 3-4 sets) and low weights
 - Last 1-2 repetition(s) should be difficult to lift, if not, increase the weight
 - Allow a 48-72 hours rest period between same muscle group weight training sessions

Chest Exercises

- Bench Press (using same distance between hands as for push-up)
- Incline Press
- Decline Press
- Pectoral Fly
- Cable Cross-Overs



Triceps Exercises

- Dips or assisted dip machine
- Triceps Cable Press Down
- Triceps Kick Back
- French Curl or "Skull Crusher"



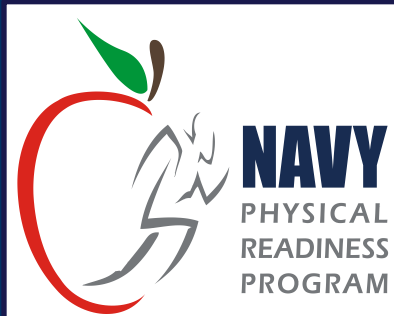
Triceps Cable Press Down



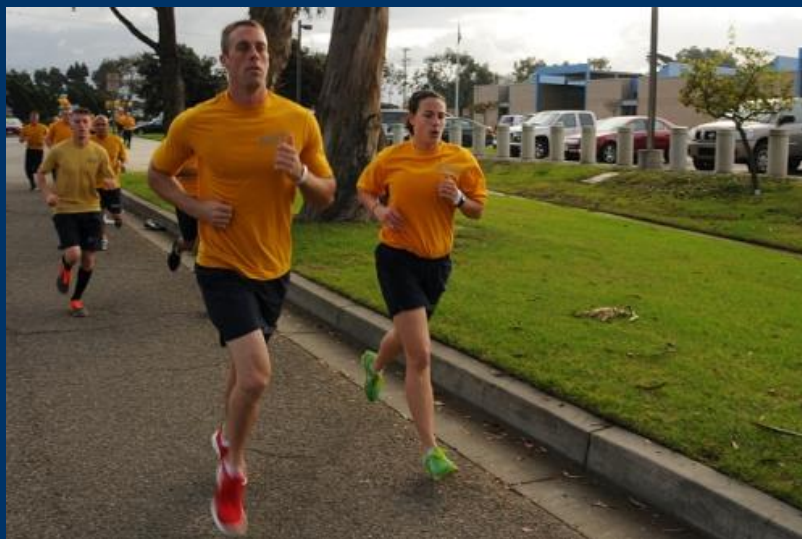
French Curl



Dips



Improving your Cardio-respiratory Fitness



Types of Cardio-respiratory Training

- Long Slow Distance
- Pace / Tempo
- Interval
- Repetition
- Fartlek



Long Slow Distance

- Low to moderate intensity (talk test, or RPE: 4-6)
- Emphasis on time/distance, not speed
- Example: Run 3 miles or 30+ minutes
- No formation running – Run in ability groups

Pace / Tempo Training

- Pace at or slightly higher than race/1.5 mile pace (RPE: ~7)
- Develops sense of pace while increasing ability to sustain that pace
- How do I determine my desired pace for 1.5 mile run?
 - $90 \div 1.5 \text{ mile run time} = \text{miles per hour}$
 - For a 12:30 1.5 mile run time:
 - $90 \div 12.5 \text{ (not 12.3)} = 7.2 \text{ mph}$

Recommended Pace / Tempo

Desired Run Time	Recommended Pace
15:30	5.8 mph
15:00	6.0 mph
14:30	6.2 mph
14:00	6.4 mph
13:30	6.7 mph
13:00	6.9 mph
12:30	7.2 mph
12:00	7.5 mph
11:30	7.8 mph
11:00	8.2 mph

Interval Training Example

- 5 - 10 minutes warm-up
- 3 minutes high intensity followed by 3 minutes low intensity (repeat 3-5 times)
- 5 - 10 minutes cool down
- As fitness level improves, increase times to:
 - 4 minutes high intensity, 4 minutes low intensity
 - 5 minutes high intensity, 5 minutes low intensity
- Easily adapted for runners, swimmers, and elliptical/stationary bike users

Interval Training - Ladders

- Warm-up – 5 minutes walk/easy pace
- Run 400 meters (5K race pace),
recover 400 meters (easy pace)
- Run 800 meters (5K race pace),
recover 400 meters (easy pace)
- Run 1200 meters (5K race pace),
recover 400 meters (easy pace)
- Run 800 meters (5K race pace),
recover 400 meters (easy pace)
- Run 400 meters (5K race pace)
- Cool Down (5 minutes easy pace)

Repetition Training

- Repetition training is high intensity, short duration (typically 30-90 seconds) training
- Benefits of Repetition Training include:
 - Improved running speed
 - Enhanced running economy



Sample Repetition 1

Cone Drill

Pattern 1:

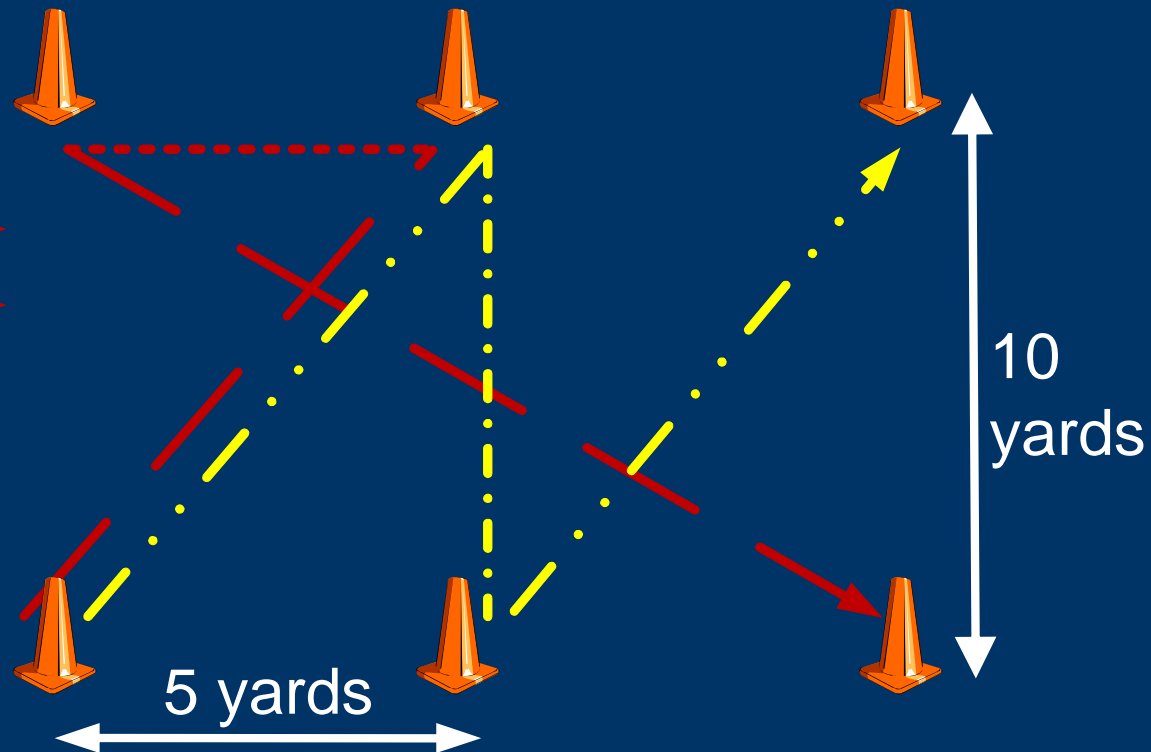
Sprints: —————→

Back Peddle: - - - - -→

Pattern 2:

Sprints: — . . . →

Lateral Shuffle: - . →



Run pattern, jog back to start, repeat 2-7 times

Sample Repetition 2

Linear Accelerations

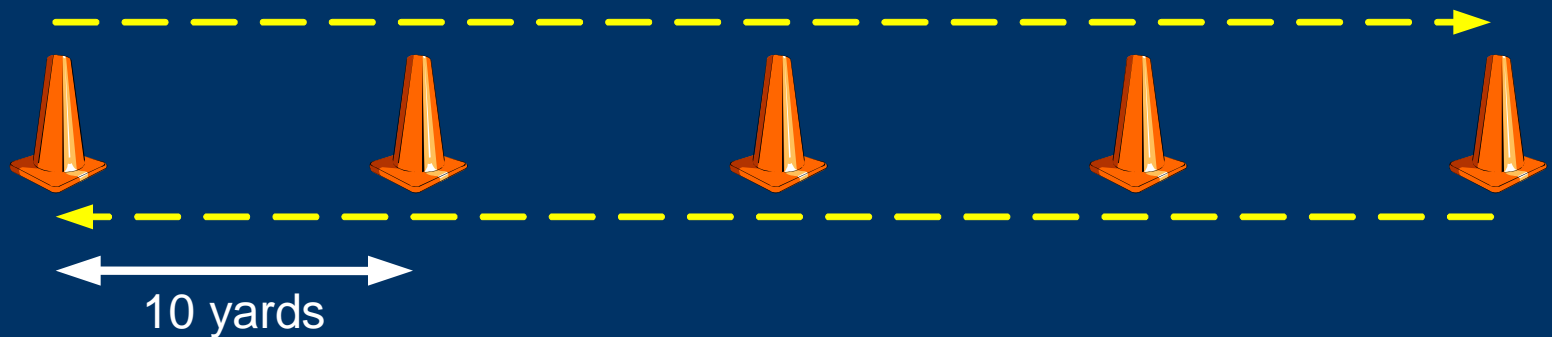
Stage A: Moderate (30 yds), Max (10 yds)

Stage B: Moderate (20 yds), Max (20 yds)

Stage C: Max (10 yds), Moderate (30 yds)

Stage D: Max (20 yds), Moderate (20 yds)

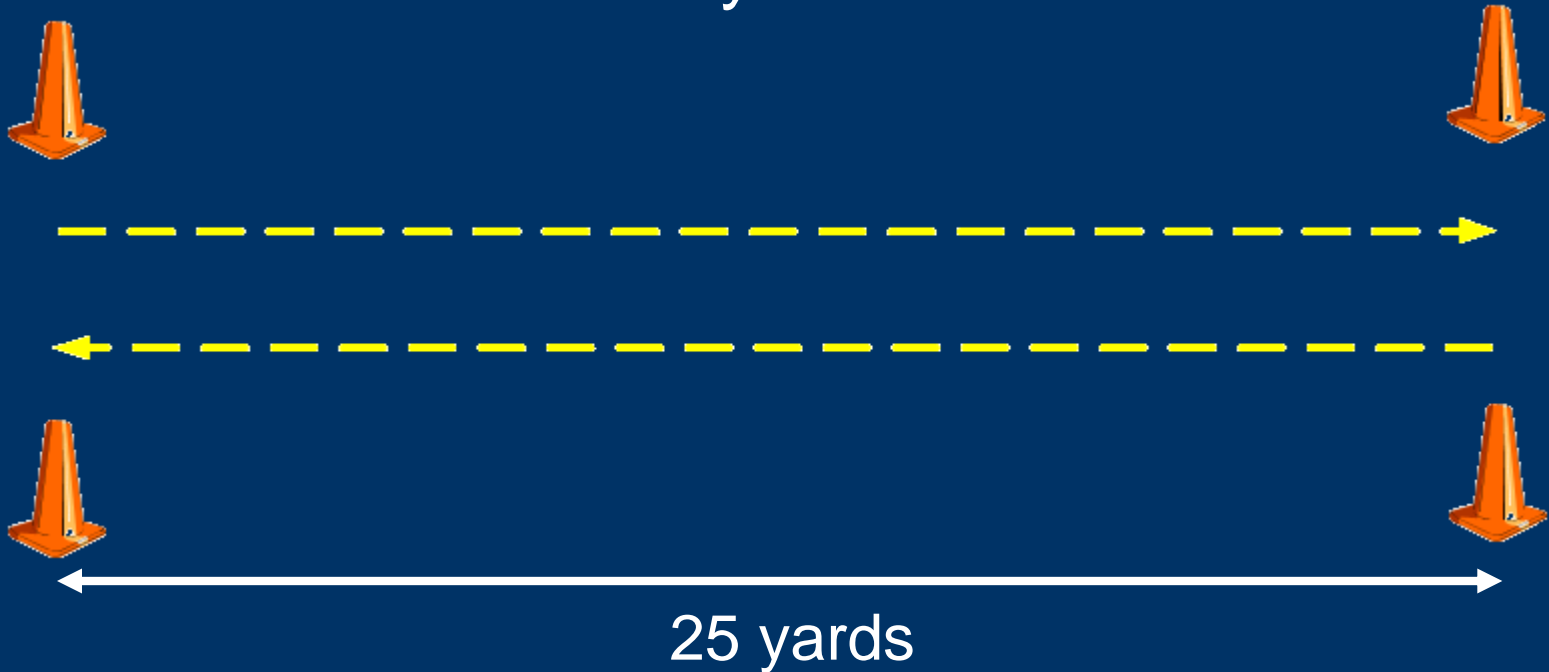
Stage E: Max (40 yds)



Run for 2 minutes, rest for 1 minute,
repeat 3-7 times

Sample Repetition 3

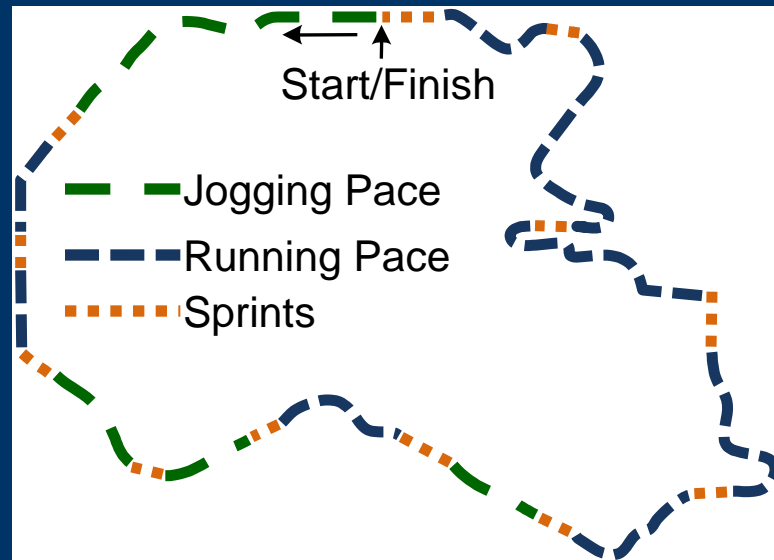
300 yd Shuttle



Run 25 yards down and back 6 times (12 lengths), rest for 3-5 minutes and repeat

Fartlek Training

- A type of interval training in which the runner(s) periodically changes the race pace (i.e., low, moderate, high intensity)
- Can be performed outside or on a treadmill
- Reduces boredom and monotony



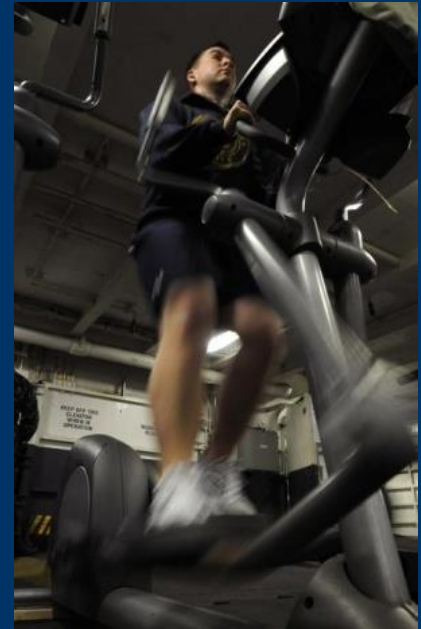
Running Economy

- The following techniques are recommended to help you improve your running economy:
 - Control your breathing
 - Relax your arms
 - Limit unnecessary movement
 - Open your stride
- Run in ability groups, where members are placed into groups based on similar performance.



Starting Out

- If you have an increased body fat percentage:
 - Begin with low impact exercise (elliptical, walking on a treadmill) and gradually progress to jogging/running
- Allow 48 hours between sessions to reduce/prevent running related injuries



Sample Running Schedule

- Mon: Pace/Tempo Run
- Tue: Full-body Strength Circuit
- Wed: Interval Training (Ladders)
- Thu: Full-body Strength Circuit
- Fri: Fartlek Training / Cross Training
- Sat: Long Slow Distance Run
- Sun: Off



Plyometric Exercises

- Quick, explosive movements
- Involves jumping, bounding, and other high impact exercises



Benefits of Plyometric Exercises & Running

- Conditions the stretch reflex of muscles
- Develops strength and speed
- Increases ability to recruit more muscle fibers efficiently
- Reduces ground contact time
- Improves running economy

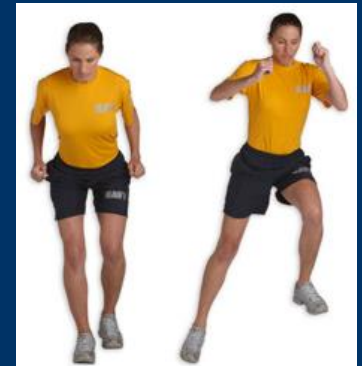
Incorporating Plyometric Exercises into Your Workouts

- MAXIMUM 1-2 times a week, 2-5 sets of 6-10 jumps per set
 - Beginners: 80-100 jumps per session
 - Intermediate: 100-120 jumps per session
 - Advanced: 120-149 jumps per session
- 2-3 minutes recovery between sets

Plyometric Exercises

Examples include:

- Squat Jumps
- Lateral Bounding
- Single-leg hops
- Linear Skips
- Linear Hops



Plyometric Considerations

- Only include AFTER you have been training consistently for several months
- Avoid if you have chronic joint pain
- Limit plyometrics if you are over 250 lbs
- Wear proper footwear with ankle/arch support, lateral stability, non-slip soles
- Perform on shock-absorbing surfaces

Plyometric Considerations

- Always warm-up and complete dynamic stretching first
- Maintain proper form and alignment at all times
- Land softly to absorb shock
- 48-72 hours recovery is required between sessions
- Focus on QUALITY, not quantity

Summary

- Latest exercise guidelines and principles
- Ways to improve push-ups
- Ways to improve curl-ups
- Ways to improve the cardio-respiratory event

Additional Resources

- National Strength and Conditioning Association: Essentials of Strength Training and Conditioning (3rd Edition, 2008)
- American Council on Exercise Group Fitness Instructor Manual: A Guide for Fitness Professionals (3rd Edition, 2011)
- ACSM's Resources for the Personal Trainer (3rd Edition, 2009)
- NASM Essentials of Personal Fitness Training (4th Edition, 2013)

Questions?

