PDP FT 125 Principles of High Intensity Interval Training

Instructor: Instructor will vary by semester
Email: groupex@bu.edu
Phone: 617-358-3760
Meets twice per week: 1.0 Credit

Course Description:
A course in the principles and methods of high intensity interval training (HIIT) for strength and cardiovascular training using high and low level intensities to maximize results. Improve muscle strength, tone, endurance and body composition with structured interval training.

Course Goals:
As a result of successfully completing this course, the student will be able to:

- Identify the benefits of exercise and the principles of effective/safe exercise
- Explain the health benefits of aerobic exercise, flexibility training, and muscular strength training.
- Develop and engage in a personal fitness program.
- Administer pre and post fitness tests using specified protocol
- Define basic terminology related to fitness principles and assessment.
- Measure resting heart rate and determine target heart rate to achieve health benefits.
- Identify the theory behind behavior change and physical activity adherence.

Grading Policy:
This class will be graded Pass/Fail, based on attendance. Please visit the Registrar’s website often to view relevant deadlines! Below is a list of possible grades you may receive in this class:

P – Pass: Completed course requirements, 80% or more classes attended

W – Withdraw: If you drop this class after the specified deadline, you will receive a “W” grade.

MG - Missing Grade: If you decide you do not want to take this course, but forget to drop it, this grade will appear on your transcript. You will still be allowed to graduate and it will not affect your overall GPA, however you are strongly encouraged to drop this course within the allotted deadline to avoid this grade. Dropping before the deadline will remove this class from your transcript entirely.

I – Incomplete: If you fail to meet the attendance requirements of this course, you will receive an “I” until you have made up all missed classes. Please make arrangements with your instructor to do so within the following semester. Your grade will be changed to a “P” once you have made up all classes.

AU- Audit: If you intend to audit this class, please fill out and ask your instructor to sign a Class Adjustment/AU form and turn it in to the Registrar’s Office by the deadline.
F- Fail: It is very unlikely that you will receive a failing grade. Your instructor is happy to work with you to make up any missed classes. A grade of “F” will only be given in extenuating circumstances.

**Attendance Policy & Make-Up Classes:**
Because this class is graded solely on attendance and learning is cumulative, it is important that you attend each class. You will need an 80% attendance record to receive a passing grade. You are allowed 5 unexcused absences. Excused absences (such as illness or injury with a doctor’s note or death of a family member) will not count against your attendance record. If you have more than 5 unexcused absences, you will need to arrange to make up the classes you have missed. You can do this by attending any section of FT 112, FT 114, or FT 115.

Please contact the instructor of the make-up class that you would like to attend so that they can plan accordingly. It is your responsibility to keep track of your attendance record and make up any classes you have missed.

**Blackboard, FitRec Website & Course Evaluation:**
A Blackboard course site may be available for this class online at [http://www.learn.bu.edu](http://www.learn.bu.edu) and can be accessed by entering your BU username and password. All students enrolled in this class should have access to this site, even if your school does not use Blackboard. This site will give you access to the course syllabus, any additional content, and allow you to email other students in this class. Emergency cancelations as well as other announcements may also be posted here.

For a broader explanation of PDP credit class policies, information on registration, or schedules please visit the FitRec’s website: [http://www.bu.edu/fitrec/about/physical-education/](http://www.bu.edu/fitrec/about/physical-education/)

Course evaluations will be sent via email at midterm and at the end of the semester. Please take the time fill these out – your feedback is very important to us!

**Student Conduct:**
Boston University’s codes of conduct are enforced at the Fitness and Recreation Center at all times. Use of Boston University facilities is a privilege and participants are expected to be good citizens and respect the rights of others. Individuals who engage in unacceptable or irresponsible behavior may have their access to the Fitness and Recreation Center revoked or modified indefinitely as determined by the Executive Director of Physical Education, Recreation and Dance. Students may be subject to further university disciplinary action as outlined in the Boston University Code of Student Responsibilities ([www.bu.edu/dos/policies/student-responsibilities](http://www.bu.edu/dos/policies/student-responsibilities)).

**Curriculum:**
The following topics will be reviewed during this course. This material is intended to be an outline; all topics will be covered, however topics may not be covered in this order.

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Topic 1: Pre-Test/Benefits and Barriers to Exercise

We will be using this week to test students on strength, endurance, and flexibility within the domain of the class. Specific tests will be your instructor.

Benefits of Exercise
- Improved cardiovascular endurance
- Decreased risk of developing chronic disease
- Increased muscular strength
- Increased energy level
- Improved sleep
- Increased bone mass
- Decreased Stress level

Barriers to Exercise
- Difference between physical activity and exercise
  - Physical activity - unplanned
    - Examples: Parking further away and walking, taking stairs instead of elevator, walking instead of taking the bus, T, or car
  - Exercise - planned
    - Examples: Running, lifting weights, group exercise class
- Common Barriers to exercise
  - Lack of time
    - Solution: Cut out some TV
  - Lack of motivation
    - Solution: Go with a friend who has similar goals
  - Too Tired
    - Solution: Working out gives you more energy!
  - Not knowing how to exercise properly
    - Solution: Ask us for help!

5 Components of Physical Activity
1. Cardiovascular
2. Strength
3. Endurance
4. Flexibility
5. Body Composition

Mythbusting Your Workout:
MYTH: Working out is really time consuming.
Your workout can be as simple as 20 minutes of cardio + 20 minutes of weights + 5 minutes of stretching. If you are efficient about your exercises and rest periods it doesn’t have to take much time at all!

MYTH: I don’t need to do strength training, cardio is enough.
- Strength training helps preserve muscle mass and burn calories while your body is at rest.
- A combination of cardio and strength training is the most effective workout

MYTH: I have to work out every single day to stay healthy.
- Your body needs to rest and recuperate in between workouts!

**Topic 2: Dynamic Stretching**
Dynamic stretching comprises controlled movements, such as leg and arm swings, that slowly bring the muscles close to their range of motion limit without exceeding it. This type of stretching is ideal before sporting events, weight-bearing exercise sessions that involve the whole body, or training involving quick changes of direction. Dynamic stretching is meant to prepare the muscles for the activity at hand. Examples include torso twists, arm circles, knee-high jogs, stretching lunge walks and standing leg lifts or circles.

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<tr>
<th>Dynamic Stretching Acute Variables</th>
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<tr>
<td>1 set</td>
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<tr>
<td>10–15 repetitions</td>
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<td>3–10 exercises</td>
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**Contraindications for Dynamic Stretching**

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<tr>
<td>Poor posture</td>
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<td>Poor core strength</td>
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<tr>
<td>Special populations</td>
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<td>(hypertensive, diabetic, arthritic, etc.)</td>
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<tr>
<td>Poor tissue extensibility</td>
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<tr>
<td>Poor balance</td>
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<td>Acute injury</td>
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Lunges with lean, side lunge with heel touch, lung twists, straight leg kicks, knee into chest, arms swings and circles, side bends, forward/sideways leg swings, hacky-sacks, high knees, butt kicks, hip circles, running carioca.
**Topic 3: Nutrition**

**Nutrient** – Specific substance found in food that performs one or more physiological or biochemical function in the body.

**6 Major Classes of Nutrients**
- **Protein** - Builds and repairs body tissue
- **Carbohydrates** - Provide energy for the body
- **Fat** - Necessary part of every cell; protects internal organs; carries fat soluble vitamins
- **Vitamins + Minerals** - Regulate body processes
- **Water** - Important for numerals chemical reactions in body
  - Most predominant nutrient
  - 60% of the human body is made up of water

Body fluids = water-bring exact ingredients to each system and carry away by-products
  - Active in chemical reactions in body
  - Acts as lubricant around joints
  - Protects sensitive tissues and organs from shock

The next in abundance (after water) are the 3 energy nutrients:
1. Carbohydrates, fats, protein (less for energy)
2. Energy nutrients: all contain calories to be used for energy
3. Energy for heat: build its structures to move its parts or stores as body fat

Please use Choose My Plate to calculate individual nutrition recommendations: [http://www.choosemyplate.gov/supertracker-tools/daily-food-plans.html](http://www.choosemyplate.gov/supertracker-tools/daily-food-plans.html)

**Topic 4: Sleep Health**

**Effects of Sleep Deprivation:**
- Increase in body mass index – a greater likelihood of obesity due to an increased appetite caused by sleep deprivation
- Increased risk of diabetes and heart problems
- Increased risk for psychiatric conditions including depression and substance abuse

**Benefits Getting a Good Night's Sleep:**
Sleep is one of our basic physiological needs. Regular, sufficient sleep is required for your brain to function, grow, and repair itself. Sleep has many benefits for both your mental and physical health:
- **Boost your mood** - Sleep restores the body and helps manage stress, irritability, and feelings of depression and anxiety
- **Fight off Sickness** – Sleep improves the body’s ability to fight off colds, flu, and other illnesses
- **Maintain Healthy Eating Habits** - Sleep deprivation increases the production of hormones that stimulate appetites, while decreasing the production of hormones that affect fullness and satisfaction after a meal. This leads to overeating and possible weight gain.
- **Keep your Grades Up** - Sleep sharpens concentration, solidifies memory, and improves brain performance. Students who regularly get the recommended 7 to 9 hours of sleep each night tend to do better academically.
- **Help your workout** - Sleep is when your body recovers and gets back to its full physical potential!

**Factors Contributing to Sleep Deprivation**
- Physical or mental stress
• Depression and anxiety
• Caffeine - Caffeine is an ingredient in many things, including coffee, tea, soda, and even pain relievers such as Excedrin. Avoid these and other sources of caffeine at least 4-6 hours before sleep.
• Alcohol – It takes a minimum of 3 days for the body to recover from a night of heavy drinking. Alcohol intoxication interferes with REM sleep – the deep sleep stage needed to feel rested and refreshed.
• Uncomfortable Environment – An environment that is too bright or noisy prevents you from getting the right amount and quality of sleep that you need
• Irregular Schedule – Ideally you want to go to sleep and wake up at about the same time every day

Myths about Sleep
MYTH: Insomnia is not a serious medical condition and has no consequences
• Insomnia is a serious condition. Chronic sleep deprivation can have very severe consequences, including: decreased concentration and productivity, increased risk of automotive crashes, and severe mood changes and depression.
MYTH: Men and women are affected the same way by insomnia
• Insomnia is nearly twice as common in women as in men, and women are more likely than men to report insomnia to their healthcare professional. A woman’s sleep is uniquely influenced by menstrual cycle, biological life stage, stress level, health, mood, parental status, work hours and other life responsibilities.
MYTH: Exercising before bed will make me tired, and help me sleep
• Exercise has an alerting effect, raises your body temperature, and increases your energy level. Sleep experts recommend avoiding strenuous exercise less than 3 hours before sleep.
MYTH: Sleep is not important. I can just get by on a few hours
• Adults typically need between 7 to 9 hours of sleep per night. It is difficult to make up for lost sleep because each time you don’t get enough sleep, you add to your sleep debt (the accumulated sleep that is lost)

Tips and Tricks to Get More Sleep
Put your thoughts to bed: Make a to-do list for the next day before going to bed. Doing this can quiet your thoughts and prepare you for a peaceful night’s sleep. Try keeping a notepad by your bed to write down things you need to do or remember.

Snack lightly: A light snack before bedtime is OK, but avoid heavy meals since digestion prevents the body from relaxing. Pretzels, fruit, and yogurt are all good options. Warm milk, bananas, and other foods high in tryptophan stimulate serotonin in the brain and can help with sleep.

Give Yourself Some Downtime: At least 30 minutes before bed, take time away from studying or any other stressful activities. If you do the same activity before bed every night (listen to music, read, etc.) that can signal your body that its sleep time

Stay active: Daytime exercise helps you to sleep longer and sounder, and makes you more alert throughout the day. Get at least 30 minutes of exercise each day, but make sure that it ends at least 3 hours before bedtime.

Don’t Work in Bed: Strengthen your body’s association between bed and sleep by avoiding eating, going online, and doing homework in bed. Try to organize your room so that you can
study and sleep in different areas. Also, don’t stay in bed if you find yourself tossing and turning. If you can’t fall asleep within 15-20 minutes, get out of bed and try a relaxing activity like yoga, deep breathing, or reading a book.

Get Rid of Screens: Arrange your room so that you can’t see any lights from phones, TVs, or computer screens. The lights from these devices interfere with the hormone that tells you to sleep. Avoid these lights for at least 30 minutes before going to bed.

**Topic 5: Plyometrics**

Plyometric: From the Greek (Plio – more; Metric- measure)

- Refers to activities that enable a muscle to reach maximal force in the shortest possible time.
- Quick and Powerful Movements

Purpose of plyometric exercises:

- Utilize a pre stretch, or countermovement that involves the stretch shortening cycle (SSC)
- The elastic strength of a muscle is the ability of this muscle/tendon “system” to fire with the same power output repeatedly over time (i.e. immediate second jump of a basketball player for height)

Built for POWER:

- Function of all active muscles + Speed of these muscular force = POWER
- The rate of musculotendinous stretch is vital to plyometric exercises
- High rate of stretch = Greater muscle recruitment
- As rate of stretch increases, Absolute performance increases

**Involves: Mode, Intensity, Frequency, Recovery, Volume, Progression**

**Mode:** Targeted body region

Lower Body (i.e. single leg hop)
Intensity: Amount of stress placed on muscles and joints
- Low intensity (i.e. skipping)
- High Intensity (i.e. Box Jumps)

Frequency: Number of plyometric training sessions per week
- In season: 1x/week
- Off season: 2-3x/week

Recovery: Sets are determined by work to rest ratio (1:5 to 1:10)
- High intensity plyometric (Depth Jumps)
- 5-10 secs of rest between reps and 2-3 minutes rest between sets
- Drills for a given body area should not be performed 2 days in succession.

Volume:
- Lower body plyometrics - # of foot contacts
- Upper body plyometrics - # of throws or catches

Progression: As intensity increases, volume decreases
- Examples Include:
  - Jump/Clap push-ups, Side throws (med ball), chest throws (med ball), med ball slams, Burpees, Squat/Box Jumps, jump split squats, squat throws (med ball)

Topic 6: High Risk Moves
- Ballistic stretching
- Bouncing stretches
- Hurdler’s stretch

- Full straight-leg sit-ups
- Forced high kicks
- Deep knee bends
- Plough

- Full cobra
Topic 7: Fitness Fallacies

“If It’s Fat Free It’s Good for You” and Other Fitness Fallacies Debunked
By Corinne Keer, 12/9/13

A good dose of fitness information is vital, especially for a body that may feel personally attacked by finals. Yet as FitRec Managers Michael Lagomarsine and Rick DiScipio stressed in their latest Fall Fitness Workshop, the quality of your fitness information is just as important as the quantity. Throughout their free, hour-long session, Lagomarsine and DiScipio explained why so many fallacies pervade the fitness industry and dispelled three major ones.

The US has an odd and paradoxical relationship with weight-loss and fitness. While DiScipio noted that its citizens, as a whole, spend over $40 billion on weight-loss programs and products, it still has one of the highest obesity rates in the world.

This contradiction arises in part from a watered down fitness industry. Rather than learning facts from health experts or reputable journals, most people get their fitness news from Cosmopolitan, GQ, Men’s Health, Self, or equally superficial magazine publications. These articles may guarantee flat abs, offer a fool-proof list of acne-busting food, or tout the life changing benefits of acai berries, but they are probably written by an author with no legitimate credentials. The information of celebrity “experts” such as Jillian Michaels or Insanity’s Shaun T, may not be credible either; they may have few credentials or ulterior motives.
In reality, the intent of much of the health information out there is capitalistic, not altruistic. Many articles and products claiming to help an individual make the best health choices possible, really want to sell products. Fad diets, all-in-one workout machines, and TV infomercials, DiScipio and Lagomarsine creatively termed “marketing scams,” rarely lead to effective fitness or health.

As a general rule of thumb, DiScipio and Lagomarsine stressed the importance of taking initiative and checking your fitness sources.

They then talked about three fitness fallacies that often derail the best of workout intentions:

**Fitness Fallacy #1: Fat Free Foods Rule!**
While fat free foods can be useful, especially when trying to lose weight, they are not immediately better than their “real food” counterparts. Fat free and low fat do no mean calorie free. Furthermore, once fat is eliminated from a food, refined sugar or salt is typically added to enhance flavor.

DiScipio and Lagomarsine gave the example of Bellissimo Italian salad dressing. In its regular form, the dressing packs 150 calories per 2 tablespoons, 140 of those calories are from fat. It has 1 gram of sugar and 200 mg of sodium. The fat-free version has 15 calories and 0 of them are from fat. Yet it has 2 grams of sugar and a whopping 490 mg of sodium.

The fat-free version is not better, per say. There are positive and negatives to both dressings.

**Fitness Fallacy #2: Cardio + Starvation = Weight Loss and Improved Fitness**
This common misconception leads to lots of time spent at the gym with few results. Simply eating less and exercising more is not enough to help most people remove excess body fat and keep it off.

In a study from *Strength and Conditioning Journal*, 97% of subjects who performed resistance training achieved weight loss, as compared to 78% who focused on endurance training and 70% who made only dietary changes. A comprehensive program that involves weight training and cardio, as well as changes to diet, will lead to the most effective weight loss, which leads to…

**Fitness Fallacy #3: Muscle Weighs More Than Fat**
Actually, DiScipio said, both way 1 lb, but they process calories differently. Muscle cells burn 10 calories per pound whereas fat cells burn 2 calories per pound. This is why it is important to keep both in mind during a workout.

As finals begin, working out is an awesome way to sweat out stress and improve brain function. Just make sure, as DiScipio and Lagomarsine taught, to research thoroughly before adding a crazy weight lifting move to your workout or picking up the paleo-diet. Ask for the background of your personal trainer. Take most “revolutionary” workout moves and diets with a grain of salt.

And, in perhaps the most important lesson DiScipio and Lagomarsine shared, remember that fitness is an individual journey and you are your own best data point.
Topic 8: Stress Management

**Definition:** Stress is the body’s reaction to a change that requires a physical, mental or emotional adjustment or response.

- **Acute Stress:** “Fight or flight response,” immediate reaction to a perceived threat or scare, quick and intense. This is usually brought on by a single event and doesn’t typically have any lasting effects on your body.
  - Who can give an example of acute stress?
- **Chronic Stress:** Stressors that build up over time. Your body’s response won’t be as intense as when you experience acute stress. Chronic stress will affect your body over time if you do not relieve it.
  - Examples of chronic stress?

**Effects of Stress**

- **On your body**
  - Headache
  - Muscle tension
  - Stomach upset
  - Fatigue
  - Sleep problems
- **On your mood:**
  - Sadness or depression
  - Anger/irritability
  - Lack of motivation
  - Anxiety
  - Restlessness
- **On your behavior:**
  - Social withdrawal
  - Overeating/under eating
  - Angry outbursts
  - Drug and alcohol abuse

**Stress and Weight Gain:**

- Cortisol: important hormone in your body, released in response to stress
  - Regulates metabolism
  - Regulates blood pressure
  - Immune system function
- If stress is not relieved, cortisol levels will rise causing:
  - Loss of muscle mass => lowered metabolism
  - Increased blood sugar levels => increased appetite
  - Increased body fat => especially in stomach area

**Tips to Prevent/Manage Stress:**

- Make a weekly schedule (use a planner)
- Make a to-do list
  - Estimate how long each task will take before you begin
  - Do your hardest task first
- Find time for yourself to relax
- Eat right and stay hydrated
- Get enough sleep
- Exercise!
Stress Relieving Stretches
These can be done standing or sitting down

1. **Breathe**: take a minute or two, close your eyes and focus on your breath. Inhale through your nose and exhale through your mouth. Repeat 10 times, for a set. Do three sets.

2. **Shoulder and Neck Stretch**: Sit up straight in your chair with both feet on the floor about shoulder-width apart. Place both hands behind your head at the base of your neck and interlock your fingers. Tilt your head toward the floor and press your shoulder blades together. Hold for 10 seconds, release and repeat 3 times.

3. **Arm Stretches**: Sit up straight in your chair with both feet on the floor about shoulder-width apart. Interlock your fingers and stretch your arms straight out in front of you. Rotate your wrists so your palms face away from your body. Hold this stretch for 10 seconds, then raise your arms over your head, hold for 10 seconds. Repeat three times.

4. **Leg Stretches**: Sit up straight in your chair with your feet flat on the floor. Raise one leg and straighten it in front of you. Hold for 10 seconds and rotate your ankle to the left and then to the right. Repeat with the other leg. Do 5 repetitions with each leg.

5. **Lower Back Stretches**: Sit up straight in your chair with your feet flat on the floor. Lean forward and try to grab your ankles with both hands. Feel the stretch in your lower back! Hold for 10 seconds and repeat three times.

Take Away Message/Closing: We encounter stressful situations every day, and everyone deals with stress differently. Since stress cannot be completely prevented, it is important to recognize the different types of stress, and know how to manage them properly.

**Topic 9: Fitness Assessment**
**Post-test**
We will be using this week to test students on strength, endurance, and flexibility within the domain of the class. Specific tests will be your instructor.

**Topic 10: HIIT Information**
Please see the sheet below.
HIGH-INTENSITY INTERVAL TRAINING

The popularity of high intensity interval training is on the rise. High intensity interval training sessions are commonly called HIIT workouts. This type of training involves repeated bouts of high intensity effort followed by varied recovery times.

A Complete Physical Activity Program

A well-rounded physical activity program includes aerobic exercise and strength training—exercise, but not necessarily in the same session. This blend helps maintain or improve cardiovascular and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than occasional, high-intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSMs physical activity recommendations for healthy adults, updated in 2018, recommend at least 30 minutes of moderate-intensity physical activity (walking hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:
- Walking
- Running
- Step climbing
- Cycling
- Rowing
- Cross-country skiing
- Swimming

In addition, strength training should be performed a minimum of two days each week, with 8–12 repetitions of 8–10 different exercises that target major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

The intense work periods may range from 3 seconds to 8 minutes long, and are performed at 80% to 95% of a person’s estimated maximal heart rate, the maximum number of times your heart will beat in a minute without overexerting yourself. The recovery periods may last equally as long as the work periods and are usually performed at 40% to 50% of a person’s estimated maximal heart rate. The workout continues with the alternating work and relief periods totaling 20 to 60 minutes.

What are the benefits of HIIT?

HIIT has been shown to improve:
- Aerobic and anaerobic fitness
- Blood pressure
- Cardiovascular health
- Insulin sensitivity (which helps the exercising muscles more readily use glucose for fuel to make energy)
- Cholesterol profiles
- Abdominal fat and body weight while maintaining muscle mass.

Why is HIIT Training so Popular?

HIIT training can easily be modified for people of all fitness levels and special conditions, such as overweight and diabetes. HIIT workouts can be performed on all exercise modes, including cycling, walking, swimming, aqua training, elliptical cross-training, and in many group exercise classes. HIIT workouts provide similar fitness benefits as continuous endurance workouts, but in shorter periods of time. This is because HIIT workouts tend to burn more calories than traditional workouts, especially after the workout. The post-exercise period is called “EPOC”, which stands for excess post-exercise oxygen consumption. This is generally about 2-hour period after an exercise bout when the body is restoring itself to pre-exercise levels, and thus using more energy. Because of the vigorous contractile nature of HIIT workouts, the EPOC generally tends to be modestly greater, adding about 6 to 15% more calories to the overall workout energy expenditure.

How do You Develop a HIIT Exercise Program?

When developing a HIIT program, consider the duration, intensity, and frequency of the work intervals and the length of the recovery intervals. Intensity during the high intensity work interval should range a 80% of your estimated maximal heart rate. As a good subjective indicator, the work interval should feel like you are exercising “hard” to “very hard”. Using the talk test as your guide, it would be like carrying on a conversation, with difficulty. The intensity of the recovery interval should be 40-50% of your estimate maximal heart rate: This would be a physical activity that felt very comfortable, in order to help you recover and prepare for your next work interval.
The relationship of the work and recovery interval is important. Many studies use a specific ratio of exercise to recovery to improve the different energy systems of the body. For example, a ratio of 1:2, meaning a 2-minute hard work (or high intensity) bout followed by a 3-minute recovery (or low intensity) bout. These 1:1 interval workouts often range about 3, 4, or 5 minutes followed by an equal time in recovery. Another popular HIIT training protocol is called the ‘spring interval training method’. With this type of program the exerciser does about 30 seconds of sprint or near full-out effort, which is followed by 4 to 4.5 minutes of recovery. This combination of exercise can be repeated 3 to 5 times. These higher intensity work efforts are typically shorter bouts (30 seconds with sprint interval training).

What are the Safety Concerns with HIIT Training?

Persons who have been living rather sedentary lifestyles or periods of physical inactivity may have an increased coronary disease risk to high intensity exercise. Family history, cigarette smoking, hypertension, diabetes (or pre-diabetes), abnormal cholesterol levels and obesity increase this risk. Medical clearance from a physician may be an appropriate safety measure for anyone with these conditions before starting HIIT or any exercise training. Prior to beginning HIIT training a person is encouraged to establish a foundational level of fitness. This foundation is sometimes referred to as a “base fitness level”. A base fitness level is consistent aerobic training (3 to 5 times a week for 20 to 60 min per session at a somewhat hard intensity) for several weeks that produces muscular adaptations, which improve oxygen transport to the muscles. Establishing appropriate exercise forms and muscle strength are important before engaging in regular HIIT to reduce the risk of musculoskeletal injury.

Regardless of age, gender and fitness level, one of the keys to safe participation of HIIT training is for all people to modify the intensity of the work interval to a preferred challenging level. Safety in participation should always be primary priority, and people should focus more on finding their own optimal training intensities as opposed to keeping up with other persons.

How Many Times a Week Can you do a HIIT Workout?

HIIT workouts are more exhaustive than steady state endurance workouts. Therefore, a longer recovery period is often needed. Perhaps start with one HIIT training workout a week, with your other workouts being steady state workouts. As you feel ready for more challenge, add a second HIIT workout a week, making sure you spread the HIIT workouts throughout the week.

Final HIIT Message

Interval training has been an integral part of athletic training programs for many years because a variety of sport and recreational activities require short bursts of movement at high intensities. Interval training is becoming an increasingly recognized and well-liked method of training. The incorporation of interval training into a general conditioning program will optimize the development of cardiorespiratory fitness as well as numerous other health benefits. Give HIIT a try.

Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity—such as 30 minutes a day of brisk walking—significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many doctors have found, exercise can help you stay on a diet and lose weight! What’s more, regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

The First Step

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you’re ready to begin an exercise program or not.

• Has your doctor ever said that you have a heart condition so that you should participate in physical activity only as recommended by a doctor?
• Do you feel pain in your chest during physical activity?
• In the past month, have you had chest pain when you were not doing physical activity?
• Do you feel that you are in bad shape or out of shape?
• Have you experienced any joint pain or poor flexibility?
• Have you used cardiac drugs to control you blood pressure or a heart condition?
• Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more question, if you are over 40 years of age and have recently been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it is likely that you can safely begin exercising.

Prior to Exercise

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.