AUM

American University Of The Middle East

# PES111

# Designing your own exercise program

1. Have a Plan
2. Determine that exercise is safe for you.
3. Assess how fit you are.
4. Decide what your goals are.
5. Choose the right activities to help you get there.

# Designing your own exercise program

1. Have a Plan
   - Helps you make gradual but steady progress toward your goal.
2. Determine that exercise is safe for you.
   - Getting Medical Clearance
     - People of any age who are not at high risk for serious health problems can safely exercise at a moderate intensity (60% or less of maximum heart rate) without a prior medical evaluation.
     - If you are male and under 40 or female and under 50 and in good health, vigorous exercise is probably safe for you.
     - If you do not fit into these age groups, or if you have health problems – especially high blood pressure, heart disease, muscle or joint problems, or obesity – see your physician before starting a vigorous exercise program.

# Designing your own exercise program

3. Assess how fit you are.
   - Assess your current level of physical activity and fitness for each of the five health-related  fitness components.

What are the reasons behind fitness testing?

# Fitness Testing

There are many reasons for you to do fitness testing.

**Get a Baseline** — The initial fitness testing session can give you an idea of where your fitness levels are at the start of a program, so that future testing can be compared to this and any changes can be noted.

**Compare Results to Others** — By comparing results to others such as successful athletes in your sport or your classmates, you can see the areas which need improvement, and the fitness program can be modified accordingly.

**Identify Weaknesses and Strengths** — You can determine your strengths and weaknesses by comparing fitness test results to other athletes in the same training group, the same sport, or in a similar population group.

https://www.topendsports.com/

**Design a Program** — Once the areas of strength and weakness have been identified, an appropriate training program can de designed to workout efficiently and maximize gains by concentrating your efforts on the areas of greatest need.

**Monitor Progress** — Comparing fitness test results to a baseline or previous test can be used to monitor your changes in fitness. Testing sessions should be planned at the beginning of a new training phase, and at least at the end of each phase. The period between tests may range from two weeks to six months. It usually takes a minimum of 2-6 weeks to see a noticeable change in any aspect of fitness.

**Assess Goals** — Specific and general fitness goals should be set after the initial testing. By repeating the tests at regular intervals, you can get an idea of the effectiveness of the training program and whether your goals are being achieved.

**Provide Incentives** — The incentive to improve can often be provided by the 'goal' of a certain test score. By knowing that they will be tested again later, you can aim to improve in that area.

# Fitness Testing for Sprinters

***Example Testing List for Sprinters***

- Skinfolds
- Height
- Body mass
- Speed — sprint test
- Acceleration — speed over 5 or 10 meters
- Leg power — vertical jump
- Anaerobic Capacity — 30-second Wingate test
- Flexibility — Sit and Reach

| Fitness Test | Result |
|---|---|
| body mass (kg) | 72.6 |
| height (cm) | 183.4 |
| Skinfolds, sum of 7 sites (mm) | 29.1 |
| Grip Strength (kg) | 49 |
| 1RM Bench Press (kg) | 110 |
| Vertical Jump (cm) | 85 |
| Sit and Reach (cm) | +15 |
| $VO_{2max}$ (ml/kg/min) | 60 |

***An Example for a Sprinter***

Here is an example of a series of tests performed on an Olympic sprinter, 400m runner Sean Wroe, conducted in 2009 (as detailed in the Herald Sun Newspaper).

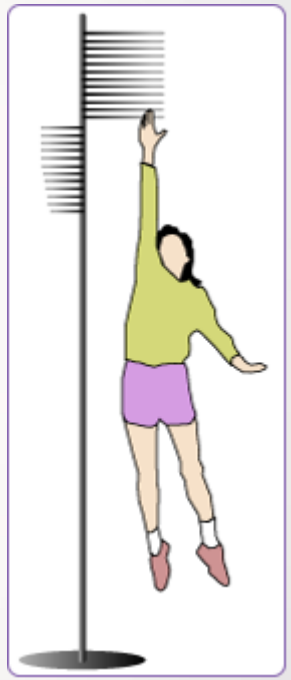
# Fitness Testing for Sprinters

***Example Testing List for Sprinters***

•Speed — sprint test

The test involves running a single maximum sprint over a set distance, with time recorded. (10m, 20m, or 40m)

Skinfolds



Leg power — vertical jump

•Anaerobic Capacity — 30-second Wingate test

The Wingate test is a cycle test of anaerobic leg power, conducted over 30 seconds.

The subject is instructed to pedal as fast as possible for 30 seconds.

Flexibility — Sit and Reach

# 1-RM Tests (repetition maximum tests)

The one repetition maximum tests (1-RM) is a measure of the maximal weight a subject can lift with one repetition.

**purpose:** to measure maximum strength of various muscle and muscle groups.

# 20m Multistage Fitness Test (Beep Test)

The 20m multistage fitness test (MSFT) is a commonly used maximal running aerobic fitness test.

VIDEO -https://www.youtube.com/watch?v=gTW22RZacCc

# Yo-Yo Endurance Test

The Yo-Yo Endurance Test (continuous) is a variation of the beep test.

**purpose:** The test evaluates an individual's aerobic endurance fitness.

https://www.youtube.com/watch?v=nkOk_P5VnOA

# 20 Yard Agility Test

The 20-yard agility run is a simple measure of an athlete's ability to accelerate, decelerate, change direction, and to accelerate again. The participants run to a marker 5 yards either side of them, touching the lines with their foot.

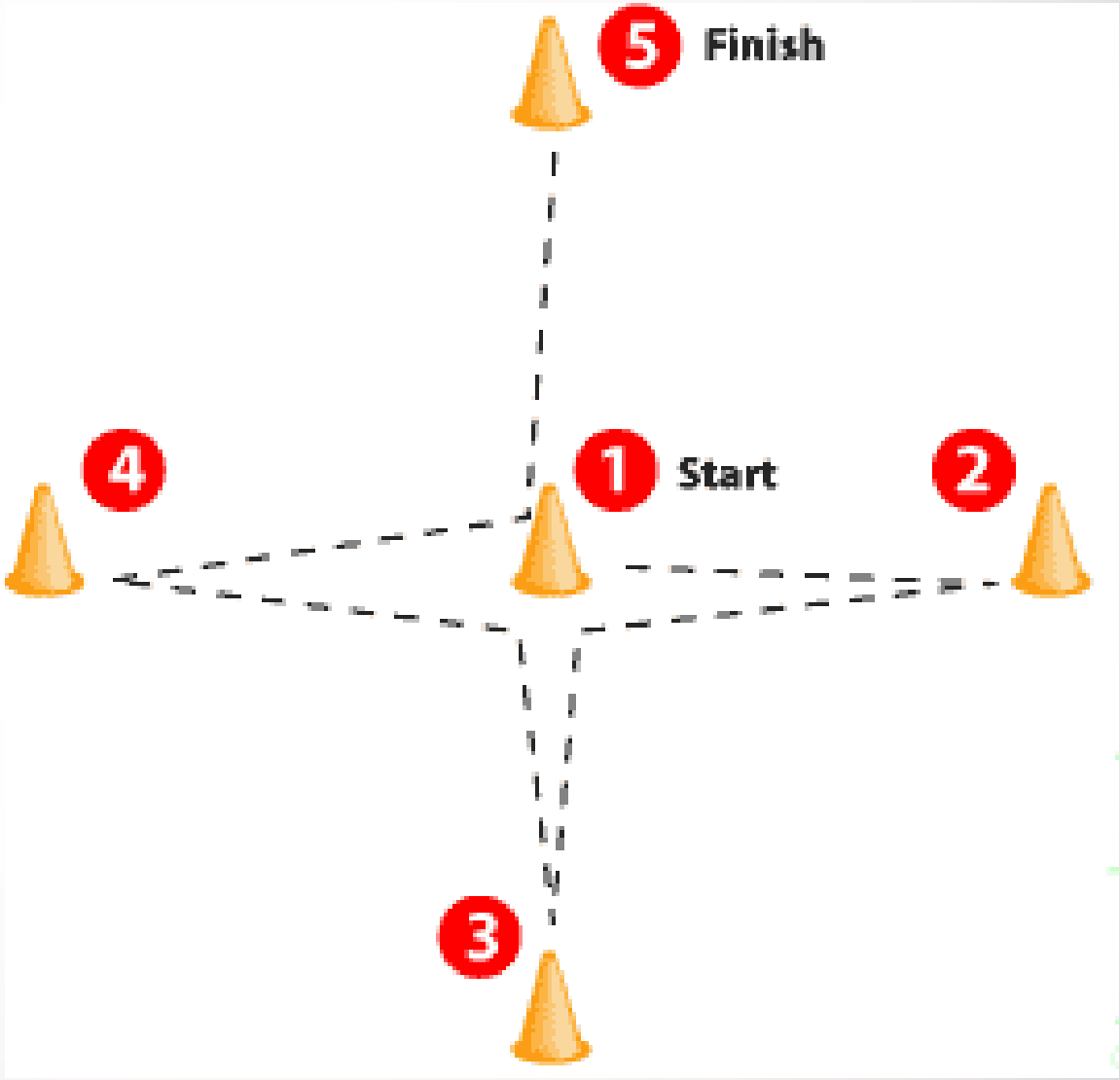
**purpose:** to measure an athlete's ability to accelerate, decelerate and change direction.

https://www.youtube.com/watch?v=z-wV9O8y-a0

# Agility Cone or Compass Drill

The Agility Cone Drill is a lateral movement test that measures the agility of the athlete, especially body control and change of direction. This test is also called the compass drill, due to the agility course set out in all directions like points on a compass.

**purpose:** this is a test of speed, explosion, body control and the ability to change direction (agility).



# 400 meter Run Test

The 400m run test requires the participants to run at maximal effort over 400m.

**purpose:** The aim of this test is to complete 400 meters in the quickest possible time. This is a test of an athlete’s ability to run quickly over a short distance.

# 7-Stage Abdominal Strength Test

This is an easy to perform sit-up test of abdominal strength that you can do with large groups all at once. Participants perform sit-up actions of increasing difficulty, with the highest level successfully completed sit-up their measure of abdominal strength.

**purpose:** This sit-up test measures abdominal strength, which is important in back support and core stability.

https://www.youtube.com/watch?v=nem-y1qGWeo

**scoring:** There are 8 levels ranging in difficulty from very poor to elite. The highest level sit-up correctly completed is recorded.

| Level | Rating | Description |
|---|---|---|
| 0 | very poor | cannot perform level 1 |
| 1 | poor | with arms extended, the athlete curls up so that the wrists reach the knees |
| 2 | fair | with arms extended, the athlete curls up so that the elbows reach the knees |
| 3 | average | with the arms held together across abdominals, the athletes curls up so that the chest touches the thighs |
| 4 | good | with the arms held across chest, holding the opposite shoulders, the athlete curls up so that the forearms touch the thighs |
| 5 | very good | with the hands held behind head, the athlete curls up so that the chest touches the thighs |
| 6 | excellent | as per level 5, with a 5 lb (2.5 kg) weight held behind head, chest touching the thighs |
| 7 | elite | as per level 5, with a 10 lb (5 kg) weight held behind head, chest touching the thighs |

# Apley's Shoulder Scratch Test

Apley's Scratch Test is a simple flexibility test of the shoulder. There are two parts of the test, reaching the opposite scapula (shoulder blade) from either above or below.

**purpose:** This test measures shoulder range of motion.

https://www.youtube.com/watch?v=oORkZ2gLlbA

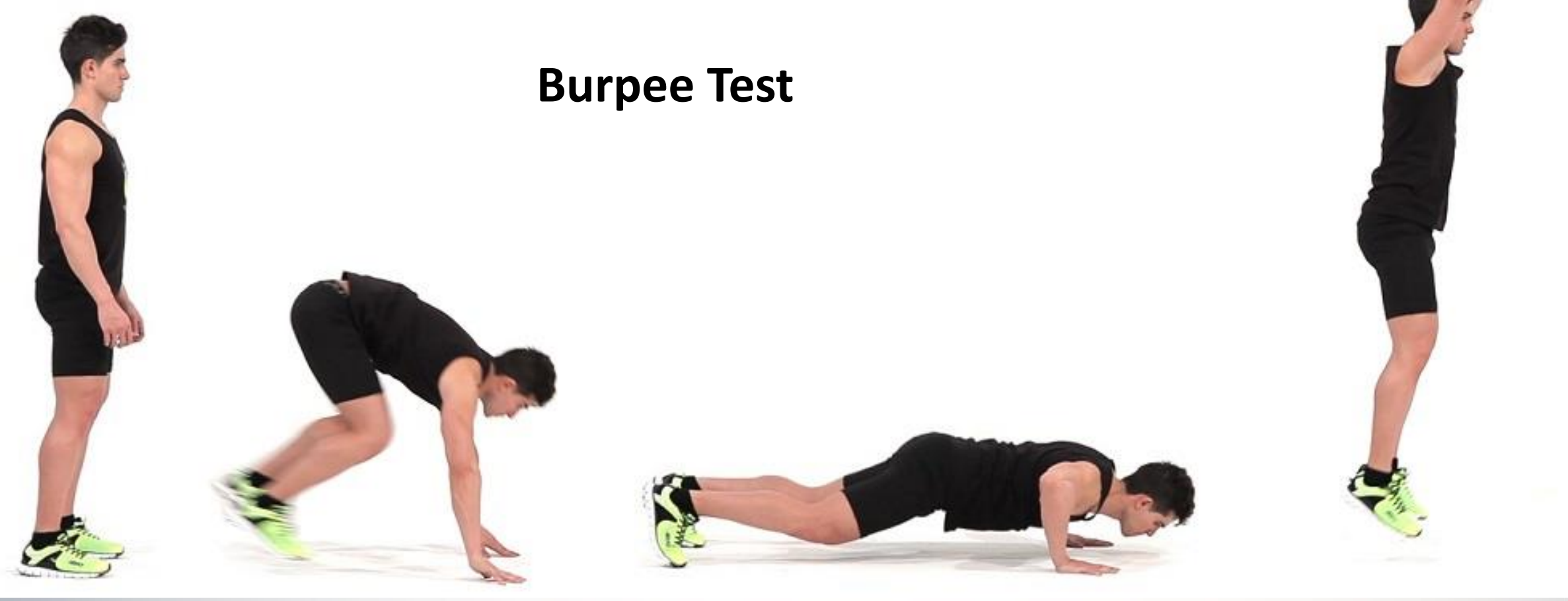
# Standing Balance Test

This is a simple balance test that can be modified to suit your situation. In this test the person stands on one leg for as long as possible.

**purpose:** to measure whole body balance

Single Leg Stance Assessment
https://www.youtube.com/watch?v=A9pi7_JRgwQ

# Burpee Test



This burpee test is a simple test of strength endurance, agility, balance and coordination, in which the participant attempts the maximum number of burpees in a set time period.

**purpose:** this is a test of strength endurance. Though, body control, balance and coordination are also factors.

# Reaction Time Ruler Test

This test uses the known properties of gravity to determine how long it takes a person to respond to the dropping of an object by measuring how far the object can fall before being caught.

**purpose:** to measure reaction time, hand-eye quickness and attentiveness.

https://www.youtube.com/watch?v=x0JU5p8WBZQ

# Alternate-Hand Wall-Toss Test

The Alternate-Hand Wall-Toss Test is a test of hand-eye coordination, where the participant throw a ball against a wall from one hand in an underarm action, and attempt to catch it with the opposite hand.

**purpose:** to measure hand-eye coordination.

https://www.youtube.com/watch?v=mRJ_rQASNeQ

# Designing your own exercise program

4. Decide what your goals are.
   - The ultimate general goal – wellness that lasts a lifetime.
   - Then there will be a specific goal.
   - Think carefully about your overall goals and be clear about why you are starting a program.

# Designing your own exercise program

5. Choose the right activities to help you get there.
   - A balanced program includes activities to develop all health-related components of fitness:

   Cardiorespiratory Endurance is developed by continuous rhythmic movements of large-muscle groups in activities such as walking, jogging, cycling, swimming, aerobic dance, HIIT, and other forms of group exercise.

   Choose activities that you enjoy and that are convenient.

   Muscular strength and endurance can be developed through resistance training.

   Flexibility is developed by stretching the major muscle groups regularly and with proper technique.

   Healthy body composition can be developed through a sensible diet and a program of regular exercise.

# Guidelines for Training

- Train the way you want your body to change
  - Stress your body so that it adapts in the desired manner.
- Train regularly
  - Consistency is key.
- Strat slow, and get in shape gradually
- Warm up before exercise
- Cool down after exercise
- Exercise safely
- Listen to your body and get adequate rest
- Cycle (periodization) the volume and intensity of your workouts
  - Don’t train at the same intensity during every workout

- Vary your activities
  - Change your exercise program from time to time

## TAKE CHARGE
## Vary Your Activities

Do you have a hard time thinking of new activities to try? Check the boxes next to the activities listed here that interest you. Then look for resources and facilities on your campus or in your community.

### OUTDOOR EXERCISES

- ☐ Walking
- ☐ Running
- ☐ Cycling
- ☐ Swimming
- ☐ In-line skating
- ☐ Skateboarding
- ☐ Rowing
- ☐ Horseback riding
- ☐ Hiking
- ☐ Backpacking
- ☐ Ice skating
- ☐ Fly fishing

### SPORTS AND GAMES

- ☐ Basketball
- ☐ Tennis
- ☐ Volleyball
- ☐ Golf
- ☐ Soccer
- ☐ Softball
- ☐ Water skiing
- ☐ Windsurfing
- ☐ Badminton
- ☐ Ultimate Frisbee
- ☐ Bowling
- ☐ Surfing
- ☐ Dancing
- ☐ Snow skiing
- ☐ Gymnastics

### EXERCISES YOU CAN DO AT HOME AND WORK

- ☐ Desk exercises
- ☐ Calisthenics
- ☐ Gardening
- ☐ Housework
- ☐ Yard work
- ☐ Sweeping
- ☐ Exploring on foot
- ☐ Doing a walk-a-thon
- ☐ Painting walls
- ☐ Walking the dog
- ☐ Shopping
- ☐ Doing errands

### HEALTH CLUB EXERCISES

- ☐ Weight training
- ☐ Circuit training
- ☐ Group exercise
- ☐ Treadmill
- ☐ Stationary bike
- ☐ Ski machine
- ☐ Supine bike
- ☐ Rowing machine
- ☐ Plyometrics
- ☐ Water aerobics
- ☐ Elliptical trainer
- ☐ Medicine ball
- ☐ Rope-skipping
- ☐ Yoga/Pilates
- ☐ Racquetball

- Train with a partner
- Train your mind
  - Becoming fit requires commitment, discipline, and patience
- Fuel your activity appropriately
  - Good nutrition and fluids for hydration
- Have fun
- Track your progress
- Get help and advice if you need it
- Keep your exercise program in perspective
  - As important as physical fitness is, it is only part of a well-rounded life.

## Table 2.3 ACSM Exercise Recommendations for Fitness Development in Healthy Adults

| | |
|---|---|
| **EXERCISE TO DEVELOP AND MAINTAIN CARDIORESPIRATORY ENDURANCE AND BODY COMPOSITION** | |
| **F**requency of training | At least five days per week for moderate-intensity exercise and at least three days per week for vigorous-intensity exercise. |
| **I**ntensity of training | 55/65–90% of maximum heart rate or 40/50–85% of heart rate reserve or oxygen uptake reserve. (Reserve refers to the difference between resting and maximum values of heart rate or oxygen consumption.) The lower-intensity values (55–64% of maximum heart rate and 40–49% of heart rate reserve plus rest) are most applicable to unfit individuals. For average individuals, intensities of 70–85% of maximum heart rate or 60–80% of heart rate reserve plus rest are appropriate. Well-trained people can train at near maximum intensities. These methods increase exercise intensity within the limits of each person's reserve capacity. |
| **T**ime (duration) of training | 20–60 total minutes per day of continuous or intermittent (in sessions lasting 10 or more minutes) aerobic activity. Duration depends on the intensity of activity; thus, low-intensity activity should be conducted over a longer period of time (30 minutes or more). Low- to moderate-intensity activity of longer duration is recommended for nonathletic adults. |
| **T**ype (mode) of activity | Any activity that uses large-muscle groups, can be maintained continuously, and is rhythmic and aerobic in nature—for example, walking-hiking, running-jogging, bicycling, cross-country skiing, aerobic dancing and other forms of group exercise, rope-skipping, rowing, stair-climbing, swimming, skating, and endurance game activities. |
| **V**olume | Expend the equivalent of at least 1,000 calories per week, which is equivalent to about 150 minutes per week of moderate-intensity exercise. |
| **P**rogression | Adjust frequency, intensity, and/or time until you reach your goal. |
| **EXERCISE TO DEVELOP AND MAINTAIN MUSCULAR STRENGTH AND ENDURANCE, FLEXIBILITY, AND BODY COMPOSITION** | |
| Resistance training | One set of 8–10 exercises that condition the major muscle groups, performed two to three days per week. Most people should complete 8–12 repetitions of each exercise to the point of fatigue; practicing other repetition ranges (e.g., 3–5 or 12–15) also builds strength and endurance; for older and frailer people (approximately 50–60 and older), 10–15 repetitions with a lighter weight may be more appropriate. Multiple-set regimens will provide greater benefits if time allows. Any mode of exercise that is comfortable throughout the full range of motion is appropriate (e.g., free weights, kettlebells, calisthenics, elastic bands, or weight machines). |
| Flexibility training | Static stretches, performed for the major muscle groups at least two to three days per week, ideally daily. Stretch to the point of tightness, holding each stretch for 10–30 seconds; perform 2–4 repetitions of each stretch, for a total of 60 seconds of stretching time for each exercise. |

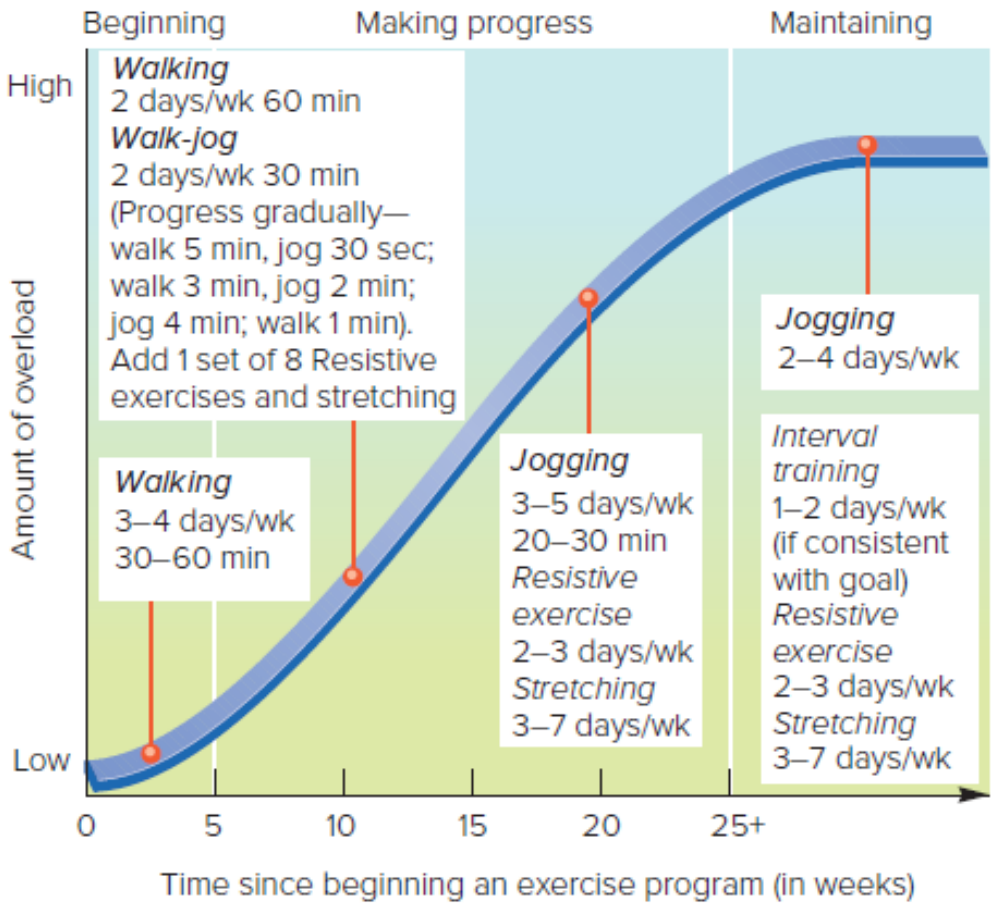



**FIGURE 2.5 Progression of an exercise program.** This figure shows how you can increase the amount of overload gradually in a walking and running program. Begin with slow walking for several weeks and gradually pick up the pace. Gradually introduce short periods of running during your walks, progressively running farther and walking less until you can run continuously. Add interval training after four to six weeks of jogging—if you want to reach higher levels of fitness. Regardless of the activity and the exercise program, begin slowly and progress gradually. After you achieve the desired level of fitness, you can maintain it by exercising three to five days a week.