Chapter Twelve: Improving Your Personal Fitness
13th edition, pp. 337-362
12th edition, pp. 329-353 (chapter 11)

what is physical fitness?
the ability to perform regular to moderate physical activity without great fatigue

what is exercise?
systematic exercise done at a specific frequency, intensity, and duration to achieve physical fitness

benefits of physical exercise!
(differing interpretations from text)

- Reduced Cardiovascular disease: Moderate activity reduces incidences of high blood pressure, high cholesterol, with reduction in heart attacks and strokes.
- Reduction in metabolic syndrome which contributes to heart attacks and diabetes
- Reduced cancer risk: Up to 25-37% of cancers can be avoided with active lifestyles
- Improved bone mass: With load bearing activity
- Improved weight management: An essential tool in maintaining a healthy weight while elevating metabolic rate to burn calories while not exercising
- Improved immunity: Reduces one’s susceptibility to disease
- Improved mental health and stress reduction: Feel better about themselves...higher self-esteem, better learning, better concentration, less stress
- Longer lifespan: significantly reduces long term health risks compared to those who don’t exercise

exercise as a lifestyle

150 min a week of moderate activity, with 2 days a week strength training is often enough...more is better!

Only 20.5% of US Adults meet these guidelines
calories burned scale

health related components of physical fitness

getting the most from your workout
not in texts

the FITT principle

determining exercise intensity

MHE-110: Chapter Twelve - Improving Your Personal Fitness
Dr. Dave Shrock

how our body metabolizes oxygen

Aerobic: with oxygen: up to 90% of target heart rate
Anaerobic: without oxygen: over 90% of target heart rate
Talk Test: 64-75% of max HR where you can talk while exercising

copies of worksheet also on the class website
**strength-resistance training**

- **muscle strength**: the amount of force that a muscle is capable of exerting or lifting for a short period of time
- **muscle endurance**: the muscles ability to exert force repeatedly without fatiguing over a period of time
- **repetition**: lifting a weight for a set number of times
- **set**: a group of repetitions
- **resistance or weight training can also include:**

**anatomy of a muscle**

**strength vs endurance lifting**

- **selecting your workout machine**

- **limited equipment in MJC east campus facilities**
- **check out promotional offers or group/family discounts at area clubs**
- **be cautious if hiring a personal trainer (see text page 352)**

**flexibility in the total fitness picture**

- **flexibility is how much range of motion you have in a particular joint**
- **flexibility is important because:**
  - helps improve posture
  - helps prevent injury by maintaining balance and blood flow to the muscles
  - helps strengthen muscles through use of body weight and balance

**types of flexibility activities**

- **static stretching**: holding a stretch for 30 seconds or longer to ‘point of tension’
- **PMF**: proprioceptive neuromuscular facilitation – alternating contraction and relaxation of a muscle group - ‘buddy stretching’
- **yoga**: ancient practice of stretching and relaxation to promote balance, coordination, flexibility (also next slide)
- **Pilates**: mid-body or ‘pillar’ or ‘core’ strengthening through specific exercises
- **Tai Chi**: ancient Chinese practice promoting balance, coordination, and stretching
common yoga systems
- Iyengar yoga focuses on precision and alignment in the poses. Standing poses are basic to this style and are often held longer than in other styles.
- Hatha yoga is the pure form of this form on a specific flow of poses with an emphasis on strength and agility that creates internal heat.
- Power yoga, a style growing in popularity, is a derivative of hatha yoga.
- Vinyasa is similar to power yoga but does not incorporate a specific flow of poses. It is performed in temperatures of 100°F, or even a bit higher.
- Proponents say that the heat increases the body's ability to move and stretch without injury.

optimal core or abdominal workout
The human spine or 'backbone' is 38 vertebra or boney articulations held in line by cartilage, tendons, ligament, and supported by muscle. The spine is very susceptible to injury without support.

Also great for pillar work:
- Iron cross for obliques
- Superman for erector spinale
- Bridge for overall core strength
- Pilates and yoga workouts

developing a progressive plan
30 minutes a day of activity all at once, or broken up provides substantial benefits
Yoga, boot camps, spin, aerobic classes, and/or jogging/power walking are the most popular types of individual exercise

the optimal 1 hour workout
not in texts
- 5-10 min. easy warm-up to 120 BPM (+/-60% VO2 max)
- 5-10 min. stretching or flexibility activity
- 25-35 min. exercise within target heart rate cardio-resistance-machine-continuous, etc.
- 5-15 min. cool down and stretching

- don't compromise the warm-up or cool down periods if you're short of time...you'll risk injury and stiffness
- eat or drink a carbohydrate rich snack within 1 hr. after exercising to refuel your exhausted body

HIIT – High Intensity Interval Training
- recent studies confirm HITT workouts may provide similar benefits of longer workouts
- CrossFit, Insanity, P90X programs are examples
- broad range, functional movements in intense 2min intervals, with short rests, lasting 10-30min total
- not for all: dependent on level of fitness and preferences...great for those with limited time!
- best to make part of total fitness program...2/3 times per week...allow ample recovery

training progression
not in texts

Principle of Increasing Demand: You must progressively increase the load on your body to see improvement. This can be done through increased resistance, increased intensity, or increased duration. Any of these can be applied in combination.

Microcycles and Macrocycles: Microcycles are small units of time, typically days or weeks, within which the training intensity is varied. Macrocycles are longer units of time, typically months or years, within which the training intensity is kept constant.

Sustained Improvement: The body adapts to training, which leads to improved performance. However, the body can only adapt to a certain level of intensity before it plateaus. To continue improving, the intensity of training must be increased.
technology to the rescue!
not in texts

♦ SmartPhone based apps:
  • Food for fitness and My Fitness Pal
  • 0 to 5-k Run Training
  • SWORKIT – daily circuit training without equip.

♦ Smart watches:
  • FitBit, Garmin

♦ Heart rate monitors

♦ Numerous internet based workout plans that help set-up and monitor your progress

how to buy a running shoe

♦ Shop in the afternoon to get the right fit.
♦ Try on both shoes with the same type of sock you will wear when running.
♦ Try on several different models to make a good comparison. Walk or jog around the store in the shoes.
♦ Check the quality of the shoes. Look at the stitching, eyestakes, gluing. Feel for bumps inside the shoe.
♦ The sole should flex where your foot flexes. Look for shoes with removable insoles to accommodate orthotic devices.
♦ Allow a half-inch between the end of the shoe and your longest toe when you stand up.
♦ The heel counter should fit snugly so that there is no slipping at the heel.
♦ Shoes should be comfortable on the day you buy them. Don’t rely on a break-in period.
♦ Consult the staff at running specialty stores for help with selecting the correct shoes.

Fleet Feet – north Modesto off Standiford, and Lincoln Center, Stockton

exercise related injuries

♦ exercise injuries are often caused by:
  • lack of rest
  • improper warm-up and cool down
  • incorrect intensity or duration for fitness level
  • incorrect equipment
  • incorrect practice of exercise or activity
  • carelessness, or simply bad luck

♦ currently the best and most important first aid treatment of an injury: **RICE**
- Rest - Ice - Compression - Elevation
  - do not use heat in the first 48 hrs. after an injury
  - apply ice for not more than 15 minutes at a time

overcoming obstacles and sticking with it

♦ Make it enjoyable: Pick an activity that you enjoy and is appropriate for your fitness/skill level
♦ Start slowly and gradually: Increasing frequency/intensity to allow you body to adapt
♦ Make only one lifestyle change at a time: Focus on one behavior change at a time and be patient
♦ Use the SMART goal setting strategy: To focus on your important components. Remember it will take a min. 21-28 days…be patient
♦ Chose the best time and block it out in your schedule: Morning or evening, during lunch, set a time, though be flexible.
♦ Take lapses in stride: Life happens so take them in stride and get back to your program ASAP
♦ Reward yourself: Remember to reward yourself when you reach a goal.

cold weather:
♦ dress in layers
♦ be conscious of wind chill
♦ don’t get overly cold lowering your core temperature
♦ wear a hat and gloves

hot weather:
♦ keep hydrated with water or diluted sports drinks
♦ wear light coloured loose clothes
♦ be aware of the effects of humidity or the sun
♦ try not to exercise in the heat of the day: 3:00-6:00pm

training surfaces:
♦ select soft surfaces: grass, canal banks, outside lanes of tracks, etc.
♦ concrete is one of the hardest surfaces know to man!