The visual food label: cool ranch Doritos

reading labels matters!

The components of Cool Ranch Doritos include milk (1), salt (2) and Blue No. 1 (3) for coloring

Chapter Twelve: Improving Your Personal Fitness

13th edition, pp. 337-362
12th edition, pp. 329-353 (chapter 11)

13th edition, pp. 3338-339; 12th edition, pp. 330-332
(differing interpretations from text)

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

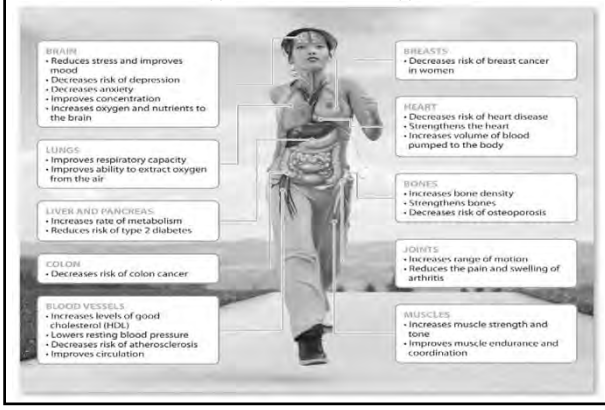
benefits of physical exercise!

13th edition, pp. 340-342; 12th edition, pp. 330-332

- **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

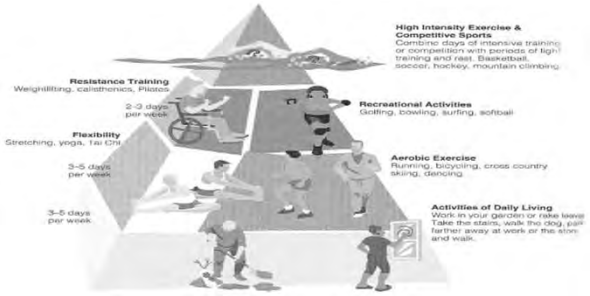
benefits of physical exercise *(con't)*

13th edition, pp. 338-342; 12th edition, pp. 330-335



exercise as a lifestyle

13th edition, pp. 343-344; 12th edition, pp. 330-332; (diagram not in texts)

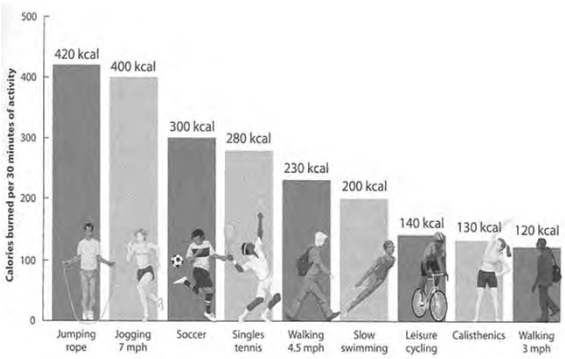


150min a week of moderate activity, with 2 days a week strength training is often *enough…more is better!*

Only 20.5% pf US Adults meet these guidelines

calories burned scale

13th edition, p 341; 12th edition, p. 333 (table 12.2)



health related components of physical fitness

13th edition, pp. 343-344; 12th edition, pp. 330-335

Cardiorespiratory fitness	Muscular strength	Muscular endurance	Flexibility	Body composition
Ability to sustain aerobic whole-body activity for a prolonged period of time	Maximum force able to be exerted by single contraction of a muscle or muscle group	Ability to perform muscle contractions repeatedly without fatiguing	Ability to move joints freely through their full range of motion	The relative proportions of fat mass and fat-free mass in the body Covered in chapter 11

getting the most from your workout

not in texts

Activity	Calories per Hour[1]	Average Calories Used[2]
Aerobic dancing (med.)	445	222 (for 1/2 hr.)
Running in place or skipping rope (50–60 steps/min.)	510	255 (for 1/2 hr.)
Downhill skiing	595	1,190 (for 2 hrs. on slope.)
Swimming, 5.5 min./ 220 yds.	600	300 (for 1/2 hr.)
Hill climbing	600	300 (for 1/2 hr.)
Touch football	600	300 (for 1/2 hr. actual play)
Soccer	600	600 (for 1 hr.)
Snow shoveling, light	610	306 (for 1/2 hr.)
Jogging, 11 min./mi.	655	327 (for 1/2 hr.)
Cross-country skiing, 12 min./mi.	700	2,800 (for 4 hrs.)
Basketball, full court	750	750 (for 1 hr.)
Squash, racquetball	775	775 (for 1hr.)
Martial arts (judo, karate)	790	395 (for 1/2 hr.)
Running, 7.5 min./mi.	800	400 (for 1/2 hr.)
Ice hockey, lacrosse	900	900 (for 1 hr.)

[1]Calories expended by average 158-pound adult.
[2]3500-calorie expenditure = 1 pound weight loss, if caloric intake is not reduced.

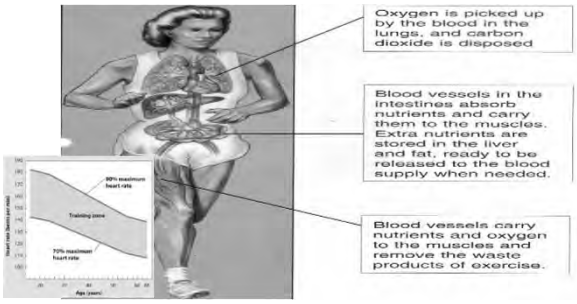
the FITT principle

13th pp; 347-348; 12th edition, p. 339 (table 12.4)

	Cardiorespiratory Endurance	Muscular Fitness	Flexibility
Frequency	3–5 days per week	2–3 days per week	Minimally 2–3 days per week
Intensity	64%–96% of maximum heart rate	60%–80% of 1 RM	To the point of mild tension
Time	20–60 minutes	8–10 exercises, 2–4 sets, 8–12 reps	10–30 seconds per stretch, 2–3 reps
Type	Any moderate to vigorous rhythmic, continuous activity	Resistance training (with body weight and/or external resistance) for all major muscle groups	Stretching, dance, or yoga exercises for all major muscle groups

how our body metabolizes oxygen

13th edition, pp. 347-349; 12th edition, pp. 339-341



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*

determining exercise intensity

13th edition, pp. 346-347; 12th edition, pp. 339-341 (diagram on class website)

how to calculate your most effective training workout range:

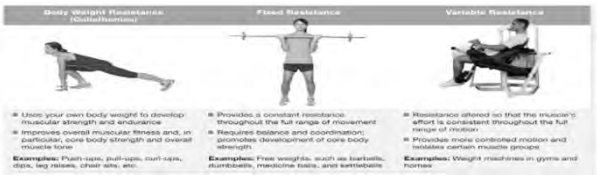
constant	226 men or 220 wm	
your age:		
subtract age from constant *(above)*. This equals your estimate maximum heart rate:		
your resting heart rate is: *(calculate this by taking your pulse for 15 sec. and x 4)*		
subtract resting heart rate from estimated maximum heart rate:		
multiply by	60%	90%
equals		
add resting heart rate		
art rate zone, or % of VO_2 max for aerobic exercise		

copies of worksheet also on the class website

strength-resistance training

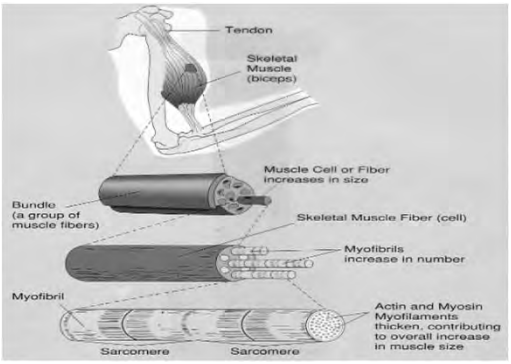
13th edition, pp. 349-351; 12th edition, pp. 341-342

- **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:**



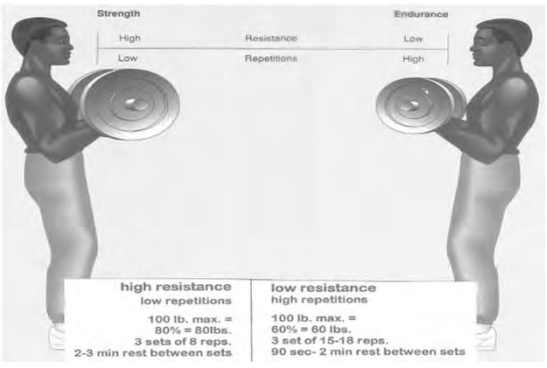
anatomy of a muscle

not in texts



strength vs endurance lifting

13th edition, pp. 350-351; 12th edition, pp. 341-342; (diagram not in texts)



selecting your workout machine

13th edition, pp. 349-350; 12th edition, pp. 333-334

Machine	Advantages
Elliptical machine	This machine is designed for nonimpact cardiovascular exercise. Some machines are equipped with handles for arm action that improve the overall workout.
Stair climber	This machine is a great lower body workout and most can be adjusted from very easy to very difficult.
Stationary bike	This machine provides an excellent lower body workout. It is generally easy to use and most come with varied resistance programs. Recumbent bikes offer less strain on the back and knees.
Treadmill	This machine offers a great lower body workout. It is relatively easy to use.

- 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

13th edition, pp. 351-352; 12th edition, p. 342

- **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

13th edition, pp. 351-352; 12th edition, p. 334

- **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

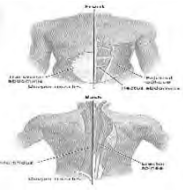
13th edition, pp. 351-352; 12th edition, p. 345; (diagram not in texts)

- 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.
- Ashtanga yoga in its pure form is based 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 ashtanga yoga.
- Bikram yoga, or hot yoga, is similar to power yoga but does not incorporate a specific flow of poses. Literally the hottest yoga going, 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

13th edition, pp. 354; 12th edition, pp. 345-346

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
- supermen for erector spinale
- bridge for overall core strength
- Pilates and yoga workouts

developing a progressive plan

13th edition, pp. 353-354; 12th edition pp. 343-345 (diagram not in texts)

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$_{(+/-60\%\ VO_2\ max)}$
- **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

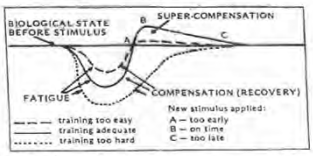
13th edition, pp. 349; 12th edition, p. 340

- 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

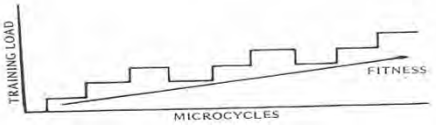
training progression

not in texts

The Law of Training Overload: if the training load was optimal, after recovery, the athlete will be more fit as a result adaptation than before the "stressor" or workout was applied. Recovery, adaptation and super-compensation should occur with-in 36-72 hours after the workout.



Principle of Increasing Demands: You must progressively increase the 'load'or workout volume or intensity for the performance level to improve. The progression can be optimally applied with intermittent recovery or compensation cycles every 21-28 days



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

anatomy of a running shoe

13th edition, pp. 356-357; 12th edition, p. 347-8

how to buy a running shoe

13th edition, pp. 356; 12th edition, p. 348

- 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, eyelets, 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 shoe.

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

exercise related injuries

13th edition, pp. 358; 12th edition, pp. 347-349

- **exercise injures 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 – **I**ce – **C**ompression – **E**levation

  - do not use heat in the first 48 hrs. after an injury
  - apply ice for not more than 15 minutes at a time

training conditions

13th edition, pp. 357-358; 12th edition, pp. 348-349

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!

overcoming obstacles and sticking with it

13th edition, p. 353; 12th edition, p. 343

- **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.