The Basics of Exercise

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ACSM and CDC Recommendations

150 minutes
of moderate-intensity aerobic activity every week

2X per week
Muscle-strengthening activities on 2 or more days a week that work all major muscle groups

Exercise Benefits

- Reduction in all-cause mortality
- Blood pressure regulation
- Anxiety and depression management
- Prevention of weight gain
- Improved joint, bone, muscle, and functional health
- Reduction of colon and breast cancers
- Additional health benefits result from greater amounts of physical activity.
- Individuals who maintain a regular program of PA that is longer in duration, of greater intensity, or both are likely to derive greater benefit than those who engage in lesser amounts.

Reduction in Cardiovascular Disease Factors

- Reduced resting systolic/diastolic pressure
- Increased serum high-density lipoprotein cholesterol and decreased serum triglycerides
- Reduced total body fat, reduced intra-abdominal fat
- Reduced insulin needs, improved glucose tolerance
- Reduced blood platelet adhesiveness and aggregation
- Reduced inflammation

Other Benefits

- Decreased anxiety and depression
- Improved cognitive function
- Enhanced physical function and independent living in older individuals
- Enhanced feelings of well-being
- Enhanced performance of work, recreational, and sport activities
- Reduced risk of falls and injuries from falls in older individuals Prevention or mitigation of functional limitations in older adults
- Effective therapy for many chronic diseases in older adults

Health-Related Physical Fitness Components

- Cardiorespiratory endurance: the ability of the circulatory and respiratory system to supply oxygen during sustained physical activity
- Body composition: the relative amounts of muscle, fat, bone, and other vital parts of the body
- Muscular strength: the ability of muscle to exert force
- Muscular endurance: the ability of muscle to continue to perform without fatigue
- Flexibility: the range of motion available at a joint

Skill-Related Physical Fitness Components

- Agility: the ability to change the position of the body in space with speed and accuracy
- Coordination: the ability to use the senses, such as sight and hearing, together with body parts in performing tasks smoothly and accurately
- Balance: the maintenance of equilibrium while stationary or moving
- Power: the ability or rate at which one can perform work
- Reaction time: the time elapsed between stimulation and the beginning of the reaction to it
- Speed: the ability to perform a movement within a short period of time

Medical-Related Fitness Components

- Integumentary (skin, hair, nails, galds, nerves)
- Musculoskeletal
- Cardiovascular/lymphatic (vessels, tittuse, organs)
- Respiratory
- Neurologic
- Endocrine (hormones)
- Digestive/excretory/urinary
- Immune
- Reproductive

	Cardiorespiratory Endurance	Muscular Fitness	Flexibility
Frequency	3–5 days per week	2–3 days per week	Minimally 2–3 days per week
Intensity	64%–95% 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, 2–4 reps
Type	Any rhythmic, continuous, large muscle group 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

Strength Training

- Muscle-strengthening activities count if they involve all major muscle groups of the body: the legs, hips, back, chest, abdomen, shoulders, and arms.
- Exercises should exercise muscles on the front, back, upper and lower parts of the body; and involve lifting, lowering, pushing and pulling motions.
- Multiple joint exercises are time-efficient by using two muscle groups at the same time (i.e., chest press for pecs and triceps).
- For greatest strength gains do exercises through the full range of motion (ROM) of the joint being used.

Multiple-Joint Exercises

- Leg press (hip & knee joints)
- Chest/bench press (shoulder & elbow joints)
- Seated rowing (shoulder & elbow joints)
- Overhead/military press (shoulder & elbow joints)
- Lat pull (shoulder & elbow joints)

Single-Joint Exercises

- Crunches/curl-ups (front of the body)
- Back (back of the body)
- Leg extension (front of body, upper leg)
- Leg curl (back of the body, upper leg)
- Dorsiflexion (front of the body/lower leg, shin, anterior tibialis muscle)
- Calf press (back of the body)
- Hip adductor/abductor (inner/outer thigh)
- Rotary Torso (external & internal obliques, fan-like muscles that wrap around sides)

Understand the Appropriate Rep Range

- 1RM is the most weight that could be lifted, pushed, or pulled one time (one repetition).
- 80% of 1RM corresponds to being able to lift/push/pull a weight 10 repetitions (RM) to muscle fatigue or in proper form (same form as first repetition).
- 50% of 1RM corresponds to being able to lift/push/pull a weight 30 repetitions (RM) to muscle fatigue or in proper form (same form as first repetition).
- Most training will be ~70-85% 1 RM

Consider Functional Training

- Squats: being able to get in and out of chair or toilet without assistance
- Pushups: being able to lift self off the ground without assistance
- Hinges: being able to bend over to pick something up without injuring low back
- Working multiple joints and muscle groups