Chapter 12

Physical Activity and Fitness

1. Benefits of Physical Activity
2. Improving Your Fitness
3. Planning a Personal Activity Program
4. Fitness Safety and Avoiding Injuries

#OnedayIwokeup #Doppitup

Lesson 1 — Benefits of Physical Activity

Why Movement Matters

Physical activity — any form of movement that causes your body to use energy — is one of the most powerful health-promoting habits you can build. It benefits virtually every system in your body. Only about **1 in 5 youth** ages 6–17 currently meets the national physical activity guidelines, meaning most teens are missing out on enormous health benefits.

> *Goal for teens: at least 60 minutes of moderate-to-vigorous physical activity EVERY DAY — including aerobic exercise, muscle-strengthening, and bone-strengthening activities at least 3 days per week. Can't find a solid hour? Three 20-minute sessions work just as well.*

Benefits Across All Dimensions of Health

❤■ **Cardiovascular**	Strengthens the heart, lowers blood pressure, reduces artery-clogging cholesterol
■ **Respiratory**	Lungs get better at pulling in oxygen, so you can exert yourself more without getting winded

■ **Musculoskeletal**	Builds stronger muscles and denser bones; reduces injury risk and osteoporosis later in life
■ **Mental/Emotional**	Stimulates endorphins, boosts serotonin and dopamine, fights anxiety and depression, improves sleep and self-esteem
■ **Social**	Team sports and group activities build friendships and teach cooperation, communication, and sportsmanship

Risks of Being Inactive

A **sedentary** lifestyle — little physical activity — is one of the leading risk factors for disease worldwide. Today's unique sedentary pressures: hours on phones, streaming, gaming, and social media scrolling. Health problems linked to inactivity include obesity, cardiovascular disease, type 2 diabetes, certain cancers, osteoporosis, and depression.

Lesson 2 — Improving Your Fitness

The 5 Elements of Fitness

■ **Cardiorespiratory endurance**	Ability of heart, lungs, and blood vessels to sustain moderate-to-vigorous activity. Foundation of cardiovascular health.
■ **Muscular strength**	Amount of force muscles can exert in a single effort — needed for lifting, carrying, pushing.
■ **Muscular endurance**	Ability of muscles to perform repeated actions without tiring — carry groceries up stairs, rake leaves for an hour.
■ **Flexibility**	Ability to move joints through their full range of motion. Reduces injury risk and improves athletic performance.
■■ **Body composition**	Ratio of fat to lean tissue. Lower body fat reduces risk of cardiovascular disease and other health problems.

Aerobic vs. Anaerobic Exercise

■ **Aerobic**	Rhythmic activities using large muscle groups continuously — jogging, swimming, cycling, dancing. Raises heart rate and oxygen use. Foundation of cardiorespiratory fitness.

■■ **Anaerobic**	Short, intense bursts where muscles work without oxygen — sprinting, weight lifting. Builds muscular strength and endurance.

Improving Each Element

- **Cardiorespiratory** — Regular aerobic exercise. Target heart rate: 50–85% of max (estimated max = 208 minus 0.7 × age). Reduces disease risk and helps manage weight.
- **Muscular strength/endurance** — Resistance training using weights, machines, or bodyweight. Isometric (no movement), Isotonic (movement + contraction), or Isokinetic (controlled range of motion). More muscle = faster metabolism.
- **Flexibility** — Stretch slowly, hold 10–30 seconds, never bounce. Should feel like a gentle pull, not pain. Improves circulation, posture, and coordination.
- **Bone strength** — Weight-bearing exercises (running, dancing, strength training) build bone density. Swimming and cycling are great for cardio but don't build bone.

Lesson 3 — Planning a Personal Activity Program

Four Principles of Building Fitness

1	**Specificity** Choose activities that target the fitness element you want to improve — cardio for endurance, strength training for muscle.
2	**Overload** Push beyond your current comfort zone. Your body only gets stronger when challenged.
3	**Progression** Gradually increase intensity, duration, or frequency over time. Don't try to do too much too soon.
4	**Regularity** Consistency is everything. Three or more balanced workouts per week is the minimum to maintain fitness.

Every Workout Has Three Stages

■ **Warm-Up**	5–10 min of gentle cardiovascular activity. Increases blood flow, gradually raises heart rate, and prepares muscles for work.
■ **Workout**	The peak portion. Use the F.I.T.T. formula: Frequency (3+ times/week), Intensity (push to create overload), Type (vary activities), Time (20+ min in target zone for cardio).

❄■ **Cool-Down**	5–10 min of easy activity that gradually returns your body to resting state. Prevents blood pooling, reduces soreness, great time for deeper stretching.

> *Track your RESTING HEART RATE — the number of times your heart beats per minute while completely at rest (normal for teens: 60–100 bpm). As your fitness improves, this number will gradually drop — a direct sign your heart is getting stronger and more efficient.*

Lesson 4 — Fitness Safety and Avoiding Injuries

Weather Safety

■ **Cold — Frostbite**	Damage to skin/tissue from extreme cold. Skin turns pale, hard, numb. Warm with warm (not hot) water. Seek help for severe cases.
■ **Cold — Hypothermia**	Dangerously low body temperature. Drowsiness, weakness, confusion, slowed heart rate. MEDICAL EMERGENCY — call for help immediately.
■ **Heat — Heat exhaustion**	Heavy sweating, cold/clammy skin, dizziness, weakness, nausea. Rest in cool shade, apply cold water, fan the skin.
■ **Heat — Heatstroke**	Body can no longer cool itself. Hot/dry skin, high temperature, confusion. CALL 911 IMMEDIATELY — can cause sudden death.
■■ **Sun protection**	Apply SPF 30+ sunscreen before outdoor activity; reapply every 2 hours. Wear UV-blocking sunglasses and a hat.

Concussions — What You Need to Know

A **concussion** is a brain injury caused by a blow or jolt to the head — even without loss of consciousness. Signs: headache, confusion, dizziness, nausea, sensitivity to light or noise, slowed reaction. **When in doubt, sit it out** — never return to play the same day without clearance from a healthcare professional. Research has linked repeated concussions to **chronic traumatic encephalopathy (CTE)** — a degenerative brain disease. Protecting your brain now matters for life.

The P.R.I.C.E. Procedure for Minor Injuries

1	**P — Protect** Bandage or splint the area to prevent further injury

2	**R — Rest** Keep weight and stress off the injury for at least a day
3	**I — Ice** Apply ice (wrapped in cloth) for 10–15 minutes, 3 times a day for 2 days. NEVER apply ice directly to skin.
4	**C — Compress** Wrap with an elastic bandage to reduce swelling — firm but not tight
5	**E — Elevate** Keep the injured area raised above heart level to reduce swelling

> *Fractures, dislocations, and severe concussions (vomiting, seizures, loss of consciousness) require immediate professional care. Don't try to tough these out — call for help right away.*

Chapter Vocabulary

Lesson 1

Physical activity	Any form of movement that causes the body to use energy
Physical fitness	The ability to carry out daily tasks easily and have enough reserve energy to respond to unexpected demands
Exercise	Purposeful physical activity that is planned, structured, and repetitive, aimed at improving or maintaining physical fitness
Sedentary	Involving little physical activity; characterized by mostly sitting or inactive behavior

Lesson 2

Cardiorespiratory endurance	The ability of the heart, lungs, and blood vessels to deliver fuel and oxygen to tissues during sustained moderate-to-vigorous activity
Muscular strength	The amount of force the muscles can exert
Muscular endurance	The ability of muscles to perform physical tasks over a period of time without tiring
Flexibility	The ability to move body parts through their full range of motion
Aerobic exercise	Rhythmic activities using large muscle groups continuously, elevating heart rate and oxygen use
Anaerobic exercise	Intense, short bursts of activity where muscles produce energy without oxygen

Lesson 3

Specificity	Choosing the right types of activities to improve a given element of fitness
Overload	Exercising at a level beyond regular daily activities to force the body to adapt and grow stronger
Progression	Gradually increasing the demands on the body over time
Warm-up	Gentle cardiovascular activity that prepares muscles for more intense work
Workout	The peak portion of an exercise session

Cool-down	Low-level activity that gradually returns the body to its resting state
Resting heart rate	The number of times the heart beats per minute when at complete rest; decreases as fitness improves

Lesson 4	
Frostbite	Damage to skin and tissues caused by exposure to extreme cold
Hypothermia	Dangerously low body temperature resulting from prolonged exposure to extreme cold; a medical emergency
Heat exhaustion	A form of physical stress caused by overheating; symptoms include heavy sweating, dizziness, and weakness
Heatstroke	A dangerous condition in which the body loses its ability to cool itself; can be fatal without immediate emergency care
Muscle cramps	Sudden, painful contractions of a muscle, often from fatigue or dehydration
Strains	Injuries caused by overstretching or tearing a muscle
Sprains	Injuries to the ligaments around a joint