Aerobic Endurance

DEFINITION

The ability of the heart, lungs, and blood vessels to deliver oxygen to working muscles during sustained physical activity over an extended period.

WHY IT MATTERS FOR HEALTH

Reduces risk of heart disease, diabetes, and obesity. Improves mental health, sleep quality, and energy levels throughout the day.

WHY IT MATTERS FOR SPORT

Essential for any sport lasting more than 90 seconds — distance running, soccer, basketball, swimming, cycling, and team sports.

REAL-WORLD EXAMPLES

- Running a 5km fun run
- Playing a full game of soccer
- Swimming laps at the pool

TESTS IN THE APP

- Beep Test (20m Shuttle)
- Cooper Run (12 min)
- 1.5 Mile Run
- Yo-Yo Intermittent Recovery

HOW TO IMPROVE

- Continuous running (20-40 min at moderate pace)
- Interval training (e.g. 400m repeats)
- Cross-training: cycling, swimming, rowing

DID YOU KNOW?

Your heart beats about 100,000 times per day. Regular aerobic exercise makes each beat more efficient, so your heart doesn't have to work as hard at rest.

Muscular Strength

DEFINITION

The maximum force a muscle or muscle group can generate in a single effort against resistance.

WHY IT MATTERS FOR HEALTH

Builds bone density, prevents injuries, supports joints, and maintains independence as you age. Increases metabolism even at rest.

WHY IT MATTERS FOR SPORT

Critical for sports requiring maximal force — weightlifting, shot put, rugby scrums, wrestling, gymnastics vaulting.

REAL-WORLD EXAMPLES

- Lifting a heavy box off the ground
- Opening a tight jar lid
- Pushing a car that won't start

TESTS IN THE APP

- Grip Strength (dynamometer)
- 1RM Bench Press
- Medicine Ball Throw

HOW TO IMPROVE

- Heavy resistance training (3-5 reps, high weight)
- Progressive overload — gradually increase resistance
- Compound exercises: squats, deadlifts, bench press

DID YOU KNOW?

The strongest muscle relative to its size is the masseter (jaw muscle). It can close your teeth with a force of up to 90kg — stronger than most people can deadlift relative to muscle size!

Muscular Endurance

DEFINITION

The ability of a muscle or muscle group to perform repeated contractions against a resistance over an extended period of time.

WHY IT MATTERS FOR HEALTH

Improves posture, reduces back pain, supports daily activities like carrying groceries or climbing stairs without fatigue.

WHY IT MATTERS FOR SPORT

Important for rowing, cycling, swimming, rock climbing, boxing, and any sport requiring sustained muscular effort.

REAL-WORLD EXAMPLES

- Carrying a heavy backpack all day
- Paddling a kayak for an hour
- Doing a plank hold for as long as possible

TESTS IN THE APP

- Push-ups (1 min)
- Sit-ups (1 min)
- Plank Hold
- Wall Sit

HOW TO IMPROVE

- High-rep, lower-weight exercises (15-25 reps)
- Circuit training with minimal rest
- Isometric holds (planks, wall sits)

DID YOU KNOW?

The world record for most push-ups in one hour is 2,919 — that's nearly 49 per minute without stopping. Muscular endurance at its extreme!

Flexibility

DEFINITION

The range of motion available at a joint or group of joints. Determined by muscle length, joint structure, and connective tissue elasticity.

WHY IT MATTERS FOR HEALTH

Prevents muscle strains and injuries, reduces muscle soreness, improves posture, and decreases lower back pain.

WHY IT MATTERS FOR SPORT

Essential for gymnastics, martial arts, dance, swimming, and diving. Important for injury prevention in all sports.

REAL-WORLD EXAMPLES

- Bending down to tie your shoes
- Reaching a high shelf
- Turning your head to check blind spots while driving

TESTS IN THE APP

- Sit-and-Reach
- Shoulder Flexibility
- Trunk Rotation

HOW TO IMPROVE

- Static stretching (hold 15-30 seconds)
- Dynamic stretching before activity
- Yoga or Pilates for full-body flexibility

DID YOU KNOW?

Babies are born incredibly flexible — they can easily put their toes in their mouths! We lose flexibility as we age, but regular stretching can maintain or even improve it at any age.

Power

DEFINITION

The ability to exert maximum force in the shortest possible time. Power = Strength x Speed. It's the explosive component of fitness.

WHY IT MATTERS FOR HEALTH

Helps prevent falls in older adults, supports quick reflexes, and maintains the ability to react quickly in emergencies.

WHY IT MATTERS FOR SPORT

Critical for sprinting starts, jumping, throwing, hitting, kicking — virtually any explosive athletic movement.

REAL-WORLD EXAMPLES

- Jumping to catch a ball
- Sprinting to catch a bus
- Throwing a ball as far as possible

TESTS IN THE APP

- Standing Long Jump
- Vertical Jump
- Medicine Ball Throw
- Sprint tests (10m, 40m)

HOW TO IMPROVE

- Plyometrics (box jumps, depth jumps, bounding)
- Olympic lifts (power clean, snatch)
- Explosive bodyweight exercises (clap push-ups)

DID YOU KNOW?

A flea can jump 150 times its own body length. If humans had the same relative power, we could jump over a 50-storey building!

Agility

DEFINITION

The ability to change direction quickly and accurately while maintaining balance and control. Combines speed, coordination, and reaction time.

WHY IT MATTERS FOR HEALTH

Improves balance and coordination, reduces fall risk, enhances brain-body connection, and keeps you nimble in everyday life.

WHY IT MATTERS FOR SPORT

Essential for team sports (soccer, basketball, netball, rugby), racquet sports (tennis, badminton), and combat sports.

REAL-WORLD EXAMPLES

- Dodging someone on a crowded footpath
- Quickly changing direction while playing tag
- Navigating through a busy room without bumping into things

TESTS IN THE APP

- Illinois Agility Test
- T-Test
- 5-0-5 Agility Test
- Hexagon Test

HOW TO IMPROVE

- Ladder drills (in-out, icky shuffle, crossover)
- Cone drills with directional changes
- Reactive agility drills with partner cues

DID YOU KNOW?

Cheetahs aren't just fast — they're incredibly agile. They can change direction at full speed (110 km/h) using their tail as a rudder. That's the ultimate agility!

Speed

DEFINITION

The ability to move your body or body parts quickly from one point to another. Speed can refer to whole-body movement or limb speed.

WHY IT MATTERS FOR HEALTH

Maintains fast-twitch muscle fibres, supports quick reaction times, and keeps the nervous system sharp as you age.

WHY IT MATTERS FOR SPORT

Critical for sprinting, base running, fast breaks in basketball, counterattacks in soccer, and swimming sprints.

REAL-WORLD EXAMPLES

- Running to catch a bus
- Reacting quickly to avoid a falling object
- Racing a friend across the park

TESTS IN THE APP

- 10m Sprint
- 20m Sprint
- 40m Sprint
- Flying 30m Sprint

HOW TO IMPROVE

- Short sprints with full recovery (10-60m)
- Resistance sprinting (sled pulls, hills)
- Technique work: arm drive, knee lift, ground contact

DID YOU KNOW?

Usain Bolt's top speed was 44.72 km/h during his 100m world record. For comparison, the average person sprints at about 24 km/h. His stride length was 2.44m — nearly the height of a door frame!

Body Composition

DEFINITION

The ratio of fat mass to lean mass (muscle, bone, organs, water) in your body. It's about the makeup of your body, not just your weight.

WHY IT MATTERS FOR HEALTH

Healthy body composition reduces risk of chronic diseases, improves energy levels, and supports overall wellbeing. It's NOT about being thin.

WHY IT MATTERS FOR SPORT

Different sports favour different compositions — distance runners are leaner, rugby forwards carry more mass, swimmers have higher muscle-to-fat ratios.

REAL-WORLD EXAMPLES

- Two people can weigh the same but look completely different due to muscle vs fat ratio
- An athlete may weigh more than average due to muscle mass
- Body composition changes with age, activity, and nutrition

TESTS IN THE APP

- BMI Calculation
- Waist-to-Hip Ratio
- Skinfold Measurements

HOW TO IMPROVE

- Combination of strength training (builds muscle) and cardio (uses ener
- Balanced nutrition — not dieting, but fuelling
- Consistent activity rather than extreme approaches

DID YOU KNOW?

Your bones make up about 15% of your body weight, and your skeleton completely replaces itself every 10 years. Weight-bearing exercise makes bones denser and stronger!