ITF Coaches Education Programme Level 2 Coaching Course

Physical Conditioning for Tournament Players

By the end of this session you should be able to:

- Identify and test the physical factors specifically needed for top performance in tennis
- Understand the basic physiology and energy production systems in tennis
- Develop an understanding of the principles of training and their application to tennis
- Devise effective and appropriate physical conditioning for tournament tennis players

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Physical fitness: Definition

- Physical fitness is the overall physical condition of the individual; this can vary from the peak human performance to the extreme illness
- Fitness is an integral part of the game of tennis, and it becomes more relevant if it is played at tournament level

Physical fitness: importance

BASIC STATEMENT

- There is one factor which is true of many sports and certainly tennis:

THE FITTER THE PLAYER

THE BETTER THE PERFORMANCE

Facts about physical conditioning

- The stronger you are, the more force you can produce and hence the more power you can generate in your strokes
- 38% of ATP players miss at least one tournament because of back problems

Benefits of a physical conditioning programme

- Enhances confidence in match situations
- Produces a stronger, more resilient player
  Allows cognitive skills to be optimised
- Improves technique and enhances the production of power
- Reduces the number and severity of injuries
- Promotes mental strength

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Benefits of a physical conditioning programme

- Delays fatigue
- Helps recovery
- Ensures effective good quality practice
- Allows more consecutive days of quality physical performance
- Makes a better athlete and tennis player
- Improves health and quality of life

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Role of physical conditioning on performance

- **Up until 12-13**:
  - Technique most important factor
- **After 12-13**:
  - Physical Conditioning increases its importance --> Needs a more structured approach
- **From 16 on**:
  - Physical Conditioning becomes the 2nd most important factor (after mentality)

Components of physical fitness

- Endurance
- Strength
- Speed
- Flexibility
- Co-ordination
- Power
- Agility
- Dexterity

Endurance

- Capacity to continue prolonged physical activity of low intensity and delay of the onset fatigue.
- Ability to endure lots of short burst of high intensity over a long time
- Muscular endurance: Capacity of a muscle to exert a force repeatedly over a period of time or to exert strength to sustain it

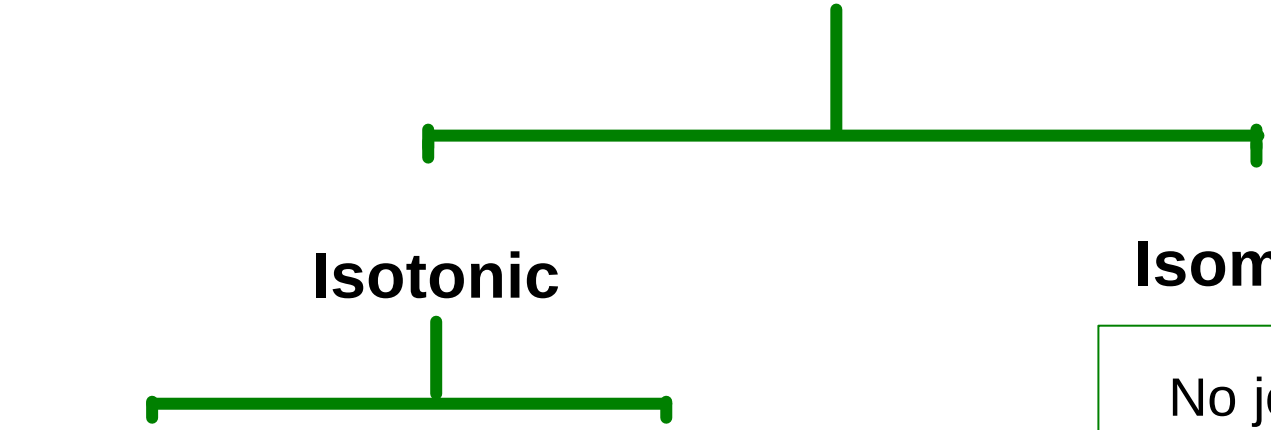
- Types:
  - Organic:
    - Aerobic
    - Anaerobic:
      - Lactic
      - Alactic
  - Muscular

Strength

- The maximum force which a muscle or group of muscles can generate against a resistance

- Types:
  - maximum
  - endurance
  - explosive
  - upper body
  - lower body

Strength
types of muscular contractions



Speed

- The time taken to co-ordinate the movement of individual joints or of the body as a whole
- Ability to accelerate and move quickly over short distances
- **Reaction speed (response time)**: Amount of time a player takes to respond to and return the oncoming ball
- **Power/Explosive**: Speed over short distances e.g. less than 10 metres
- **Endurance**: Ability to maintain speed over a period of more than 10-15 sec. or to produce repeated bouts of intense activity with incomplete recovery periods in between

- Types:
  - action
  - reaction
  - power/explosive
  - general speed
  - agility
  - limb (arm, leg)
  - endurance

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Power

- The maximum amount of force which can be generated in a muscle or group of muscles within the shortest period of time
- Strength x speed

- Types:
  - Reaction
  - Speed

Flexibility

- The range of movement at a joint or series of joints
- Types:
  - Upper body
  - Lower body

Co-ordination

- Ability to synchronize the muscular action so that the muscles perform the right movement at the right time and with adequate speed and intensity

- Types:
  - Dynamic General
  - Hand-eye
  - Foot-eye

Balance

- The ability to maintain equilibrium of the body
- Dynamic:
  - During vigorous movements
- Static:
  - Hold a stationary position (ready position)

- Types:
  - Dynamic: ability to maintain equilibrium while moving
  - Static: ability to hold a stationary position

Other physical components

AGILITY

- Ability to start and stop and to change direction quickly and effectively while moving
- Composed of:
  - Speed
  - Flexibility
  - Power
  - Co-ordination

DEXTERITY

- Ability to achieve the best performance with:
  - Time saving
  - Economy
  - Efficiency