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
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
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
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

- Isotonic
  - Eccentric: Muscle is lengthened
  - Concentric: Muscle is shortened
- Isometric: No joints' movement
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
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