

ITF Coaches Education Programme Level 2 Coaching Course



Injury prevention in competitive tennis

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



- understand your role in injury prevention and first aid procedures
- identify the main causes of injuries in tennis
- identify the typical injuries in tennis and their causes
- explain appropriate emergency procedures and monitor the health and safety of players

Sports medicine



- Medicine and science of exercise and sport:
 - Diagnosis, treatment and rehabilitation of injury
 - Medical examination prior to embarking on an exercise or sports programme
 - Medical examination to determine the performance capacity of the body
 - Performance assessments specific to the type of sport and the scientific control of training
 - The study of pressures to succeed in sport through drug testing and control

Role of the coach on the sports medicine team



- The coach, the doctor and the physiotherapist should work together
- The role of the coach can be divided into several areas:
 - Injury prevention
 - Emergency first response
 - Dealing with the injured player and assisting with the recuperation

Coach's role in injury prevention (I)



- Have an in-depth knowledge of tennis, including the inherent dangers
- Give consideration to the stage of development and growth of children
- Be concerned about prevention of over-use and over-training injuries
- Insurance is essential both for coaches and players

Coach's role in injury prevention (II)

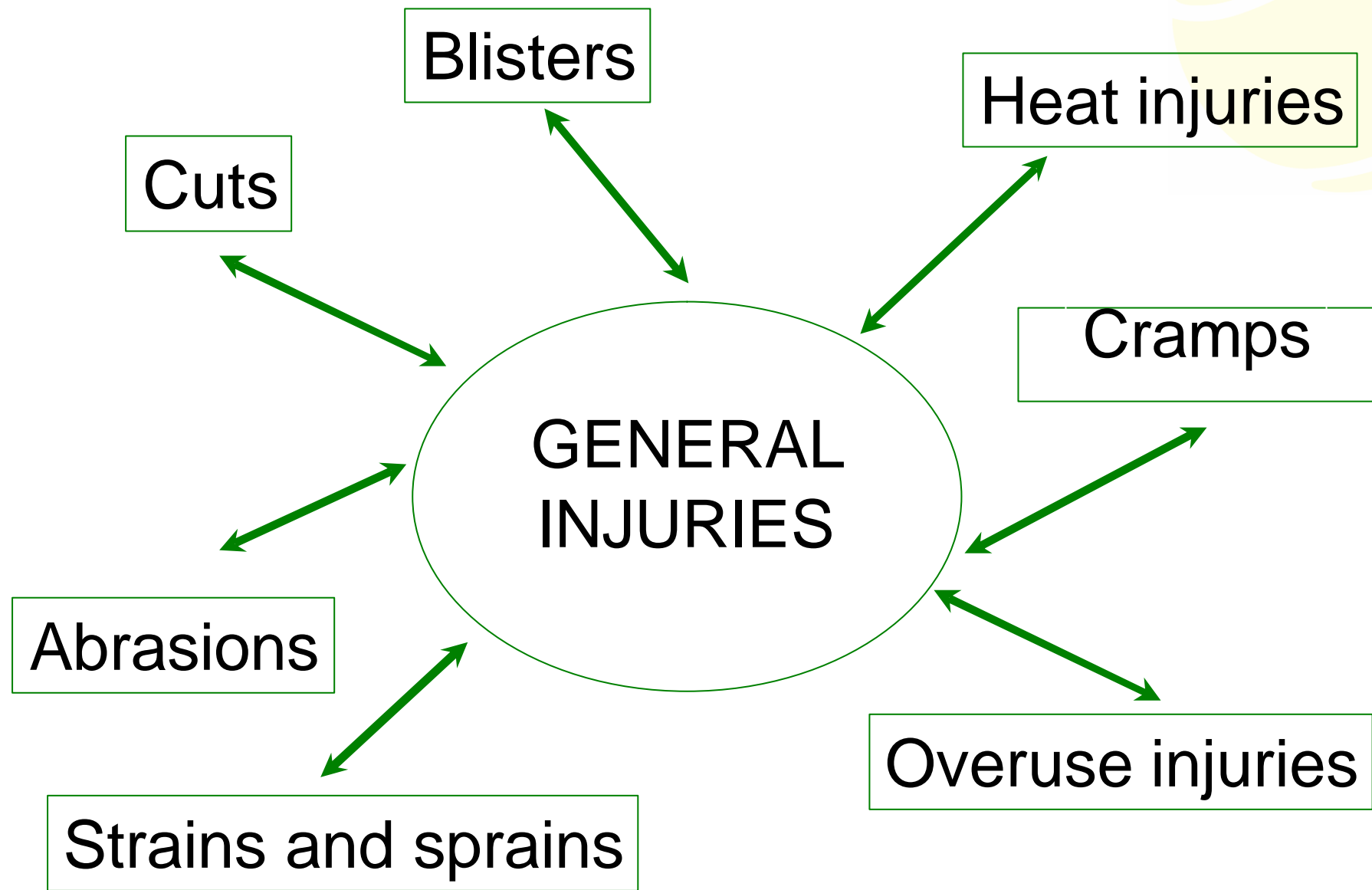


- Adequate warm-up and cool-down
- Appropriate stretching and flexibility
- Suitable strength training
- General and tennis specific conditioning
- Appropriate rest and recovery
- Quality tennis shoes, equipment and facilities
- Appropriate training and competition planning and periodisation

Coach's role in injury prevention (III)



- Ensure that all high performance players have regular medical check-ups (ideally twice a year)
- Take care of:
 - Facilities
 - Equipment
 - Training and competition plan



Injury prevention (I)



Injury	Cause	Prevention
Heat	Improper hydration	Advise players to drink water every 15-20 min.
Overuse (shin splints, tendonitis, bursitis)	Poor technique, lack of strength and flexibility	Teach and correct good technique, help players to get fit
Strains and sprains	Inflexibility, poor technique, poor fitness and fatigue	Plan the training, do not overtrain
Cramps	Heredity, fatigue, direct blow or injury, hot weather	Undergo through fitness programme, heat acclimatization, drink, avoid heavy meals

Injury prevention (II)

Injury	Cause	Prevention
Blisters	New / regripped racket, new shoes, humidity	Moleskin, powder, lubricants, keep clean and protected
Abrasions	Hit against the floor, a fence, the post, etc.	Clean thoroughly, use running water and soap, cover with sterile dressing or leave it open
Cuts	Hit against the floor, a fence, the post, etc.	Direct pressure, use running water, antiseptic powder, never apply cream, ensure tetanus immunization

Immediate treatment



- **P**: Protect (taping, strapping, splint)
- **R**: Rest (the injured part for 48 hours)
- **I**: Ice (on a cloth, apply for 15 min. each hour)
- **C**: Compress (bandage to reduce swelling)
- **E**: Elevate (reduce swelling)
- **R**: Rehabilitation (immediately:
 - medication or physiotherapy)

Emergency game plan



- First-aid kit always available
- Know location of closest phone and address of facilities
- Know basic first-aid
- Ensure familiarity with your own emergency plan of action

Sample first-aid kit



Strapping and bandaging	Cleansing agents and dressing	Miscellaneous
2 x 3in crepe bandages 2 x 6in crepe bandages 2 x 3in elastoplast adhesive bandages Triangular bandage Roll of cotton wool or Soft band for pressure bandaging Individually wrapped 'plasters' Zinc Oxide tape	Clean water Antiseptic solution Hydrogen peroxide (for dirty wounds) Gauze swabs Cotton bandages Non-adherent dressing (e.g. Vaseline gauze or Melolin) Cotton wool swabs	Safety pins Scissors Disposable gloves Clinical thermometer Eye bath & pad smelling salts

Helping the injured player: The coach's role (I)

- Reassurance: Let the player know that the injury will get better
- Regular contact with player and parents: telephone calls, social visits, etc.
- Work on areas unaffected by the injury
- Contact with previous injury players who have recovered: Using them as role models
- Encourage a positive home environment by using player's spare time in a constructive way e.g. watch videos of tennis players

Planning a rehabilitation programme

- Re-drafting of the player's annual plan
- Re-appraisal of their tournament schedule and training programme
- Setting new training goals
- Reviewing competition goals
- Planning a physical training programme

Main causes of injuries



- *Improper facilities and equipment:* Heavy racket, shoes too tight, court too slippery
- *Improper teaching:* Poor technique
- *Poor fitness:* “Get fit for tennis, don’t play tennis to get fit”
- *Striving for excellence:* Pushing over the body limits

The risk of injury will be limited if players:



- Use good facilities
- Use good equipment
- Develop good technique
- Get fit for tennis
- Respect the limits of their bodies

Pain levels



Level	Signs	Action
1	Discomfort or mild pain with early hitting but resolves with warm-up or continued playing. Early signs of inflammation and/or tendinosis	Can continue play but with specific warm-up exercises and post play treatment (ice and gentle stretching)
2	Mild pain during play not resolved with warm-up as well after play that resolves within 24 hours	O.K. to keep playing but one should warm-up thoroughly before play and use post play treatment of level 1
3	Mild moderate pain during and after play that exceeds 48 hours	Use specific warm-up exercises that address those areas of pain. One may try to play provided the pain improves during the warm-up and tennis technique is not altered. Use level 1 post play treatment
4	Mild to moderate pain that continues during play and after play that does not respond to specific warm-up activities	Discontinue playing immediately and seek the medical attention of a physician
5	Moderate to severe pain that also alters technique	Do not participate in sport activity and promptly seek medical attention

Location of tennis injuries

Upper limb 27%	Trunk/back & abdomen	Lower limb 40%	Others (thigh, hip, head, eye)
Shoulder 10% Elbow 12% Wrist 5%	20%	Foot 12% Ankle 8% Lower leg 5% Knee 15%	13%

Typical tennis injuries (I)

Location	Injury	Cause
Foot	Skin problems	Unsuitable footwear for the court surface
Ankle	Sprain	Unsuitable footwear for the court surface, quick change of direction
Lower leg	Tennis leg	Repetitive load on a straight (knee extended leg)
Patella and knee	Overload injuries	Bursitis (inflammation of knee bursa), tendonitis (repetitive jumping), etc

Typical tennis injuries (II)



Location	Injury	Cause
Trunk and back	Muscle pull/strain	Pressure on back when arching for serve or bending on low shots
Spine	Congenital defects	Hyperextension of the lumbar spine (i.e. topspin serve)
Abdomen	Stomach pulls	Stretching and attempting to hit powerfully (i.e. when developing a big serve)

Typical tennis injuries (III)



Location	Injury	Cause
Shoulder	Rotator cuff	Faulty technique from over vigorous stroke play
Elbow	Tennis elbow	Hitting late, leading with elbow on the BH, too small racket grip
Elbow	Golfers elbow	Poor serve and FH technique, hitting excessive topspin
Wrist	Tendinitis	Overuse. Grip and technique on the FH and serve

Injuries in young players

Injury	General
Osteochondroses	<ul style="list-style-type: none">• Degeneration of the centre of ossification where a major tendon attaches to the epiphysis of the bone
Osgood-Schlatter	<ul style="list-style-type: none">• Knee pain (inflammation of the patella tendon)• More common in boys than in girls• Appears between the ages of 10 and 16• When involving vigorous jumping or sprinting
Sever disease	<ul style="list-style-type: none">• Heel disease
Stress fractures	<ul style="list-style-type: none">• Problems if they go undiagnosed
Growth	<ul style="list-style-type: none">• Produces pain• It is accompanied by decreasing flexibility• More common in tight children
Muscle tendon imbalance	<ul style="list-style-type: none">• Inadequate strength and flexibility in the player• It is increased if the emphasis of training is placed on the same movement pattern or muscle groups, lacking in variation

Other common medical issues

Problem	Medical issue	Prevention-Treatment
SUN	Ultraviolet radiation	Use a sunscreen that protects against UVA rays, wear as much clothing as you can tolerate, avoid playing between 10.00 a.m. and 3 p.m.
DRUGS AND DOPING	Gaining athletic advantage, altering mood or changing awareness	Parents and coaches education of players Specific centres of treatment
TOBACCO	Impairment of tennis performance and increase of the risk of respiratory infections and cancer	Parents and coaches as role models for players
EYE	Impact of a ball into the eye socket	Immediate medical attention