

# Sport science and medicine in tennis

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Tennis is one of the major global sports, with over 75 million participants worldwide. Many more follow the Grand Slams, Davis Cup and Fed Cup events, overseen by the International Tennis Federation (ITF) and the professional tours, governed and managed by the Association of Tennis Professionals (ATP) and the Sony Ericsson WTA (Women's Tennis Association) Tour.

The ITF is the world governing body of tennis and is the guardian of the Rules of Tennis. However, both the ATP and WTA have flexibility in the way in which they run their respective tours (eg, they have different rules for playing in the heat and for the medical cover at events).

All three organisations are involved in the development of the game and all have committees and departments that have responsibility for sports science and sports medicine. Even though these departments are run independently, representatives of all groups sit on the ITF Sport Science & Medicine Committee. In the area of anti-doping, a unified, WADA-compliant policy has been agreed that is managed by the ITF. In this article the work of the ITF, ATP and WTA sport science and medicine departments is presented in more detail.

## ITF SPORT SCIENCE AND MEDICINE

Founded in 1913, the ITF is responsible for the Olympic Games (tennis re-joined in 1988), the Grand Slam tournaments (Australian Open, Roland Garros, Wimbledon and the US Open), the Davis Cup (men only) and Fed Cup (women only) team events, and a wide range of junior, veteran, wheelchair and lower level professional events.

Among the aims of the ITF is the continued growth and development of tennis worldwide, and to amend and uphold the rules of the game. The ITF has 205 member National Associations spread across every continent, and six Regional Associations that work within their respective regions to assist the development and co-ordination of tennis.

Within the ITF, Sport Science and Medicine activities are supported and

guided by the Sport Science & Medicine Commission (SSMC), which is one of the ITF's 17 committees and commissions. Current membership of the SSMC includes three of the four Grand Slam Chief Medical Officers, ATP and WTA Medical Services representatives, Davis Cup and Fed Cup doctors, and leading academics.

The remit of Sport Science & Medicine at the ITF comprises the core sciences of biomechanics, physiology, psychology, nutrition, motor learning and sports medicine. The focus is on the provision of Sport Science & Medicine to National Associations, in particular those developing tennis nations that have little or no such expertise, such that the overall level of provision throughout the tennis world is enhanced. To focus its activities and provide a sense of direction, the SSMC has adopted the following mission statement:

**To analyse, develop and disseminate tennis information relevant to sport science and medicine world-wide in order to maximise healthy participation in tennis, to reduce injury risk and to facilitate optimal performance.**

The primary means by which the remit and mission statement of the SSMC are accomplished include effective dissemination of information (primarily through its website), but also other sources such as publications, presentations at conferences and original research. At present, the SSMC is involved in a number of key research projects, including:

- a revision of the Medical Time Out rule;
- the establishment of the health benefits of tennis and to promote tennis as a healthy lifelong sport;
- evaluation of the so-called 'heat rule' in professional tennis;
- injury registration to establish the factors that are associated with injury and tennis, using the results to implement policies and strategies to minimise such injuries.

## MEDICAL SERVICES ON THE ATP TOUR

The ATP was formed in 1972 and organises the Men's Tour. The ATP World Tour represents 64 tournaments played in 31 different countries over the course of a 10.5 month season.

The ATP Medical Services' primary responsibility is the co-ordination and management of health care for all ATP players at the Grand Slams and ATP Tour events. This represents both a unique and challenging opportunity. Within that context, the overall function of the department can best be summarised by the ATP Mission Statement:

**To assist the members of the ATP in the achievement and maintenance of good health in order to maximise athletic performance and promote success and longevity in their professional tennis careers through:**

- injury/illness treatment at ATP & Grand Slam tournaments and follow-up through a worldwide medical network;
- implementation of injury/illness prevention strategies;
- facilitation in other health-related areas.

The ATP Medical Services Department includes four full-time and four part-time Sports Medicine Therapists (SMTs) and the ATP Chief Player Officer who serves as the director of the department. The SMTs travel to all ATP Tour and Grand Slam events where they provide athletic training and physiotherapy services to the players. They also co-ordinate the on-site management of injuries and illnesses that require a physician's care.

Currently, three orthopaedic sports medicine specialists serve as Medical Directors in an advisory capacity. Along with one of the SMTs (the Medical Services Administrator), they comprise the ATP Medical Services Committee.

As part of its mission, the ATP Medical Services is committed to and focused on the prevention of injuries in our players. As such, the ATP is collaborating with the WTA and ITF on the development and implementation of a tennis-specific injury documentation and surveillance software system. In addition, ATP Medical Services is participating in several on-going programs, including the prevention of dehydration and heat-related problems through sweat testing and individualised fluid and electrolyte management, and a tennis-specific musculoskeletal screening and exercise program for ATP-players. Player education on health issues is also an important task of the Medical Services.

Finally, ATP Medical Services could not function without the dedication and expertise of its Tournament Physicians. This group of more than 100 physicians from around the world provides on-site medical coverage for the players at all ATP Tour events.

### SONY ERICSSON WTA TOUR SPORT SCIENCES & MEDICINE

The WTA was founded in 1970 and organises the Women's Tour. With 63 tournaments in 35 countries, the Sony Ericsson WTA Tour is the largest premier professional sport for women worldwide.

The Sport Sciences and Medicine Department was founded in order to provide optimal health care for all athletes on the women's professional tennis circuit. The department is staffed by primary health care providers (PHCPs, all physical therapists or certified athletic trainers), licensed massage therapists and player development program representatives. Advisors from various sport sciences and medicine disciplines (sports medicine, women's health, sports nutrition, sports psychology, hydration, acupuncture, sports

dermatology and podiatry) are also part of the health care team. Last but not least, the PRO U<sup>TM</sup> programs (the Tour's umbrella institution for education) particularly target the health, safety and career longevity of young professional women players.

The vision of the Sony Ericsson WTA Tour is to make tennis the leading global sport for women. The programs of the SS&M department help drive elite women's tennis by providing medical care that is comprehensive and of the highest standard.

Comprehensive health care inherently treats the whole person. That is why each PHCP possesses a very high skill level with an emphasis on manual therapy, sports medicine, on-court emergency care, biomechanical evaluation skills and knowledge of the demands and expectations of tennis and elite professional players.

In addition, players are provided with individualized exercise programs, biomechanical services, massage therapy, health education, nutritional advice and an off-tournament follow-up.

Health care is both a science and an art and the members of the SS&M/PRO

U<sup>TM</sup> team blend the two to provide comprehensive and quality care to all Tour athletes. The satisfaction comes when healthy players compete at a high level of performance and display extraordinary athletic, emotional and mental skills that capture the imagination of the world.

*Br J Sports Med* 2007;**41**:703–704.  
doi: 10.1136/bjism.2007.040865

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Accepted 3 July 2007

Competing interests: None declared.

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