



Medical and Sport Science Committee
ETTU
(MSSC)

Bruno Soares

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PRESENTATION

As Chair of the ETTU Medical and Sport Science Committee, I remain highly committed to advancing the medical and sports science aspects of Table Tennis. Since our inaugural meeting in 2025, the Committee has made steady progress on the priorities we identified together, and this 2026 update reflects the work carried out over the past year. Success in sport is much more likely if players follow a sound training programme based on scientific principles, preparing themselves both physically and mentally for the rigorous demands of national and international competitions.

Over the past year, our main focus has been to turn those early priorities into concrete outcomes. Two areas in particular have driven our work in 2026: the organisation of the ETTU Medical Congress, our flagship event bringing together clinicians, scientists, and the wider Table Tennis community, and the development of sports nutrition guidelines for ETTU events, designed to support players' health and performance before, during, and after competition.

Cooperation remains at the heart of everything we do, and I want to thank every member of the Committee and every partner across our Member Federations who has contributed to this progress. As the Congress and the nutrition guidelines move from planning into implementation, we will continue to rely on this shared commitment, so that the conclusions and ideas developed within the Committee reach the whole Table Tennis community and translate into meaningful improvements on the ground.

Thank you, and let's keep fostering science in Table Tennis!

Bruno Soares

GOALS

- a) Exchange views on current clinical and sports science topics related to Table Tennis
- b) Provide programmes, spaces, and materials for all ETTU competitions
- c) Draw up proposals regarding the treatment of injuries and other clinical conditions in Table Tennis
- d) Establish a cooperation protocol with the ITTF Medical and Sport Science Committee
- e) Develop clinical education programmes for Table Tennis
- f) Initiate and monitor studies on Table Tennis injuries, as well as other performance and training-related projects
- g) Monitor the ETTU anti-doping programme
- h) Provide materials for the Medicine Matters publication
- i) Organize a medical conference every two years

With the Medical and Sport Science Committee (MSSC), our aim is to bring together professionals from different clinical and sports performance research areas under the ETTU umbrella, uniting the global Table Tennis community and playing a vital role in ensuring both the safety and development of the players.

We are proud to have a European network of dedicated medical and clinical teams, committed to safeguarding the well-being of Table Tennis athletes at all levels worldwide. Composed of experts from elite clinical backgrounds—many with direct experience in national teams—our committee's events and activities will help ensure that everyone involved in European Table Tennis can benefit from our collective knowledge and expertise.

OUR ACTIVITIES

The ETTU's work in the field of medicine and sports practice for Table Tennis aims to ensure that everyone involved in the sport across Europe—especially the players—remains clinically safe, alongside the entire entourage that supports them.

The guidelines and regulations we establish will meet the highest standards for health and safety for all those involved in European Table Tennis, whether at ETTU competitions or at other professional events taking place across the continent each season.

Our efforts do not end once competitions end. In fact, our mission is to ensure that European Table Tennis stays abreast of rapid changes in sports medicine. Accordingly, we will regularly review and update our regulations. We will work together with our Member Federations to expand medical knowledge and education across different fields, organise events for the fast-growing global sports medicine community, fund research on critical topics (such as concussion, injuries, and performance), and launch public awareness campaigns to keep European Table Tennis a healthy and safe sport.

First and foremost, we will prioritise players well-being by providing clear guidelines and setting mandatory requirements for all ETTU competitions—both before and after each event, as well as throughout the preparation phase for various European championships.

Sports Preparation

Pre-competition medical examination

Thorough and mandatory medical evaluations ensure that players are in optimal condition before starting a competition. These assessments include a general physical examination, cardiological screening, baseline neurological screening, and both laboratory and orthopaedic tests.

Briefing clinic

Clinical teams, as well as coaches and referees, receive essential medical information and instructions to safeguard players' well-being. Any medical issues, injuries, pre-existing conditions, and potential risks are addressed. Scenarios such as sudden cardiac arrest and various injuries are also discussed to clearly define the roles and responsibilities of on-site emergency teams, ambulance services, and stretcher teams.

Guidelines

To guarantee compliance with our standards and promote player welfare, we will provide essential guidance documents for all competitions. These include regulations, committee guidelines, venue infrastructure requirements, emergency action plans, and anti-doping regulations.

During competitions

Minimum clinical requirements:

We enforce strict medical standards for players, team staff, and referees at all ETTU competitions.

We will define the minimum standards for medical equipment and services needed to manage match incidents that could pose a serious risk or cause permanent injury. The host federation must provide at least the following:

1. Pitchside medical equipment (e.g., defibrillator, spine board, resuscitation equipment)
2. Ambulance
3. Medical staff (including at least one doctor on site)
4. Emergency medical equipment
5. Court-side emergency chart
6. No ETTU match should begin without an automated external defibrillator (AED), a bag-valve mask, and a spine board (or plank stretcher).

WORK PROPOSALS

ETTU Clinical and Research Symposium

Every two years, we organise a flagship scientific event bringing together experts from clubs, federations, and the broader Table Tennis community to examine and debate key issues affecting the sport. Since 2025, this proposal has been developed into the ETTU Medical Congress, described in full later in this report, covering injury prevention, high performance, and emerging technologies and equipment for Table Tennis.

Training Programme for clinical teams

The Training Programme for clinical teams aims to standardise the approaches taken by healthcare professionals within our member federations, recognising that clinical development and research levels can vary widely. In a typical event, one professional per association is invited; participants are then encouraged to organise sessions in their own countries to share the lessons learned. The programme is funded by the ETTU, reinvesting revenue from the sport into developmental projects proposed by the federations.

The first workshop will address various topics related to performance and emergency care for players.

The second workshop will focus on diagnosing and treating injuries specific to Table Tennis.

The third workshop will explore player protection, covering performance, nutrition, psychology, and rehabilitation.

Webinars and podcasts

We will host monthly webinars that delve into the latest research and findings on clinical and research topics related to Table Tennis. We also plan to launch podcasts with leading experts to ensure knowledge is accessible to the entire community.

ETTU MEDICAL CONGRESS

Building on the goal of organising a medical conference every two years, the Committee has spent 2025 and the first half of 2026 turning this proposal into a concrete, structured event: the ETTU Medical Congress – Medicine and Sport Science in Table Tennis. The initial concept has now been developed into a defined programme and a full strategic and operational plan, summarised below.

Congress Goals

- Exchange views on current clinical and sports science topics related to Table Tennis.
- Provide material for medicine-related practices.
- Organise a medical conference every two years.
- Encourage research in Table Tennis and reward excellence in scientific contributions.

Congress Programme

The Congress is structured across two days, combining scientific research, clinical practice, and applied topics relevant to players, medical teams, and event organisers.

Day 1 – Scientific Research, Sports Medicine, and Event Medical Support

Morning – Scientific Research in Table Tennis: biomechanics (racket grip, stance, force production, and body mechanics), performance analysis (technical, tactical, psychological, and physical analysis, together with experimentation and

reporting), and physiology (common sports injuries, mental toughness, anaerobic and aerobic energy systems, muscle power and speed, agility, and coordination).
Afternoon – Sports Medicine in Table Tennis: injury prevention strategies and protocols, performance enhancement, recovery best practices, and health promotion for players.

Day 2 – Clinical Applications, Cutting-Edge Technologies, Nutrition, Event Medical Provisions, and Research Presentations

Morning – Multidisciplinary Clinical Approach: psychology (mental toughness, mental strategies, pressure management, understanding opponents, and the role of professional psychological support) and physiotherapy (interventions, recovery, performance enhancement, and injury prevention).

Afternoon – Athlete-Centred Session: nutritional support at events (optimal nutrition during competition and training, and hydration strategies); medical support at events (standards of care, equipment and resources, and emergency protocols); and artificial intelligence and telemetry in Table Tennis (AI in game preparation and visualisation, monitoring with telemetry and biometric data, and data-driven game strategies).

Research Presentation Block

A call for abstracts will be published well in advance of the Congress, with opportunities for both oral and poster presentations. Clear evaluation criteria will apply, covering scientific rigour, relevance to Table Tennis, innovation, and presentation quality. Award categories will recognise the best contributions, for example the best oral presentation, best poster presentation, and a young investigator award, with awards such as travel grants, research funding, publication opportunities, and recognition during the closing ceremony.

Strategic and Operational Plan

To ensure the Congress achieves its goals, the Committee has developed a full strategic and operational plan, summarised below.

Mission Statement

To establish a premier platform for sharing cutting-edge knowledge, research, and best practices in sports medicine and science related to Table Tennis, fostering collaboration, and contributing to the advancement of the sport at all levels.

Strategic Objectives

- Maximise community involvement, engaging players, coaches, physical trainers, medical staff, and relevant professionals, and creating inclusive opportunities for participation and knowledge sharing.
- Promote performance enhancement, showcasing relevant studies, protocols, and technologies, and encouraging the adoption of new strategies for clinical practice, training, and monitoring.
- Increase engagement with the medical, clinical, and scientific communities, establishing partnerships with universities, research institutions, and professional organisations.
- Attract sponsorships from companies in the medical, technology, and sports equipment sectors, with attractive packages offering clear benefits and return on investment.
- Enhance the ETTU's notoriety, increasing its visibility and reputation and establishing it as a leading organisation in sports medicine and science for Table Tennis.

- Advance the sport, promoting new clinical, training, and monitoring strategies and facilitating the integration of new technologies, including medical equipment and artificial intelligence.

Operational Plan

Phase 1 – Pre-Congress Planning (6–12 months prior): community outreach and engagement, programme development, the call for abstracts, sponsorship acquisition, marketing and promotion, venue and logistics, and budget and financial management.

Phase 2 – Congress Execution: registration and check-in, session management, an exhibition area for sponsors, on-site medical support, and social events such as a welcome reception and closing ceremony.

Phase 3 – Post-Congress Follow-up (1–3 months after): feedback collection, financial reporting, recognition of speakers, sponsors, volunteers, and attendees, dissemination of Congress materials, and long-term relationship building with attendees, sponsors, and partners.

Evaluation and Metrics

The success of the Congress will be assessed through community engagement and the impact of presented studies and protocols on player performance, together with attendance and registration numbers, sponsorship revenue, attendee satisfaction, media coverage, the number of research abstracts submitted and presented, sponsor feedback, and social media engagement.

SPORTS NUTRITION GUIDELINES FOR EVENTS

Alongside the Congress, the Committee has been developing dedicated sports nutrition guidelines for ETTU events, complementing the general principles set out later in this report in the chapter on Nutrition in Table Tennis. The aim is to give players, team staff, and host federations clear, practical guidance on nutrition and hydration around competition, applicable across ETTU events of different formats and durations.

Scope

- Pre-competition nutrition, to help players arrive at each match well fuelled and hydrated.
- Nutrition during competition and between matches, including guidance on practical options for long competition days.
- Post-competition recovery nutrition, supporting the transition into the next match or the next day of a multi-day event.
- Hydration strategies adapted to venue conditions and match schedules.
- Basic catering and food-safety expectations for host federations at ETTU competitions.

Development and Status

The guidelines are being drafted by the Committee in coordination with the ETTU's sports medicine network, drawing on current sports nutrition evidence and aligned with the ETTU's anti-doping regulations. They were introduced as a dedicated session at the ETTU Medical Congress and are being refined with input from host federations and medical teams at ETTU events during 2026, ahead of a wider rollout as part of the Committee's standard competition guidelines.

MEDICINE AND SPORTS IN TABLE TENNIS – ETTU

Currently, scientific research in sport and allied fields has gained significant relevance in the global sports community. Focusing on table tennis in the area of exercise medicine allows us to present an evidence-based perspective on the beneficial and possible adverse effects of physical activity and training on a player's physical and mental health. Through this committee, we aim to encourage the scientific community and stakeholders to carry out studies on one of the most widely played sports in the world.

Science in Table Tennis

Science in Table Tennis should unite experts from around the globe, promoting collaboration among players, coaches, and scientists working in training, competition, and medical aspects of the sport. Every component of training and gameplay blends theory (sports science) with practice (training and performance), demonstrating how science can impact elite-level performance.

The Medical and Sport Science Committee (MSSC) will introduce various projects, workshops, and initiatives to motivate and equip the table tennis community to engage in sports science research and study. It will also serve as an essential resource for those who are already implementing training strategies at the elite level, as well as for the players themselves.

Success in table tennis is much more likely when players follow a solid training programme grounded in scientific principles, ensuring they are physically and

mentally prepared for the challenges of national and international competitions. Consequently, coaches have a responsibility to encourage players to incorporate these principles, both to enhance performance and minimise injury risk.

The idea of integrating science into table tennis training is an excellent initiative from the ETTU Medical and Sport Science Committee, benefiting table tennis players globally and guiding them towards a new vision of the sport in the digital age. This is an exciting and innovative time for table tennis science, and we hope that it will become a model for other researchers as well. Indeed, it could mark the beginning of a new era of sports science within table tennis worldwide.

A Holistic Approach

By adopting a holistic view of table tennis—encompassing sports psychology, sports medicine, nutrition, performance analysis, physiology, talent identification, strength and conditioning, and biomechanics—our mission is to offer scientific support to both young and elite table tennis players.

For instance:

- Sports Psychology
 - We will gather data on player behaviour during matches using VTR (video recording), the Sportsman Motivation Inventory (SMI) to assess peak psychological readiness, and heart-rate monitoring.
- Biomechanics and Nutrition
 - Tools such as EMG (electromyography) and load-distribution analysis will be used to study muscle activity and load ratios during matches.

Nutritional strategies will be tailored to support these biomechanical insights.

- Biofeedback
 - Various gadgets and wearable technologies will be employed to gather and analyse real-time physiological data, enhancing both training and performance.

SCIENTIFIC RESEARCH IN TABLE TENNIS

Scientific studies in table tennis encompass a broad range of topics, including biomechanics, performance analysis, psychology, and training methods. Below are some key areas of focus:

Biomechanics

Researchers study the mechanics of different strokes, movement patterns, and the impact of various techniques on performance:

- **Stroke Mechanics:** Investigating the kinematics and dynamics of serves, forehands, and backhands to understand how body movements influence speed, spin, and accuracy.
- **Movement Patterns:** Analysing how players move around the table—such as footwork and positioning—to optimise efficiency and reduce fatigue.
- **Injury Mechanics:** Identifying how improper technique may lead to common injuries (e.g., tendonitis or muscle strains) and creating safer training guidelines.

Performance Analysis

Through video analysis and statistical methods, researchers gain insights into player strategies, tendencies, and styles of play:

- **Statistical Methods:** Applying advanced analytics to match data to uncover trends in shot selection and success rates.

- Video Analysis: Breaking down matches frame by frame, helping players and coaches pinpoint strengths and weaknesses.
- Match Simulation: Conducting simulations to examine performance under varying conditions and styles of play.

Psychology

The mental side of table tennis concentration, anxiety management, and motivation plays a crucial role in competition:

- Mental Toughness: Exploring the traits that allow players to remain resilient and perform well under pressure.
- Focus and Concentration: Researching techniques like mindfulness and visualisation to improve match focus and consistency.
- Motivation: Investigating intrinsic and extrinsic factors that drive sustained training and peak performance.

Training Techniques

Studies evaluate the effectiveness of diverse training approaches, from drills to conditioning programmes and technology use:

- Drill Effectiveness: Assessing how traditional vs. innovative drills foster skill development.
- Conditioning Programmes: Examining the impact of strength, speed, and endurance training on overall performance.
- Technology in Training: Investigating ball machines, video feedback, and other aids that can accelerate skill acquisition.

Injury Prevention

Researchers look at common injuries in table tennis and seek prevention strategies, including targeted exercise and warm-up protocols:

- Common Injuries: Analysing the prevalence of shoulder, wrist, and lower back issues to implement preventive measures.
- Preventive Strategies: Designing warm-up routines and strengthening exercises to reduce injury risk.
- Recovery Protocols: Studying effective methods of rest, physiotherapy, and stretching to help players maintain peak performance.

Equipment Technology

Different paddle materials, ball designs, and table surfaces can significantly impact gameplay:

- Paddle Design: Evaluating how various materials influence spin, speed, and control.
- Ball Dynamics: Investigating physical properties like weight, size, and material composition to understand their effect on matches.
- Table Surface: Studying how surfaces alter ball bounce and spin, guiding players and organisers in equipment selection.

Through rigorous scientific inquiry in these areas, researchers aim to elevate the understanding of table tennis as a sport, enhance training methodologies, and ultimately improve player performance and enjoyment. The integration of science

in sports can lead to innovative training practices and a safer playing environment for athletes at all levels.

Through these studies, researchers aim to enhance player performance and enjoyment of the sport while promoting safety and health.

PERFORMANCE ANALYSIS IN TABLE TENNIS

Performance analysis is a key tool for elevating player performance in table tennis. By examining matches at a detailed level and identifying strengths, weaknesses, and areas for improvement, both coaches and athletes can devise more targeted training methods and strategic plans.

Key Areas of Performance Analysis

Technical Analysis

- Stroke Technique: Evaluating the execution of fundamental strokes (forehand drive, backhand drive, forehand loop, backhand loop, serve, and receive).
- Footwork: Assessing the efficiency of footwork patterns, including lateral, forward, backward movements, and pivot turns.
- Racket Control: Measuring the player's ability to control the racket and generate power and spin.

Tactical Analysis

- Shot Selection: Investigating the choice of shots (offensive, defensive, transitional) during different stages of a match.
- Serve and Return: Evaluating the effectiveness of serve tactics—spin, placement, deception—and the ability to return serves effectively.
- Risk-Taking: Observing a player's inclination to attempt high-risk, high-reward shots.
- Match Strategy: Studying how players adapt to various opponents and match situations.

Physical Analysis

- Physical Fitness: Gauging cardiovascular endurance, muscle strength, power, and flexibility.
- Movement Patterns: Investigating speed, agility, and coordination around the table.
- Recovery Strategies: Looking at hydration, nutrition, and rest between points and sets.

Psychological Analysis

- Mental Toughness: Determining the ability to handle pressure, maintain concentration, and bounce back from setbacks.
- Emotional Control: Evaluating how effectively the player manages emotions and avoids negative self-talk.
- Visualization: Checking how the player employs mental imagery to boost performance.

Methods of Performance Analysis

- Video Analysis: Recording and reviewing matches to detect areas needing improvement.
- Notational Analysis: Using a coding system to log specific in-match actions and events.
- Biomechanical Analysis: Employing motion-capture technology to scrutinise movement kinematics and kinetics.
- Physiological Monitoring: Using heart-rate monitors, GPS trackers, or other devices to track physical exertion.

- Psychological Profiling: Applying surveys and interviews to assess mental skills and emotional states.

By leveraging performance analysis effectively, coaches and players gain insight into their capabilities and limitations, enabling more efficient training regimens and enhanced match performance.

Performance analysis provides objective feedback that helps table tennis players understand what actually occurred during a match, rather than relying solely on their own perception. Research suggests that coaches and players recall only about 30% of performance details accurately—analysis helps cover the remaining 70%.

In table tennis, this analysis can happen immediately on the court or later in a more controlled setting (e.g., a laboratory). Immediate feedback on court allows players to make real-time adjustments, though it's the coach's expertise that ensures problems are not only identified but also effectively addressed. During competitions, players can study their next opponent's profile and stats, combining performance data with past experiences to form a comprehensive game plan.

How we see implementing and streamlining our committee plan

Internally

- Dynamization of the Committee
- Regular meetings
- Internal knowledge sharing
- Creation of an ETTU research and development center (CID)
- Board ETTU Support

Externally

- Application for community funds
- Application for Academic Research Roles
- Partnerships with Universities and Research Centers
- Partnership with medical and sports equipment brands for the implementation of studies and development of the Table Tennis.

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