



MEDICINE

Matters

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MEDICAL
SYMPOSIUM
IN TURKEY



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A TEAM PLAY

IMPRESSION

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Anniversaries can be quietly celebrated and can serve as a pretext for a bit of nostalgia. That's fine. But they can become dangerous if, when we reach a milestone, we spend too much time looking back down the road. I am reliably informed that the participants at our 4th UEFA Medical Symposium in Istanbul avoided falling into that particular trap.

It was nice that it coincided with the 20th anniversary of our Medical Committee, but it was even nicer to receive feedback based on concrete proposals for the future. I know that the standards of medical care offered to top players have improved dramatically in recent years, but there is room for further improvement. And we must also do our utmost to extend medical care as far down to the grassroots of the game as we can. We want football to be regarded as a safe sport as well as an enjoyable and healthy one.

In that respect, I think that the contributions made by medical staff are sometimes undervalued. In a way, one could probably add 'rightly so', because team physicians often feel uncomfortable when they are dragged into the limelight. But, even if they remain essentially unknown to the public, we must ensure that, within the game, they are given the status

they deserve. What's more, their contribution inside the dressing-room often goes way beyond the provision of medical care and advice.

The medical staff forms an important part of the 'team behind the team'. And I am convinced that teamwork is the way forward. I had better explain what I mean, because the team doctor is very often just as much of a solo performer as the coach. That's why the symposium in Istanbul had a special value. In my view, 'teamwork' is about pooling resources. So I know for a fact that the representatives from all our member associations were delighted to have the opportunity to get together and 'talk shop', along with the team doctors from the top professional clubs who have been collaborating with our committee in our ongoing injury research project.

This is a prime example of the sort of teamwork we're talking about.

COVER

Studies on injuries in the UEFA competitions like the UEFA Champions League (here, Porto v Arsenal) can provide valuable information for club and national team doctors.

PHOTO: EMPICS



UEFA

EDITORIAL

BY LARS-CHRISTER OLSSON
UEFA Chief Executive

PLAYING TOWARDS THE SAME GOAL

I have realised that, by collecting data over the last six years, UEFA now has a solid database that is of genuine use to team doctors. Areas such as injury risks and recovery times can be reliably compared. A doctor who is worried by his team's incidence of injury now has factual information to support or refute suspicions that the injury rate is above average. Some team doctors might feel reassured to be able to demonstrate to the coaching staff or even the club chairman that, statistics in hand, a squad can expect about 40 injuries a season. That's why I think it is crucially important for our injury studies to be two-way streets, with UEFA gathering information and feeding global data straight back to the clubs or national teams. This is the sort of teamwork that leads to good results.

That's why I think it is important to invite team doctors to make full use of UEFA's data. There are, for instance, types of injury that an individual team doctor might encounter once every two, three, four or five years. By receiving input from so many different sources,

UEFA's databank may include information on a dozen similar cases in seven different countries. Having access to this sort of data gathered by UEFA is potentially helpful in terms of evaluating the different types of treatment and gauging recovery periods.

At the same time, our club licensing system gives us an opportunity to standardise or upgrade levels of medical care. Cardiac arrests, thank goodness, are a rarity but, frankly, one is too many. So insisting on cardiological screening is another step in the right direction.

But the physician's role is not restricted to the welfare of footballers. It is also about caring for players in a way that will protect the image of the game. That is why it is of paramount importance to continue our crusade in the field of doping – not just controls aimed at detecting illegal substances but also educational work aimed at informing and preventing. We have to address the issue from all possible angles – including, for example, deterring young players from straying into the territory

of recreational drugs and forgetting their status as role models.

The need to implant doping controls was the fundamental leitmotiv of UEFA's Medical Committee when it was set up two decades ago. That has not changed. Attempts are still being made to drag football into the quicksand which has threatened to suck down other sporting disciplines. We have to make sure that football remains a clean sport and we have to be able to demonstrate that football is a clean sport. Team physicians have an important role to play in warning players about the adulterated 'food supplements' on the market and the need for young professionals to fully assume their importance as role models to a whole generation.

We have come a long way in the last 20 years. But there is a long way to go and, in this particular game, we cannot afford to relax for a single moment. Now, more than ever, the important thing is to create a solid, thoroughly professional European team playing towards the same goal.



RECOGNITION AND MANAGEMENT OF FACIAL INJURIES

BY MIKE HEALY, CHARTERED PHYSIOTHERAPIST MCSP MSc, FA MEDICAL AND EXERCISE SCIENCE DEPARTMENT

Most injuries to the head or face result from contact with an opponent or, less frequently, with the ground, goalposts, ball, or missiles. In the 1997/98 and 1998/99 English professional seasons 2% (77) of injuries were to the head or face. There was also a significant reduction in head injuries at the 2006 FIFA World Cup (13 compared with 25 at the 2002 finals). The numbers may seem small but it is important that these potentially serious injuries are managed appropriately. This article focuses on injuries to eyes, ears and teeth.

EYE INJURIES

In football, these are typically to the surrounding bony and soft tissues rather than the eye itself. Bleeding, swelling and discolouration result in peri-orbital haematoma (a black eye). The eyelid may also be bruised or lacerated as a result of trauma. However, more serious ocular injuries do occur as a result of blunt or penetrative trauma, usually from contact with an opponent.

Abrasions are sustained on the outer covering of the eye (cornea) when a finger or foreign body (grass, soil, or part of an opponent's clothing) scratches the surface. When an object hits the eye, intra-ocular bleeding can occur within the front chamber between cornea and lens ('hyphema') or within the back chamber behind the lens ('vitreous haemorrhage'). The posterior segment of the eye may also be traumatised, causing detachment or tearing of the retina. Other serious but less frequent injuries include penetrative injury, laceration of the eye, and displacement of the lens.

Signs and symptoms of eye injury:

- severe eye pain
- reddening of the eye
- blurred vision
- double vision (diplopia)
- 'floating spots' / light flashes
- partial or complete loss of vision
- pupil asymmetry.

All injuries to the eye and surrounding tissues must be taken seriously. Prior to examination the first-aider should know whether the injured player wears contact lenses (or spectacles). In attending the injured player on the field, the first step is to observe the area round the eye looking for signs of trauma to the skin, including the eyelids and bony tissues. Looking into the eyes of the player, the examiner should further check that the pupils are equal in size and shape, and for signs of trauma to the surface of the eye.

Clearness of vision (visual acuity) can be ascertained by asking the player to read the scoreboard or pitch-side signs. Double vision can be detected by asking the player how many fingers (30-40 cm away)

are being held up in front of his or her eyes.

Eye movements are tested by the examiner placing an index finger 30-40 cm in front of the eyes and asking the player to follow slow movement of the finger in all directions (without head movement) to the extremes of visual field – normally approximately 180 degrees with the player looking straight ahead. Pupil reactivity is established by cupping hands over the player's eyes for several seconds, during which time the pupil diameter should dilate. On removing the hands the pupil diameter should constrict. The examination concludes with palpation of the orbit for any pain and/or deformity which may indicate an orbital fracture.

If the player has sustained only a soft tissue injury with no visual disturbance, removal from the field of play is governed by the extent of the injury. Normal visual acuity, peripheral vision, and an absence of eye, head and neck symptoms allow the player to continue. It is good practice for the physiotherapist to carry spare contact lenses (and a pocket mirror) should a player lose a lens.

Any abnormality detected during on-field examination (which may be indicative of corneal or intra-ocular injury) necessitates removal of the player from the field of play. Impaired visual acuity, abnormal



Eye injuries always require extra careful treatment.

eye movements, impaired pupil reactivity, and bleeding within the eye demand immediate assessment by an ophthalmologist. No attempt should be made to remove a contact lens or any foreign body embedded in the eye, nor should the eye be flushed with water.

A swollen eyelid should be managed by regular application of a cold compress in the subsequent 24 hours. But laceration to an eyelid requires specialist attention, as a tear duct may have been damaged during the trauma.

To transfer an injured player to hospital, padding or eye shields should be applied to both the injured and uninjured eye; movement of the uninjured eye is reciprocated in the injured eye and may exacerbate the injury. Padding the eyes also discourages the player from rubbing them and causing additional unnecessary trauma. If an intra-ocular injury is suspected the patient should remain lying down and not blow his or her nose.

EAR INJURIES

The low incidence of ear injury should not discourage you from being able to recognise and manage trauma to the external, middle and inner ear.

The most common external injury is bleeding between the ear 'cartilage' and the skin – an auricular

haematoma. Focal pain, swelling, redness and heat suggest such an injury. Recurrent trauma to the ear and the cartilage within may result in chronic swelling, commonly known as 'cauliflower ear'. The outer ear may also be lacerated, or partially torn from its attachment on the face.

Trauma to the middle ear in sport typically results from direct impact. The subsequent pressure changes within the ear can result in rupture of the 'ear drum' (tympanic membrane).

Signs and symptoms of middle/inner ear trauma:

- pain
- bleeding from ear cavity (auditory canal)
- impaired/loss of hearing
- dizziness or vertigo
- ringing in the ear (tinnitus).

Note: bleeding or discharge of clear fluid (cerebrospinal fluid) from the auditory canal may be indicative of skull fracture or injury within the skull. If any such bleeding exists, the player should be placed in a position that allows the blood/fluid to discharge from the ear (usually in a





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seated posture tilted towards the injured side). An absorbent pad may be lightly applied against the ear but nothing should be placed inside the ear to stem the flow of the discharge. Acute pain, hearing loss, or bleeding/discharge from the auditory canal necessitate urgent referral to a medical facility.

Acute bleeding within the substance of the external ear may be managed by ice and pad compression. Ideally, blood should be aspirated (removal via syringe and needle) by a qualified medical practitioner under aseptic conditions. Laceration and tearing of the ear also require qualified professional attention.

DENTAL INJURIES

In football, most dental injuries result from direct trauma – a collision with another player. A tooth may be loosened, cracked, chipped or displaced, and is likely to be in the upper row. Children are at greater risk than adults in the sporting environment; in this population, dental and jaw injury is considered serious because these structures are not fully developed. It is vital that dental trauma is managed appropriately if long-term deformity is to be prevented.

Signs and symptoms of dental trauma:

- bleeding or swelling of the gum around the tooth



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Tottenham Hotspur's Hossam Ghaly leaves the field with a mouth injury.

- visible deformity
- ineffective closure of the player's bite (malocclusion)
- pain on biting
- laceration within the mouth
- severe pain, or increased sensitivity to heat, cold or pressure.

On-field examination of the injured player should involve careful inspection of the damaged tooth and adjacent teeth. Gentle pressure should be applied to check for discomfort and/or loosening. Pitch-side management is governed by whether the tooth remains in position, has been partially dislocated (luxated) or completely dislocated (avulsed), and whether the tooth or socket is clean or dirty. If the tooth remains in position, bleeding

from the gum may be arrested by asking the player to bite on a damp gauze swab (10-20 minutes). A clean luxated tooth may be repositioned using firm finger pressure; the player should subsequently be referred for opinion.

In an acute avulsion, where tooth and socket are clean, the tooth should be held by the crown and promptly repositioned in the socket. If the root is dirty it should be cleansed with sterile normal saline, fresh pasteurised milk, or sucked clean by the player before repositioning. If bleeding persists, the player should sit forward and allow the blood to drain from the mouth.

In an acute avulsion where the socket is dirty and repositioning is inappropriate, the viability of the tooth can be compromised if the root is exposed to the air and allowed to dry out. Preservation of the tooth may be achieved by storing it in a medium such as fresh pasteurised milk, the player's own saliva (under the tongue or within the space between the lower teeth and the inside of the cheek – not children), contact lens solution, or water (the least favoured option). The player should also be requested to bite on a damp gauze swab to maintain the integrity of the exposed socket. Successful re-implantation may be achieved by a dentist up to two hours after injury.



Safety is a priority in children football.



Do not hold the root of the tooth or attempt to dry or 'sterilise' the tooth, as this will damage the fine 'suspensory' ligaments which will be needed to hold a reinserted tooth in position.

Enamel chip fractures are not painful and require non-urgent dental referral. Conversely, fractures, which expose the core of the tooth (dentine) to air, heat or cold, are painful and necessitate urgent referral.

Long-term management:

- All significant dental injuries should be assessed by a dental surgeon within 24 hours.
- Radiographs may be indicated where root injury or fracture is suspected.
- Dental injuries may take several weeks to heal.
- As a preventative measure, customised moulded mouthguards should be used (pre-moulded 'off-the-shelf' versions are not recommended).

Mouthguards should:

- be large enough, stable and of optimal thickness

- allow the player to breathe easily even when hyperventilating
- not interfere with speech
- protect teeth and gums against direct and transmitted injury
- be rinsed in antiseptic solution after use and stored in a plastic box
- not be exposed to excessive heat (this will deform the guard).

Finally, be aware of injury to the temporomandibular joints where the jaw attaches to the skull; forces from a blow to the mandible may be transmitted to these joints. Opening and closing the mouth may help to establish the existence of localised trauma.

Injury to the eyes, ears and teeth can have serious ramifications. A player's return to football should only occur when recovery is complete or where there is minimal risk of re-injury. If in doubt, refer for specialist examination. It is good practice to have details and phone numbers of relevant local hospitals posted in a highly visible position for home and visiting medical personnel.



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LIQUID ASSETS

Individualisation of hydration strategies in professional football

BY RON MAUGHAN AND SUSAN SHIRREFFS, LOUGHBOROUGH UNIVERSITY, ENGLAND

It has always seemed strange that professional football, in many ways the most professional of sports, can be unprofessional in terms of the approach of individual players to training and other aspects of preparation. Nutrition has generally been low on the priority list, if it has featured at all. Clubs expect players to train, and employs staff to monitor training, yet opportunities offered by good nutrition are neglected.

One of the key areas where nutrition can have a direct impact on performance is in the area of hydration. There is good evidence that players who become dehydrated are more susceptible to the negative effects of fatigue, including loss of performance and increased risk of injury. There is also evidence that high sweat and salt losses can be a factor in some of the muscle cramps that affect players in training and competition. This was known in occupational medicine a century ago, when workers had to toil hard in hot environments, but has been belatedly recognised in sports medicine.

Recently, however, a number of clubs have acknowledged the importance of hydration and that there is not one single strategy that suits all players in all environments. This has led to an assessment of individual needs so that a personal drinking strategy can be put in place for each player. This practice appears to have begun in American football, where pre-season training typically takes place in extreme heat and involves two sessions a day. In recent years, a number of fatalities, including that of Kory Stringer in the NFL, have raised the awareness of what can happen when things

go seriously wrong. Several of the top clubs now have monitoring strategies in place.

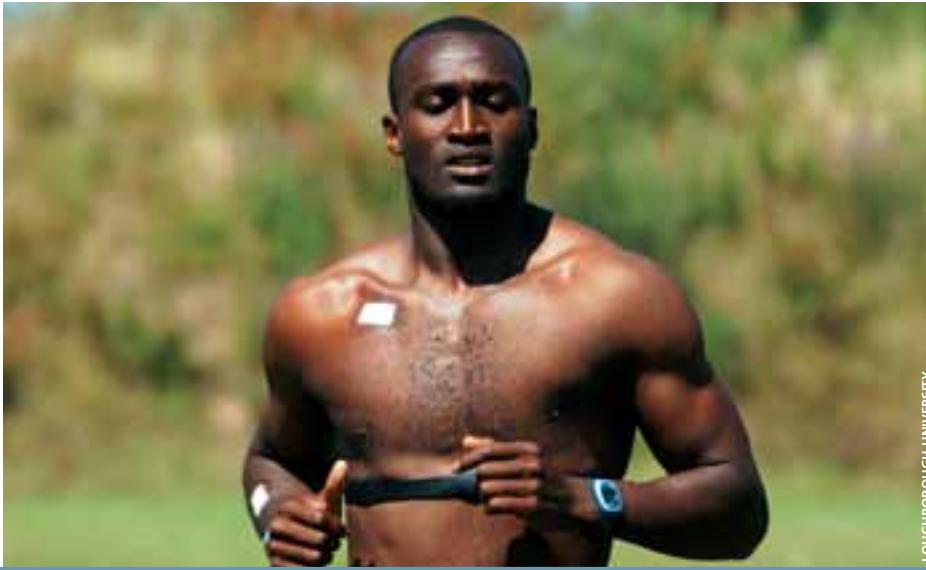
At its simplest level, weighing players before and after training gives an indication of their level of dehydration and risk of heat illness. This takes account of both the amount of sweat lost and the amount of fluid drunk and gives the net balance. There will be a small amount of weight loss due to the fuels (mostly carbohydrate, with a bit of fat) used to produce energy, but this amount is relatively small. There will also be water losses from the lungs and loss through the skin, but this again is small and in any case it also contributes to dehydration. A weight loss of 1 kg therefore represents a net loss of 1 litre (more or less) of body fluid.

A slightly better measure is obtained if the player is weighed before and after training or competition (nude and dry on both occasions) and his or her drinks bottle is also weighed before and after, assuming that all players drink from their own bottles and that anything that is taken from the bottle is swallowed and not either spilled over the head or spat out. If the decrease in weight of the drinks bottle is added to the decrease in weight of the player, we obtain the actual

sweat loss. We also get a measure of the player's drinking behaviour. All of this is easy to do, and all it requires is a set of kitchen scales to weigh the drinks bottles, a reliable set of scales to weigh the players, and a bit of organisation. The cost is effectively nil, only a bit of time on the part of one of the back-room staff. There are two more things we can add, but these need some more specialised apparatus and, in consequence, an economic factor comes into play. The first is the measurement of salt losses in sweat. There are many ways of performing this. The one that is most convenient in practice is to use gauze swabs covered with an adhesive plastic film: typically, four are applied at different sites before exercise begins and left in place for an hour or so. After they are removed, the amount of sweat and the amount of salt in the patch can be measured, allowing the "salty sweaters" to be identified.

We have made these measurements on the first team squads at a number of Europe's top clubs, typically testing about 20-30 players per club. The results have been consistent between clubs when the training sessions have been similar, but the variability between individual players has been striking. Key findings in a typical 90-minute training session are as follows:

- Average sweat loss is typically about 2 litres. But this can vary from less than 1 litre to over 3 litres, even though all the



A player in training with sweat collection patches applied to the forearm and chest.

LOUGHBOROUGH UNIVERSITY

players are doing the same training in the same conditions and are wearing the same amount of clothing.

- Average fluid intake is typically about 800-1000 ml, but this can vary from about 250 ml to over 2 litres.
- There is no relationship between the amount of sweat a player loses and the amount he drinks.
- The sweat salt content varies greatly: the better acclimatised players have lower sweat salt content, but again there is a large individual difference. Sweat salt (sodium chloride) losses can reach almost 10 grams in a single training session in some players, and this during twice-a-day training. Others lose only small amounts – 2 grams or less in the same training session.
- When training takes place in the cold, sweat losses may be almost as high as when training in the heat, but players drink far less and so end up just as dehydrated or even more so.

These findings may appear simplistic and predictable – apart from the last one, which is not intuitively obvious – but they give the club a chance to prescribe fluid according to the player's needs. The aim should be not to drink too much, as some players do, but to drink enough to limit weight loss to no more than 1-2% of the pre-exercise weight. There is also a suspicion, and it is no more than a suspicion at present, that players with a very high sweat salt content are more prone to cramp and that this risk can be reduced by salt supple-

ments. This would be consistent, though, with results obtained many years ago on miners, foundry workers, ships stokers and others who worked long and hard in hot environments and where salt loss was clearly linked to muscle cramps.

The second additional step is to assess whether players are adequately hydrated when they begin training or match play. There are a number of ways of doing this and the most reliable are based on measurements of urine. Well-hydrated players will produce a dilute urine that is pale in colour: dehydration results in a more concentrated urine that is dark in colour. Urine colour itself therefore gives a measure of how well hydrated a player is. A more precise measure can be obtained by measuring either the specific

gravity (density) or osmolality (concentration) of a urine sample collected before training or match play.

We have also made these measurements at many clubs, and the results suggest that some players are arriving for morning training in a dehydrated state. In some cases, this is because they have had no breakfast – not even a drink. This is less than ideal! We have also made these measurements before competitive games, and these results also suggest that some players are beginning games already dehydrated. Again, this increases the risk of poor performance, and it seems sensible to identify these players by making these simple measurements and ensuring that they are reminded of the need to drink fluids during the day.



Close-up of a sweat patch.

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TALKING TURKEY



The first thing to record about the 4th UEFA Medical Symposium, staged at the Conrad Hotel in Istanbul on the final days of November, was that it was a prime example of Turkish hospitality – starting with the welcomes by UEFA's first vice-president Senes Erzik, the president of the Turkish association, Haluk Ulusoy, and the person who could be described as the 'medical host', Mehmet Binnet, a long-standing member of UEFA's Medical Committee and one of the prime movers in the organisation of an event which brought together medical representatives from all of UEFA's member associations.

It might seem strange to highlight the 'social' side, but the meeting in Istanbul underlined the fact that the UEFA symposium differs from other medical events in that dialogue, networking, pooling information and exchanging knowledge are as relevant as the more formal presentations. It was very much a football-specific event focusing on the team doctor's status, role and *modus operandi* rather than specialised nuts-and-bolts topics such as surgical procedures.

That does not mean that there was no room in the programme for specialised topics. Dr Gregor Guthauser, for example, made a detailed presentation on resuscitation techniques and Mehmet Binnet conducted an interesting review of the evolution of knee surgery in recent times.

Evolution was one of the key words at a symposium which coincided with the 20th anniversary of UEFA's Medical Committee. The three men who have chaired the committee – Dr Hans-Jörg Eissmann, Dr Michel D'Hooghe and the current president, Dr Urs Vogel – were in Istanbul, along with the current vice-president,

Prof. Stewart Hillis, the only member to have been part of the committee since its inception. So the generic theme of a symposium that combined looking ahead with glances into the rear-view mirror was 'Medical Support in Football – Past, Present and Future'.

There is no doubt about the positive evolution of the medical support offered to players since the days when a doctor was called in to diagnose and treat injuries. "The Medical Committee has also changed its profile and its remit," Stewart Hillis recalls. "When we first started meeting under the guidance of Dr Eissmann, our *raison d'être* was to initiate a doping control programme. So it was an important period for us to go through and to lay the foundations for all that is being done today in that field. The committee then evolved to a much wider remit incorporating aspects of the whole medical and scientific basis of medical support to footballers."

"Then we made a major step into another area with the injury studies currently being carried under the aegis of Jan Ekstrand – and the information that has been gathered and the lessons we have

learned are already beginning to trickle right down into the grassroots of the game," Stewart adds. "In recent times, our brief has expanded still further into youth, female and semi-professional football and has extended into specialised areas such as training concepts for futsal. We must now consider the educational needs of touchline carers and therapists as well as the mainstream team doctors and physiotherapists. This is an area in which the Medical Committee will become more active in the future."

The current status of the medical support team was outlined when Stewart Hillis took the stage alongside the current Turkish national team coach, Fatih Terim. The Turkish association is one of many who have realised the importance of investing resources in the team behind the team. "The prime qualities I look for in the team doctor," Fatih Terim commented, "are loyalty, honesty and a strong team ethic. These days, the medical staff must be prepared to make a positive contribution to the atmosphere in the dressing-room, in addition to their purely medical roles."



Specific training routines can help to prevent injuries.

GILLIAR/AFP/GETTY IMAGES

Stewart Hillis emphasised that constant dialogue between the coaching and medical teams is essential. "What we don't want is for the doctor only to meet the coach when there is an injury and to become a sort of messenger for bad news. The medical team needs to meet on a regular basis and the doctor and coach also need to have a continual dialogue."

Doctor and coach also stressed the need to establish a strong relationship able to withstand external pressures and to handle day-to-day situations that can be potentially disruptive. For example, a situation where the doctor tells the coach that a player is unfit and, five minutes later, the player knocks on the coach's door and says he is OK and wants to play.

"I would never go against my team doctor," Fatih Terim insisted. "In that situation, I would recommend a meeting between coach, doctor and player to clarify the situation and clear the air."

Fatih Terim added that he often invites the team doctor to attend press conferences in order to issue first-hand information on injuries. It has to be said that not all team physicians necessarily feel comfortable when besieged by microphones – and the doctor's relationships with the media could well appear on future agendas. In fact, there were many interesting issues raised during a session which could have run for a long time after the final whistle had to be blown.

THE TEAM BEHIND THE TEAM

Fatih Terim's reliance on a good medical and fitness team was underlined by two sessions involving Professor Franco Benazzo, club doctor at FC Internazionale Milano, and Dr Paul Balsom, a physiologist who has, for the last eight years, been a member of Lars Lagerbäck's team behind the Swedish national team.

"The challenge is to organise an efficient, well-running medical machine in all its components," said Franco Benazzo, "including interaction with the technical staff." It's only fair to say that other physicians might look with a degree of envy at the resources placed at his disposal. Inter's team-behind-the-team has a full 11 players, including physios, fitness trainers, rehabilitation therapists, a nutrition/doping expert, a psychologist and two PhDs working on rehabilitation and research. State-of-the-art technical resources

offer opportunities to measure individual workloads during training via sensors positioned around the training ground that receive pulses from tags on each player's shoulder. This provides 4Hz sampling (four times a second) for up to 22 players.

Acceleration and heart-rate telemetry is also performed by a system that receives information from small devices in a plastic belt and is then USB-connected to a computer. Sampling is at 5Hz for acceleration measurements and 1Hz for heart rate,



PARAISO/AFP/GETTY IMAGES



RANGE/LAIF/GETTY IMAGES

and the system can cope with individual input from a full squad of 25 players.

All this allows the club to plot training densities over an entire season and to merge that data with blood/chemical values and analysis of match performance performed by a tracking system that allows each player's distances and speeds to be recorded. "This emphasis on individual controls," Franco Benazzo commented, "is even more essential at a club where the 26-man first-team squad contains 20 international players of 11 different nationalities – only four of whom are Italian."

Even though the Swedish national team offers less cultural diversity than the Inter squad, Paul Balsom agrees that "monitoring the intensity of training using heart-rate monitors has been an integral part of our preparations for the last two World Cup and European Championship tournaments."

He also underlines the importance of designing individual programmes. "The aim is to ensure that physical preparation of all players in the squad is performed at the highest possible standard, allowing each individual to optimise his own fitness potential and performance whilst minimising the risk of injuries."

Easier said than done, you might think – and Paul would agree with you. "It's a complex equation," he admits, "based on a combination of scientific principles, common sense, experience and cultural considerations. In terms of workload, you're

trying to determine the optimum combination of volume, frequency and intensity. You're trying to design training routines that have high tempo but low physical loading." Paul agrees that cutting-edge technical equipment provides reliable measurement of effort and the ability to pinpoint each player's strengths and weaknesses. "But we mustn't fall into the trap," he adds, "of asking 'how much?', 'how many?', 'how far?' and 'how fast?' without stopping to ask 'how well?'. We mustn't forget that quality comes

before quantity. That's why optimum physical preparation is based on finding a correct balance between work and recovery."

Vindication of his view can be found in the Swedish team's record of the only defeat in eight years being in the second match of a Saturday-Wednesday double-header. The basic ingredients for recovery are, as ever, food, fluids and sleep, "coupled," says Paul, "with exercising that, again, caters for individual differences and lifestyles."

CLUB AND COUNTRY

One of the major concerns to emerge from the discussion sessions in Istanbul was the hardy perennial of how to establish situations of club and country rather than club v country. These concerns can be neatly dovetailed with Paul Balsom's remarks about planning effective recovery programmes for the interval between Saturday-and-Wednesday double-headers. The obvious question is: what happens after the Wednesday match?

The national team doctor, who has nursed the players back to peak level between Saturday and Wednesday, often sees them (a) disappearing straight to the airport to board a private jet, or (b) taking a 5 a.m. flight so that they can go directly from the airport to arrive in time for club training sessions, or, if the national team has played an away fixture, the return flight home can be followed by either (a) or (b). What has happened to the hallowed formula of food, fluid and sleep? And what are the after-effects when the player returns to league action at the weekend?

The participants in Istanbul maintained that, even now, there is still

an insufficient or non-existent flow of communication between club and national team medical staffs. One of the proposals aimed at improving medical dialogue was for UEFA to create a standard medical report form that can be transmitted from national team to club doctors – and vice versa.

The discussions in Istanbul indicated that there is even room for improvement at the most basic of logistical levels. The national team doctors would welcome a reliable contact person for each member of the squad. Away fixtures can be in different time zones or can entail late-night or early-morning arrivals, and the national team doctor, no



Dr Michel D'Hooghe at the Medical Symposium in Istanbul.



matter how much he wants to contact a club about an injury to their player, all too often finds that he cannot. And doctors who phone clubs first thing in the morning are often confronted with pre-recorded messages such as "if you wish to buy tickets for the match against United Athletic, press 1; if you want travel information about our away game with United Athletic, press 2" or, alternatively, come to a full stop at a switchboard operator who does not know how to contact the team doctor at the training ground, which is often at a different location from the main offices.

Giving the player a report to take back is unreliable, as there may not be training the following day, the report might be mislaid, and, in any case, valuable time is lost if special examination facilities, such as MRI, need to be arranged.

The general feeling was that, in this day and age, it should not be too difficult to establish viable doctor-to-doctor communication routes between clubs and countries based on reliable all-hours telephone or mobile numbers – and a commitment by at least one member of the club's medical staff to leave the mobile switched on as an emergency contact during the critical hours following an international game. It is also feasible for electronic transmission systems to be put in place, which will allow the national team doctor to send messages confirming that there is no injury or illness or to pass on details of any medical problem.

THE DRIVE AGAINST DOPING

As Michel D'Hooghe pointed out during his review of the past two decades, UEFA's Medical Committee was set up in 1986 with the prime objective of initiating a drive against doping. UEFA's commitment to the cause of keeping football clean – and demonstrating that it is clean – can be gauged by the statistical review of the recent past presented by Michel, Dr Jacques Liénard and the head of UEFA's anti-doping unit, Marc Vouillamoz, during the symposium in Istanbul.

In the 1998/99 season, 148 tests were carried out (92 at UEFA Champions League matches, 48 in the UEFA Cup, and eight in the UEFA Intertoto Cup). During the 2005/06 campaign, this total had risen to 1,348. No fewer than 248 of the tests were carried out in other competitions: 60 in futsal, 100 during the Women's European Champi-

onship, and 124 at UEFA's youth tournaments.

A squad of 38 doctors, male and female, has already been assembled. They attended a workshop and seminar in June – and rated it a positive(!) experience in terms of standardising methods and establishing a team spirit.



Dr Jacques Liénard gives his presentation on doping.



UEFA's doping control equipment.



The figures, of course, make interesting reading in themselves – especially as the data for the 2005/06 season represents a 250% increase over the previous campaign. But the nature of the testing and the results make even more interesting reading. Of the 925 players subjected to in-competition tests, almost 300 were tested for EPO. This ratio was up to two-thirds in out-of-competition testing, where the search for EPO was included in 361 of the 423 tests conducted.

The results were, at the same time, heartening and an indicator of where future efforts could well be concentrated. Statistically, only 0.52% of the tests yielded adverse findings. In more readable terms, this boils down to seven 'positives'. One related to a professional player who has just completed a one-year ban following ingestion of anabolic steroids. But two tests at Under-19 level revealed cannabis consumption, and two Under-17 players tested positive for cocaine.

As Dr Urs Vogel, chairman of UEFA's Medical Committee, remarked as he brought the symposium to a close, this indicates a need to continue and to enhance UEFA's attention to youth tournaments. As regular readers of Medicine Matters may recall, UEFA's presence at the age-limit tournaments staged during the 2005/06 season was not confined to testing. DVDs and brochures provided tangible follow-ups to the educational sessions offered to – and welcomed by – all the finalists at Under-21, Under-19 and Under-17 competitions, men's and women's.

"The use of social drugs is something we have to strenuously discourage," Urs Vogel underlined. "We have to emphasise not only the potential health- and career-damaging aspects, but also the need to assume the responsibilities that top footballers have as role models for supporters and for society in general."

As you may have noticed, the cases cited above add up to five. The other two 'positives' were down to the use of Beta-2 agonists to treat asthma. Both instances were related to tests conducted at women's competitions and no Therapeutic Use Exemption (TUE) had been requested.

In terms of the TUE option, the awareness threshold among team doctors has undoubtedly risen in recent times – as demonstrated by

statistics. No fewer than 43 of UEFA's member associations have now submitted TUE requests, with 17 of them sending more than 20 apiece. UEFA dealt with 82 TUE applications in the 2003/04 season, 350 in 2004/05, and 546 in 2005/06. As Marc Vouillamoz explained, the introduction in 2007 of UEFA's new web-based 'FAME' portal will simplify the process even further, allowing team doctors to file their applications online and to receive an immediate pre-confirmation.

Last season, no fewer than 512 of the 546 applications were via the abbreviated TUE form related to the inhalation of certain Beta-2 agonists (salbutamol, salmeterol, terbutaline, formoterol) to treat asthma or the use of glucocorticosteroids by non-systemic routes (which remain detectable for a con-



Doping awareness sessions are now carried out in conjunction with the UEFA youth competitions.

UEFA



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siderable period of time). The standard TUE form has to be used for all other therapeutic uses. Of the 34 requests, ten were turned down – for various reasons, including systemic injections of corticoids or glucocorticosteroids (recovery, grass

allergy), the use of intravenous infusions, or the oral administration of corticoids or Beta-2 agonists. One of the refusals related to the administration of finasteride as a treatment for alopecia – which is the perfect cue for a few lines on...

AVOIDING THE TRAPS

If you want to convince your players about the dangers attached to the consumption of nutritional supplements, half an hour with Dr Hans Geyer would be more than enough. His credentials spoke for themselves when he took the stage in Istanbul: managing director of the Centre for Preventive Doping Research at the German Sports University in Cologne, deputy head of the WADA-accredited doping control laboratory at the same location, and a specialist in the fields of anabolic androgenic steroids and nutritional supplements.

The message he delivered to his colleagues in Istanbul was clear: players need to be warned about the risks and protected from unintentional doping. By implication, it obliges the team physician to be active on two fronts: deterring players from self-medication with nutritional supplements, and being scrupulously attentive to the contents of any that they might wish to recommend themselves. In another session in Istanbul, Paul Balsom, attached to the Swedish national team, had stressed that their policy was to systematically avoid such substances and to rely on traditional recipes of food, fluid and sleep in order to prepare players for the following game. Energy drinks are the Swedish team's only concession to 'processed' products.

Hans Geyer underlined the need for extreme care by citing cases

of trade names that are seemingly the same – but not quite. To name random examples, Mobilat Gel is innocuous but Dolo Mobilat Gel will test positive for ephedrine. Rhinopront Spray is harmless but Rhinopront capsules and syrup contain phenylephrine and phenylpropanolamine respectively.

And, to use the old expression, what's in a name? products known as Ma Huang or Guarana are marketed as 'energy boosters' with a suggested dose of 2-4 tablets half an hour prior to effort. But four hours after the ingestion of a single tablet, testing can reveal the presence of up to two-and-a-half times the permitted level of ephedrine.

'Herbal' products can also be a doping minefield, Hans Geyer warned. A player tempted to take 'herbal diet capsules' could find that he or she is ingesting 15mg per capsule

of sibutramine. Ditto consumption of a seemingly innocent 'diet tea'.

However, Hans Geyer comments that the most notorious traps concern nutritional supplements contaminated with prohormones or the variations on the anabolic steroid theme. The famous IOC study, based on analysis of 634 supplements from 215 different companies located in 15 countries, demonstrated that 14.8% contained prohormones not declared on the label. Of the products purchased in the Netherlands, one in four would have tested positive.

Although the study was carried out five years ago, there are few signs that the problem is remitting. Hans Geyer reported that, within the last 18 months, products have been confiscated in Germany, where a manufacturer was asked to convert powder (sent from another country) into fizzy tablets. Subsequent investigations revealed that some fizzy vitamin C, magnesium or multi-vitamin tablets contained metandienone or stanozolol. "Within the next few years," he added, "we can expect more cross-contaminations with new designer steroids."

So where does the team physician go for reliable information? Hans Geyer recommended using national anti-doping information systems, pointing out that, in Germany, the database on www.osp-koeln.de is good at indicating pitfalls, as is the Rote Liste – the Red List providing a reliable index of therapeutics offered by the German pharmaceutical industry.



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