Sports Injuries: the Role of Imaging in Diagnosis and Treatment

Injuries related to sport are an unfortunate complication of an active lifestyle. Such injuries may be acute - for instance, a sprained ankle ligament - or they may be chronic, such as shoulder impingement syndromes or tendinosis of the elbow. Whether suffered by a regular runner or an occasional skier, these injuries can impact significantly on an individual’s enjoyment of exercise.

Diagnostic imaging provides for accurate assessment of injuries, allows the clinician to make an informed evaluation of prognosis and may also be used continued on page 2
degeneration, are also sensitively demonstrated and multiplanar reformats and surface rendered images detect abnormal morphology, predisposing to conditions such as hip impingement.

What follows is a brief overview of examples of the enormous range of sports injuries, as demonstrated by diagnostic imaging.

Shoulder
Chronic shoulder pain is one of the most common presenting complaints and shoulder injuries frequently affect athletes involved in throwing activities or racquet sports. Rotator cuff tears, impingement with chronic tendinosis, subacromial bursitis and acromioclavicular joint inflammation are readily diagnosed by MRI (Fig 1). However, more so than for any other joint, chronic shoulder pathologies are sensitively detected by ultrasound in experienced hands (Fig 2). The ‘learning curve’ for shoulder ultrasound is long and shallow, but with experience its superior spatial resolution, coupled with the capacity to image the joint in motion make ultrasound the preferred investigation of many musculoskeletal radiologists. It is also commonly used to guide therapeutic steroid injection.

Knee
The knee is particularly prone to injury in contact sports, running and any activity which involves rapid deceleration and twisting movements – skiers are especially vulnerable. Injuries of the knee are best imaged by MRI, which demonstrates the menisci, ligaments and tendons around the joint in precise detail. Acute injuries which may be shown include meniscal tears and ligament rupture; often, such injuries co-exist (Fig 3). Athletic activity may accelerate degeneration of the articular cartilage, and MRI can assess the presence and extent of this, as well as detecting complications such as meniscal degeneration and loose bodies within the joint which may warrant surgical intervention.

The diagnostic role of ultrasound is much more limited in the knee, though chronic injuries such as patellar tendinosis are elegantly depicted.
Hip/Pelvis

Hip pain in an older sportsman is often related to articular cartilage degeneration, and MRI can confirm this whilst also assessing damage to the acetabular cartilaginous labrum. Femoro-acetabular impingement is an increasingly recognised cause of labral injury in a younger age group and the bony abnormalities which predispose to this are most accurately delineated by CT scanning (Fig 4). Inflammation of the tendon attachments around the hip and pelvis, including the hamstring origins and the gluteal muscle insertions, is a common cause of chronic symptoms, sensitively diagnosed by MRI and may be treated by ultrasound-guided injection (Fig 5).

Elbow and Wrist

Sporting injuries around the elbow are frequently related to the attachments of the common flexor tendon of the forearm or the common extensor tendon (‘tennis elbow’ or lateral epicondylitis). These injuries are often chronic and although self-limiting are slow to resolve and may respond well to the ultrasound-guided treatment of ‘dry-needling’, promoting scar formation in the tendon. Wrist pain is well-assessed with MRI, which may demonstrate ligament injury (including to the intracapsular scapholunate ligament), tears of the triangular fibrocartilage, tendonitis or occult fracture of the scaphoid (Fig 6). Ultrasound also clearly demonstrates inflammation around the tendon sheaths (teno-synovitis) or synovitis in the carpus and can accurately guide injection of steroid if appropriate in such cases.

Ankle and Foot

Acute injuries of the ankle often result from twisting mechanisms and involve ligament damage. Ligament sprains are sensitively demonstrated by MRI, which also detects synchronous bony bruising and other soft tissue injuries, for instance tendon tears. Both MRI and ultrasound may be of use in assessment of Achilles tendon injuries and will demonstrate chronic tendinosis as well as acute rupture (Fig 7). Other chronic conditions of the ankle joint include impingement syndromes, and joint degeneration, each of which may respond to guided steroid injection.

Pain in the forefoot in runners may relate to bony stress in the metatarsals or sesamoid bones, and these pathologies are best diagnosed by MRI. Inflamed bursae in the interspaces between the metatarsals must be distinguished from neuromas of the digital nerves (Morton’s neuroma) and ultrasound or MRI will allow this – ultrasound having the added advantage once again of enabling a targeted steroid injection once the diagnosis is confirmed.

Summary

Diagnostic imaging is an invaluable adjunct to clinical assessment in patients with sports-related injuries. MR imaging, ultrasound and CT imaging together provide the means to assess both soft tissue and bone injuries in exquisite detail. Whether in confirming the clinical diagnosis, fully characterising the extent of trauma or in uncovering an occult injury, imaging provides the next step in the return to sporting fitness.

Dr Charles House
Consultant Musculoskeletal Radiologist
UCLH NHS Trust
In order to maintain our comfortable and relaxing ambience for our patients about to undergo a scan, the ESC centre is currently undergoing major redecoration. Interior designer Hugh Berry, whose team has worked on the transformation of many Harley Street properties and large London Hospitals sees great potential in our clinic.

“The many quirky Georgian features in this potentially beautiful building will be revealed and enhanced. This will be achieved through restoration of the original details, which will then be further improved with clever use of colour and design. The needs of a modern clinic can then sit harmoniously within this grand old building.”

We look forward to welcoming you and your patients to the new look centre when it is finished later this summer.

In recognition of Bowel Cancer Awareness month in April, the European Scanning Centre was pleased to work with the charity Bowel Cancer UK to promote the benefits of colorectal cancer screening. As well as offering a discount to patients undergoing a virtual colonoscopy during the promotion, the Centre pledged to donate a proportion of the scan costs to Bowel Cancer UK to help support the charity in its invaluable ongoing work in this area.

Ian Beaumont, Director of Communications was presented with a cheque during a recent visit to the Centre and said ‘Bowel Cancer UK is passionate about early colorectal cancer detection, because early detection saves lives. We are extremely grateful to companies who help patients get the early screening they need.’

During this promotion alone, 40% of patients screened were found to have polyps or cancerous tumours. An incidental finding of a 1.5cm gallstone accounted for another patient who came in for a scan suffering from extreme abdominal pain.

We are delighted to announce that Patricia, our Head of Patient Services has had a baby girl, Alicia. While Patricia is on maternity leave, Nelia Cantinho is helping in the kitchen and will continue to ensure our patients are well fed and watered.

We also welcome Bezhad Mokri-Moayadd who joins us as an Applications Specialist and Radiographer. Bezhad has a tremendous pedigree as not only is he a qualified radiographer who will assist in our scanning, but is also a professional sports man and is currently studying for a PhD in medical research at University of London, Birkbeck College. Bezhad is looking forward to meeting many of you over the coming months.

In recent studies in molecular genetics have begun to unravel the genetic causes of coronary heart disease. However, such studies have generally required large numbers of patients to be sufficiently powered.

The use of calcium scores, a validated surrogate end-point for CHD, will allow for fewer patients.

In collaboration with Professor Nilesh Samani, BHF Chair of Cardiology at Leicester Medical School and an international authority in CHD genetics, we have recently initiated a pilot study into the association between genetic polymorphisms and calcium scores, with a view to applying for further funding from research grant bodies to significantly expand on these findings. The other collaborators in this exciting project are cardiologists, Dr Laura Corr and Dr David Brull, and Professor Stephen Bustin, Chair of Molecular Science at Barts and The London Medical School.
radiologist that the patients are here and our job to inform the radiographers or offer patients a drink if they can have one. It is at reception, take them downstairs to patients start arriving. We greet patients make sure we have all the referral forms on our patient record system and ‘A typical day on reception will be busy performing a variety of other admin tasks, including answering phones and booking appointments, and vice versa’. 

Which other departments do you work closely with in the ESC and how important is it for you all to work as a team?

Emma ‘As we are the middle person between the patient and the radiographer or on duty radiologist, we interact mostly with the imaging department. Our job is to ensure that everything runs smoothly. We need to know what patients are having done and where they are in the Centre at all times so we can keep everyone informed. Lindsey and I work extremely well together. We know when the other needs help so will jump in and lend a hand’.

How long have you worked at the ESC?

Lindsey ‘I have been with the Centre for just over three years. I work on reception two days a week’.

Emma ‘I have been here for about four years. I am the Centre’s receptionist for the other three days. When I am on reception, Lindsey works in the front office performing a variety of other admin tasks, including answering phones and booking appointments, and vice versa’.

Your role is a busy and diverse one. What happens in your typical working day?

Lindsey ‘A typical day on reception will be busy from start to finish. We first check the diary on our patient record system and make sure we have all the referral forms and medical questionnaires before patients start arriving. We greet patients at reception, take them downstairs to the patient lounge and ensure they are offered a drink if they can have one. It is our job to inform the radiographers or radiologist that the patients are here and to hand over all completed paperwork. Another part of our role is preparing the ultrasound room for the radiologists’.

Emma ‘We print out any medical questionnaires if patients have not remembered to bring them along to their appointment. We are also responsible for all the billing. We take payments from self-paying patients at reception after they have had their scan and had time to relax. We also call insurance companies to confirm cover for insured patients’.

What challenges do you face?

Lindsey ‘We also work closely with the medical secretaries Julie, Maria and Suzanne as we can get doctors phoning in about their reports. It is very important to be a good team player and get to know each other’s personalities in order to communicate effectively’.

How do you help reassure patients and keep them calm if they are feeling anxious about their scan?

Emma ‘We try to reassure patients as much as possible and make them feel comfortable and not rushed. We always make sure they have had enough refreshments and feel okay before they leave the Centre’.

Lindsey ‘The caring side just comes out and you try to reassure them as much as possible. You get to know which patients want to talk and which want to be left alone to sit quietly or read. We always offer patients a drink providing they can have one and point out that our radiographers will be happy to answer any questions they may have about the scan’.

What qualities do you need?

Lindsey ‘You also need to be a friendly, calm and organised person who can work well under pressure’.

What do you enjoy the most about working at the ESC?

Emma ‘That’s simple - the people! We are a small, friendly team and we all get on really well. Working on reception is also a great way to meet new people, which I enjoy’.

Lindsey ‘I like the buzz I get when the Centre is busy and I enjoy helping people. I also like working in a small team and we all get on so well. We have some great social events such as our recent Summer Sports Day, which was a really good laugh’.

What makes a good receptionist?

Emma ‘You need to have a bright and cheerful nature and be used to dealing with many different people with different personalities and of different cultures and religions’.

Emma ‘You also need to be a friendly, calm and organised person who can work well under pressure’.

People like to see a familiar face/hear a familiar voice. Have you developed any good working relationships with referring doctors and/or their secretaries since you’ve been working here?

Lindsey ‘I have developed professional relationships with numerous doctors and secretaries in the Harley Street area. I think it definitely helps for them to speak to someone they know and to hear a familiar voice. It builds up a level of trust, as they can be confident they are speaking to someone who knows what they are doing and who will deliver what they promise’.

Emma ‘Yes, definitely! The benefit of working on Harley Street for so many years is that I already knew many of the local referring doctors and their secretaries before I started here. I definitely think it is a bonus that they can call up or drop in and speak to someone familiar. It gives us that personal touch’.

How do you help reassure patients and keep them calm if they are feeling anxious about their scan?

Emma ‘We try to reassure patients as much as possible and make them feel comfortable and not rushed. We always make sure they have had enough refreshments and feel okay before they leave the Centre’.

Lindsey ‘The caring side just comes out and you try to reassure them as much as possible. You get to know which patients want to talk and which want to be left alone to sit quietly or read. We always offer patients a drink providing they can have one and point out that our radiographers will be happy to answer any questions they may have about the scan’.

What do you enjoy the most about working at the ESC?

Emma ‘That’s simple - the people! We are a small, friendly team and we all get on really well. Working on reception is also a great way to meet new people, which I enjoy’.

Lindsey ‘I like the buzz I get when the Centre is busy and I enjoy helping people. I also like working in a small team and we all get on so well. We have some great social events such as our recent Summer Sports Day, which was a really good laugh’.

What makes a good receptionist?

Emma ‘You need to have a bright and cheerful nature and be used to dealing with many different people with different personalities and of different cultures and religions’.

Emma ‘You also need to be a friendly, calm and organised person who can work well under pressure’.

People like to see a familiar face/hear a familiar voice. Have you developed any good working relationships with referring doctors and/or their secretaries since you’ve been working here?

Lindsey ‘I have developed professional relationships with numerous doctors and secretaries in the Harley Street area. I think it definitely helps for them to speak to someone they know and to hear a familiar voice. It builds up a level of trust, as they can be confident they are speaking to someone who knows what they are doing and who will deliver what they promise’.

Emma ‘Yes, definitely! The benefit of working on Harley Street for so many years is that I already knew many of the local referring doctors and their secretaries before I started here. I definitely think it is a bonus that they can call up or drop in and speak to someone familiar. It gives us that personal touch’.

What do you enjoy the most about working at the ESC?

Emma ‘That’s simple - the people! We are a small, friendly team and we all get on really well. Working on reception is also a great way to meet new people, which I enjoy’.

Lindsey ‘I like the buzz I get when the Centre is busy and I enjoy helping people. I also like working in a small team and we all get on so well. We have some great social events such as our recent Summer Sports Day, which was a really good laugh’.

What makes a good receptionist?

Emma ‘You need to have a bright and cheerful nature and be used to dealing with many different people with different personalities and of different cultures and religions’.

Emma ‘You also need to be a friendly, calm and organised person who can work well under pressure’.

People like to see a familiar face/hear a familiar voice. Have you developed any good working relationships with referring doctors and/or their secretaries since you’ve been working here?

Lindsey ‘I have developed professional relationships with numerous doctors and secretaries in the Harley Street area. I think it definitely helps for them to speak to someone they know and to hear a familiar voice. It builds up a level of trust, as they can be confident they are speaking to someone who knows what they are doing and who will deliver what they promise’.

Emma ‘Yes, definitely! The benefit of working on Harley Street for so many years is that I already knew many of the local referring doctors and their secretaries before I started here. I definitely think it is a bonus that they can call up or drop in and speak to someone familiar. It gives us that personal touch’.

What do you enjoy the most about working at the ESC?

Emma ‘That’s simple - the people! We are a small, friendly team and we all get on really well. Working on reception is also a great way to meet new people, which I enjoy’.

Lindsey ‘I like the buzz I get when the Centre is busy and I enjoy helping people. I also like working in a small team and we all get on so well. We have some great social events such as our recent Summer Sports Day, which was a really good laugh’.

What makes a good receptionist?

Emma ‘You need to have a bright and cheerful nature and be used to dealing with many different people with different personalities and of different cultures and religions’.

Emma ‘You also need to be a friendly, calm and organised person who can work well under pressure’.

People like to see a familiar face/hear a familiar voice. Have you developed any good working relationships with referring doctors and/or their secretaries since you’ve been working here?

Lindsey ‘I have developed professional relationships with numerous doctors and secretaries in the Harley Street area. I think it definitely helps for them to speak to someone they know and to hear a familiar voice. It builds up a level of trust, as they can be confident they are speaking to someone who knows what they are doing and who will deliver what they promise’.

Emma ‘Yes, definitely! The benefit of working on Harley Street for so many years is that I already knew many of the local referring doctors and their secretaries before I started here. I definitely think it is a bonus that they can call up or drop in and speak to someone familiar. It gives us that personal touch’.
Is universal statin therapy in diabetes best practice?

Patients with diabetes are at particular high risk of cardiovascular disease (CVD) with a prevalence 2–3 fold that of the general population. Indeed CVD accounts for the majority of deaths of these patients. The number of people with diabetes in the UK is currently more than a million but with the obesity epidemic is expected to increase to at least 3 million within a few years and possibly up to 6 million, or 1 in 10 of the population. Therefore, it is important to develop an effective strategy for prevention of CVD in these patients.

Statin therapy in diabetes

In recent years ‘statins’ have been increasingly promoted in the fight against CVD both in patients with and without diabetes and the recommendations for their use have been ever broadening. The American Heart Association (AHA) recommends that patients with diabetes belong in the same high-risk category as patients with known CVD i.e. ‘coronary heart disease equivalents’ and as such should be subject to the same recommendations for lipid lowering therapy. The recent Joint British Cardiac Societies’ guidelines for the prevention of CVD have echoed this and state that patients with diabetes should be routinely considered for statin treatment regardless of cholesterol levels. However, careful analysis of the data from the relevant epidemiological trials suggests that such a policy may not be appropriate for all diabetic patients encountered in clinical practice and that a more focussed approach to statin prescribing would be preferable. Importantly, in many studies the relative risk reductions did not translate into similarly impressive reductions in absolute risk (Table 1).

In the MRC/British Heart Foundation study, 5 years of statin administration to diabetic patients, half of whom had previous CVD, resulted in a 1.5% reduction in actual mortality. This equates to 1000 patients needing treatment with a statin over a 5 year period to prevent 15 deaths, or just over 3 per year. Beneficial results were also reported in the Collaborative Atorvastatin Risk Reduction Study (CARDS). However, several studies have failed to demonstrate any beneficial effects of statins in diabetic subjects. In the Antihypertensive and Lipid Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), 40mg pravastatin was compared to usual care in 3638 subjects. Despite these subjects also being hypertensive and many with a previous history of coronary or other occlusive arterial disease, there was no significant reduction in coronary event rate. A similar lack of any significant benefit was also reported in both the lipid lowering arm of the Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT), despite all patients being hypertensive and having at least one other cardiovascular risk factor, and the recent Atorvastatin Study for Prevention of coronary heart disease Endpoints in NIDDM (ASPEN) study.

Cost and compliance with statin therapy

In addition to questioning their universal efficacy, two other reasons as to why adopting a scattergun approach to statin prescribing might not be optimal for clinical practice are first, the cost implication of this wholesale approach and second, and frequently ignored is the issue of non-compliance. Many study authors forget that diabetes is largely an asymptomatic condition and it is unrealistic to expect patients to adhere to their prescriptions on an indefinite basis. Most are already required to take a combination of tablets (often with every meal) for glycaemic control, in addition to combinations of anti-hypertensive agents, and aspirin.

<table>
<thead>
<tr>
<th>Study</th>
<th>No. of subjects</th>
<th>Statin dose</th>
<th>Years of Follow Up</th>
<th>Absolute risk reduction in CVD mortality, %, (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRC/BHF (2003)</td>
<td>5963</td>
<td>Simvastatin 40mg</td>
<td>5</td>
<td>1.5 (0.02)</td>
</tr>
<tr>
<td>CARDS (2003)</td>
<td>2838</td>
<td>Atorvastatin 10 mg</td>
<td>3.9</td>
<td>0.8 (0.06)</td>
</tr>
<tr>
<td>ASCOT (2002)</td>
<td>5032</td>
<td>Atorvastatin 10 mg</td>
<td>3.3</td>
<td>0.55 (n.s.)</td>
</tr>
<tr>
<td>ALLHAT (2002)</td>
<td>3638</td>
<td>Pravastatin 40 mg</td>
<td>6</td>
<td>0.4 (n.s.)</td>
</tr>
<tr>
<td>ASPEN (2006)</td>
<td>2410</td>
<td>Atorvastatin 10mg</td>
<td>4.25</td>
<td>0.0 (n.s.)</td>
</tr>
</tbody>
</table>

Table 1: Absolute risk reductions in CVD mortality from the major large primary prevention trials of statins in patients with diabetes.
MRC/BHF = Medical Research Council/ British Heart Foundation study; CARDS = Collaborative Atorvastatin Risk reduction in Diabetes Study; ASCOT = Anglo-Scandinavian Cardiac Outcomes Trial – Lipid Lowering Arm; ALLHAT = Antihypertensive and Lipid-Lowering treatment to prevent Heart Attack Trial; ASPEN = Atorvastatin Study for Prevention of coronary heart disease Endpoints in NIDDM. n.s. = non-significant
The addition of lifelong statin therapy with their frequent associated adverse effects is unlikely to result in long-term compliance. The recent studies reflected this with less than half of patients still taking the statin treatment after 4 years.

**EBCT Assessment of CVD Risk**

Taking these factors into account, there is a need for better targeting of statin treatment of diabetic patients, by accurately identifying those with a high risk of future CVD. Electron beam CT (EBCT) scanning for coronary artery calcification (CAC) can fulfil these requirements. EBCT is fundamentally different to conventional CT scanners in that the x-rays are generated by a beam of electrons deflected onto fixed tungsten target rings, rather than an x-ray emitting rotating gantry. This enables the images to be obtained 5-10 times faster, which allows for more accurate imaging of the moving heart. This superior speed also results in a very significantly reduced radiation dose, an important consideration when scanning asymptomatic individuals. EBCT scanning is extremely sensitive in detecting calcium, and as deposition of coronary artery calcium only occurs in atherosclerotic arteries, with its extent correlating strongly with the severity of disease, quantification of CAC allows an accurate assessment to be made of an individual's CVD risk. The power and clinical utility of calcium scoring is that it reflects the overall impact of all risk factors, both known and unknown, on the end organ, the arterial wall.

Long-term large follow-up studies of asymptomatic individuals have demonstrated that a high calcium score is associated with up to a 40-fold increased risk of future coronary events, while conversely the American Heart Association states that a zero calcium score is associated with a 0.05% chance of an event. This risk stratification has also been confirmed in numerous studies of patients with diabetes and allows them to be classified into two groups (Fig 1). First, those with a significant CAC score have a worse prognosis than non-diabetic subjects with equivalent calcium scores, and thus require more aggressive preventive therapy. However, conversely approximately 30-50% of diabetic patients have no CAC deposition and have been shown to have the same survival outcome as non-diabetic subjects i.e. an extremely low CVD risk. Given this, it would seem logical to conclude that these patients do not require routine primary preventive statin therapy.

**Conclusions**

There is now compelling evidence to support EBCT coronary artery calcium measurement as an effective means of screening diabetic individuals for CVD. A high score indicates significant atheromatous disease and thus the need for aggressive treatment with a statin that may arrest or even reverse disease progression. Conversely, a zero or low score indicates none or minimal coronary atheroma and thus no need for preventive medication or further testing.

Dr Paul Jenkins MD FRCP  
Reader in Endocrinology, Barts and The London School of Medicine  
Medical Director, The European Scanning Centre  

---

Fig 1: Cox proportional hazards cumulative survival for 10,377 subjects with and without diabetes according to CAC scores: (a) non-diabetic subjects; (b) lower survival in diabetic subjects with equivalent CAC scores; (c) normal survival in diabetic subjects with zero CAC score. Adapted from Raggi et al 2004 J Am Coll Cardiol, 43(9), 1663-1669.
Case Study: A polyp too far?

A 49 year old man attended his GP with an 18 month history of intermittent blood in his stools. He was referred locally to a surgeon who performed a sigmoidoscopy. This revealed mild diverticular disease. There was no family history of colorectal cancer. The surgeon recommended a colonoscopy but the patient wished for a non-invasive virtual CT colonoscopy. This demonstrated a single 1.5 x 2 cm enhancing pedunculated polyp within the mid-sigmoid colon with a long enhancing stalk (Fig 1a and 1b). The patient was subsequently referred for conventional colonoscopic excision. Histology revealed it to be a mildly dysplastic tubular adenoma with complete excision.

Dr Peter Fairclough, Consultant Gastroenterologist, comments:

Any person with unexplained rectal bleeding should be carefully examined and I congratulate this man on persisting until the cause was found and treated. It is not clear why the polyp was not seen on the first examination as it was only at 40cm from the anus. With modern equipment and good endoscopic skills, most patients can have visual colonoscopy comfortably without sedation if they wish, and with almost no risk. Removing polyps at colonoscopy is painless; indeed there is no sensation of the polypectomy. However, as with virtual colonoscopy, it is crucial to select the operator carefully.

Best Caption

Can you think of a caption for the photo below?

It’s just a bit of fun! Entries will be judged on their humour and originality. Please only one entry per person.

Come up with the winning caption and you will win 6 bottles of vintage champagne.

Entries to be submitted by 1st December 2008 via email to: caroline.metcalf@europeanscanning.com

Answer to Ross’s Riddle 3

A surgeon returned from work every day by train, arriving at the station at exactly 7.30 pm. His wife drove to meet him at the station and she took him home in the car. She always drove at a steady 20mph and they always arrived home at the same time each day. One day he caught an earlier train but did not get a chance to tell his wife, so he started to walk home at a steady 3 mph. His wife set out at her usual time and saw him as she was driving to the station. She picked him up and returned home. They reached home 20 minutes earlier than normal. At what time did she pick him up?

They met at 7.20 p.m. In this puzzle, the distances and speeds are irrelevant. The important thing is that the car travels at a steady speed. It takes 20 minutes less time than it normally would. This must mean that the journey was shorter by 10 minutes each way, so they met 10 minutes earlier than usual.

The first correct answer drawn out of the hat was that from Mr Michael Falter, a patient at the ESC.

Many congratulations from everyone at the ESC to our lucky winner!