



My Great Irish Prof. Tim O'Brien

New technology helps doctors and patients

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Prof Tim O'Brien is the Director of the Gait Laboratory at Dublin's Central Remedial Clinic (CRC) in Clontarf. He is one of the country's most respected orthopaedic surgeons and was also Ireland's first ever Professor of Orthopaedics at the Royal College of Surgeons in Ireland (RCSI), a position he held for ten years.

Despite living with motor neurone disease (MND), the effects of which have left him paralysed and reliant on a portable ventilator, Prof O'Brien continues to work at the CRC. He communicates using special software, which enables a sensor to follow his eye movements – allowing him to pick out letters on a specially adapted laptop, which then transmits the words he types into speech.

While MND may rob sufferers of the body, it does not affect the mind. Diagnosed 16 years ago, Prof O'Brien's intellect remains as astute as ever. Indeed, his strength of spirit and determination is clearly evident to anyone who spends time in his company.

In 2005, Prof O'Brien was awarded the prestigious Lifetime Achievement Award at the Irish Journal of Medical Science Doctor Awards for his life-long clinical interest and research achievements in orthopaedics, including research on the development of the immature hip-joint and the

assessment of gait patterns in children.

Originally from Loughrea in Co Galway, Prof O'Brien graduated from NUI Galway in 1975. In 1987, he was appointed as an Orthopaedic Surgeon to Cappagh Orthopaedic Hospital, Temple Street Hospital, the CRC and the Mater Private Hospital. He obtained a consultant post at the Mater in 1989 and two years later, was appointed as the Abraham Colles Professor of Orthopaedic Surgery at the RCSI.

As Ireland's first Professor of Orthopaedic Surgery, Prof O'Brien worked to standardise the education of the orthopaedic profession in Ireland and promote the importance of CME.

"I used the Chair to see that foreign graduates were treated fairly, as well as supporting Irish graduates in achieving international renown," he said.

His research on the immature hip-joint led to a re-classification of deformity in the femur following treatment for congenital dislocation of the hip. He also proposed a new classification for hip dislocation and promoted the concept of developmental dislocation rather than 'missed' congenital dislocation. This new concept has had far-reaching consequences, both for the treatment and understanding of the condition 'congenital' dislocation of the hip.

From 1983 to 1985, Prof O'Brien completed two Fellowship years at the Children's Hospitals in Boston and Toronto, with Prof Robert Salter in Toronto and Prof John Hall in Boston – who he described as 'the greatest paediatric orthopaedic surgeons of the time'.

"After this experience, it was easy for me to expand on their experience by developing a classification of hip dislocation in children and a classification of deformity of the proximal femur after treatment. This allowed us to better understand the problem and how to avoid it in the future.

"I was always open to using new technologies and developed the concept of using intra-operative imaging to assist in the excision of a painful benign tumour called osteoid osteoma. Also, I developed a simple needle-test to assess the integrity of the Achilles tendon."

Prof O'Brien's standing in the research community is such that procedures now even carry his name, including the needle test for the diagnosis of ruptured Achilles tendon (the O'Brien needle-test) and the use of growth disturbance lines as indicators of growth potential of injured physes (O'Brien's lines).

Technology has played a large part in Prof O'Brien's career, from modern imaging techniques to three-dimensional tracking of markers, which enables him to perform gait analysis.

"Such a procedure was almost impossible 20 years ago, but now we have the ability to perform it routinely at the laboratory in the Central Remedial Clinic. Administration in the clinic took a giant step to support the development of the Gait Laboratory at a time when tracking technology was just becoming available.

Introducing new ideas

"In my experience, this attitude of adopting and introducing new ideas and technology is best represented by the attitudes expressed by the administration in Cappagh National Orthopaedic Hospital and the Central Remedial Clinic.

Recently, we introduced a new patient administrative software using Sharepoint that improved our productivity in the Gait Laboratory by about 30 per cent, which is comparable to employing an extra member of staff. All thanks to an innovative approach of the clinic members circumventing the ban on expanding employment in the public sector. Such use of new technology is especially important in these recessionary times."

A leader in its field

In his current role at the CRC, Prof O'Brien continues to use technology to pioneer developments at the Gait Analysis Laboratory, which is now considered a leader in its field. The laboratory also provides the world's first mobile gait-analysis service, and the team now runs a satellite programme in Limerick and Waterford.

"We've developed procedures to distinguish between benign conditions, such as idiopathic toe walking, and neurological disease. We also keep a close eye on patients with cerebral palsy to try and prevent further difficulties such as rupture of the knee extensor muscle that causes deterioration in their walking.

"We can identify the early signs of this and recommend early surgery. It's very pleasing to see how customised intervention can be so important in allowing patients to remain walking," he explained.

Although retired from private practice, Prof O'Brien retains a keen interest in his profession and believes that orthopaedic surgery is one of the specialties that continue to provide good value for money in the Irish

health service.

“In the management of trauma, recent developments allow a complete recovery from major joint and bone injuries that was not possible even a few years ago. Patients return to work with full function, so that every penny spent on orthopaedic surgery is well spent.

“The best example of this is probably the treatment of anterior cruciate ligament injuries of the knee, where an athlete today can expect a full recovery and return to sporting activity.

“Similar advances continue to be made in all other areas of trauma management. It’s rare to see non-union of fractures compared to even a decade ago. I presume that advances in stem cell technology will be utilised by orthopaedic surgery to replace damaged or destroyed bones and joints in the future.”

As well as a renowned expert in the field of orthopaedics, Prof O’Brien enjoys many interests outside the world of medicine, which include writing, music and the study of ancient Ireland’s megalithic sites. He draws most of his inspiration for his many short stories from his childhood in 1950s’ and 1960s’ Ireland.

“Today, this time feels like a different world. Although it’s only 40 years ago, there was a great deal of freedom with unsupervised outdoor play and experiences that aren’t possible today. I’ve a great memory for those times and don’t mind adding in a few extra details to make a story more dramatic. It was a time that no longer exists.

Different times

“We lived in the middle of the time of the disappearance of the ‘great houses’, where people were trying to salvage as much as they could from the abandoned houses. I remember a father of one of my friends spreading a rumour that a certain big house was haunted, so that nobody would be too surprised if they heard noises coming from it as we removed the fireplaces from it under the cover of night. They were certainly different times.”

By his own admission, one of Prof O’Brien’s ‘most enjoyable extra-curricular activities’ was to examine and publish his findings on the great megalithic sites of Newgrange and Loughcrew in Co Meath – of which he is now a respected expert. His co-investigation, examining whether the winter solstice at Newgrange was an accident or design, was published in

the international journal Nature.

“My interest was first sparked by Cairn T in Loughcrew and with the support of the Office of Public Works, we opened up the site and witnessed, for the first time, light shining onto the back stone of the cairn at the equinox. I was then invited to study the phenomenon at Newgrange during the winter solstice. I published my findings and must consider updating this soon.”

On his other great interest – the life and music of Shostakovich – Prof O’Brien said he was amused to read in some biographies of the famous composer that he experienced ‘many of my own difficulties, such as falling unexpectedly and being trapped in his home elevator’.

Finally, as both a practitioner and a patient in Ireland’s health service, Prof O’Brien said that compared to the ‘awfully expensive and unequal system in the US’, Ireland was lucky to have such a great health system. “I know that there are difficulties in providing all treatments on demand, but there’s great use of the services that can be provided.

Portable domiciliary ventilation

“I was very lucky to have strong supporters who were anxious to help and keep me involved as much as I was able, and then it became possible to have portable domiciliary ventilation and when my voice became weaker, to use eye control for typing and speech generation. This has only been possible in this century and the end of the last.”

Approximately one in 50,000 people will develop MND in any one year, and while Prof O’Brien stated that he was not a spokesperson for the condition and did not wish to be defined by it, the strength of character and determination shown by him and the 250 patients in Ireland who suffer from the condition at any one time, is inspirational.