MENTORS IN ORTHOPEDICS

ELEFTHERIOS TSIRIDIS

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SUMMARY

From the discipline of a national champion swimmer to the pinnacle of European orthopedics, Professor Eleftherios Tsiridis's career was forged by what he calls "accident and fortune." In this month's interview, the President of the European Hip Society recounts a journey from Greece to the UK and US, defined by pivotal mentors and a relentless scientific curiosity. He shares the systematic approach behind his innovations, from the STAR approach to the REAL classification, and his vision for training the next generation of leaders.

Professor Eleftherios Tsiridis's career is a testament to a relentless pursuit of excellence across borders. From his medical studies in Athens to extensive training in the UK and a fellowship in the USA, he has cultivated a rich and diverse expertise in orthopedic surgery. Now Chairman of a major academic department at the PGH University Hospital of Thessaloniki and President of the European Hip Society, he shares the pivotal moments, key mentors, and innovative philosophies that have defined his remarkable journey.

Could you start by telling us about your origins and what first led you to a career in medicine?

> I am Greek, born and raised in a town in the north of Greece to a non-medical family; I didn't have any relatives in medicine. However, since I was introduced to medicine, it has become a family affair: my brother is an anesthesiologist, my wife is a psychiatrist, and my three children are now moving into medicine as well.

> After high school, I attended Athens Medical School, the largest and most prestigious school in Greece. I studied there for six years. Following that, as is routine for Greek citizens, I had to complete my military service, where I served for two years in the special forces paratroopers of Greece and practiced a bit as a physician. It was after this service that I decided to move to the UK for my specialist training, and that's how the whole journey started.

You hadn't chosen your specialty at that point. How did you decide on orthopedic surgery?

> To tell you the truth, it was a little bit accidental. I knew I wanted to do something surgical. This is quite common for sports-oriented people; they want to do something more active, or at least they think it is. I was a swimmer—in fact, a national champion in breaststroke—and I also played on a very good water polo team right up until the end of my medical studies. So, I was a good swimmer

> and water polo player, and a good student at the same time. The combination of competition, discipline, and sports felt right.

> However, when I was in the army, there was no available slot in general surgery, so they assigned me to orthopedics for a few months. I came across sports and army injuries and found it all quite interesting. My first mentor, who saw my interest, told me orthopedics was going to be a very technical sub-specialty of surgery and that it would be a very nice idea to move into it. In those days, many things were treated conservatively, but the forthcoming technological advancements were obvious. I remember seeing ACL reconstructions, knee replacements, and hip replacements, and it was all quite exciting. So, my decision was a little bit of an accident and a little bit of fortune.

> I have also been fortunate enough to come from a family who supported all my decisions. I'm really grateful to my parents for supporting me all the way through my studies and thereafter.

With your mind set on orthopedics, you went to the UK for training. How did you decide where to go, and what were your initial experiences?

> That was also quite accidental. The jobs were advertised in the British Medical Journal (BMJ), and I started looking in late June, which was the end of a six-month cycle. There were very few jobs advertised, maybe only three or four. I just sent my CV with an application form for a very junior training post—a Senior House Officer (SHO) job, which meant doing no surgery, just serving the department, taking medical histories, and looking after patients. I sent three applications, got two interviews, and landed my first job.

> I moved immediately. I was very young and adventurous. I remember taking a very small suitcase and telling my parents, "Okay, I'm going and I'll see what happens." My initial plan was just to stay for a few years and then return to Greece. At that time, there was a waiting period of about three years to get into a specialty in Greece, and I thought that would be a waste of time. My first job was in the Norwich area, at James Paget Hospital in Great Yarmouth. That's where I had my first reality check: I was a Greek guy in the UK system.

What did that "reality check" entail?

> My first consultant there, who became my second mentor, told me, "Look, if you want to stay in England and progress, you better follow what we do here." That meant going through very difficult exams for the Royal College of Surgeons. It meant working in the morning and studying in the evening, with no breaks. I believe that for those three or four years, I didn't go out even for a coffee. It was a lot of sacrifice, but I had no other choice if I wanted to take my training seriously. Eventually, I was awarded the Fellowship of the Royal College of Surgeons (FRCS) from Edinburgh.

That fellowship was a major step, but it wasn't the end of the challenges, was it?

> No, that led to my second reality check. I had the ambition to move from the periphery of England to a bigger training center like London, which was extremely competitive. I quickly realized the fellowship wasn't enough; I needed a higher degree, like a master's, and some publications. So, I registered at the Royal National Orthopaedic Hospital, Stanmore, for a master's degree under the supervision of Professor Bentley, who became my third mentor. Through his help, I got into the UCL-affiliated hospitals for my training. I spent most of my time at Whittington Hospital in North London, where I met my fourth mentor, Sarah Muirhead-Allwood.

What was that experience working with Sarah Muirhead-Allwood like?

> It was incredible. I was meant to work for her for one year as a senior registrar, but she asked me to stay for a second year. She is an excellent surgeon—meticulous, conscientious, focused, and quick. I learned from her how to think, how to make one right decision instead of having two or three confusing options. There was always a plan when we went to the operating theatre; there was no "going and see," there was "going and do." She was innovative. With her, we did resurfacing arthroplasty, small incision arthroplasty, and even the two-incision anterior approach for the hip.

> The greatest compliment I ever had from a senior surgeon came from her. She put up an X-ray of two hips we had operated on and said, "Which one is mine and which one is yours?" She couldn't tell the difference. Very soon after, at the age of 35, she insisted I take my first locum consultant job at the Whittington, even before my planned fellowship in the United States. They trusted me at this early age with a very senior post.

After that intense UK training, you pursued a fellowship in the United States. What did that year in Boston bring you?

> My wife, Eva, who was a registrar in psychiatry in London, and I decided to go to the States together. I got a job at Boston University Medical Center with Thomas Einhorn, a great researcher and arthroplasty surgeon, and she got one at Harvard Medical School. My daughter, Thea, was born there halfway through our fellowship.

> Professionally, it was a wonderful year of fellowship training and high-quality research. It was there that I put together some of the work for my PhD, which I had started at King's College, London. The topic was enhancing bone healing in critical bone defects. I conducted a study in rabbits where we created critical bone defects and treated them with demineralized bone matrix, BMP7, and systematic injections of parathyroid hormone. The paper I published from that time, in the Journal of Orthopaedic Research, was one of the first in the literature to prove that parathyroid hormone (PTH) has an anabolic effect on bone healing in these defects.

You returned from the US to another prestigious fellowship in Exeter and then secured your first academic post. What ultimately made you decide to return to Greece?

> After Boston, I was accepted as an Exeter fellow for the Ling Fellowship, returning to a center I already knew. In fact, to connect the dots between my time in the Norwich area and London, I had previously worked for one year in Exeter as a junior (SHO). I returned there as a senior fellow at that time, working with what I consider my fifth group of great mentors: Graham Gie, John Timperley, and Professor Ling. The Exeter Fellowship is unique because the fellows are very senior, so you operate from the very first day.

> Having all of this on my CV—my Master's from UCL, my PhD from King's, two fellowships—I received my first offer for an academic job at Leeds University as a senior lecturer, equivalent to an associate professor. I served there for six years, and my joint reconstruction learning curve happened there. It's a major trauma center, so I did a lot of pelvic and acetabular reconstructions and became very familiar with that work. My son Emilios and my second daughter Joanna was also born when I was in Leeds. So, I had a family, a busy practice, and a really good position.

> Then, people from Greece approached me. They offered me an associate professor job in Thessaloniki, with the prospect of soon becoming a full professor and chairman of the

department. I was shocked. After nearly 20 years abroad, the country made a call to come back. I took the chance and applied. It wasn't easy, as some considered me an outsider, but others wanted to renew the university and gave me the opportunity. In 2013, we decided with Eva to return home. Four years later, I became the chair of the department.

As Chairman in Thessaloniki, could you describe your department's structure and your main initiatives?

Running a department in Greece requires you to do almost everything—clinical practice, research, and administration. My days are busy, but I have excellent personnel: 10 specialists, 12 trainees, and two arthroplasty fellows under my care annually. Upon my arrival, I immediately structured my vision around what I call 'the six pillars of my chair':

1. CORE (Center of Orthopedic Research), our research hub.
2. ART (Arthroplasty Registry of Thessaloniki), the only official arthroplasty registry in Greece.
3. The MAST course, an annual arthroplasty course now in its 12th consecutive year.
4. The Adult Hip-Master Case Series & Techniques A Springer 1,000-page book I edited on practical techniques in hip surgery.
5. OramaVR.SA a star up spin off from AUTH (Aristotle University Thessaloniki) the first med-tech company developing surgical models in a virtual environment for training
6. ICAROS the International Center for Advanced & Robotic Orthopaedic Surgery. A center of excellence for joint reconstruction.

My week is structured: Monday and Friday are for management and clinics. Tuesday, Wednesday, and Thursday are for operating. I perform five or six arthroplasty cases a day, including about 70-80 revision surgeries and 30-35 pelvic and acetabular fracture cases per year. This trauma workload is significant, as my unit is on call every five days for the region of Northern Greece, which has a catchment area of one and a half million people. We publish, on average, 10 to 15 papers a year. I have also served as President of the Hellenic Hip and Knee Society as well President of the Hellenic Associations of Orthopaedic Surgery and Traumatology which is the top professional Orthopaedic organization in Greece.

Let’s discuss surgical technique. You have championed the piriformis-sparing STAR approach. What is your view on the hip surgical approach?

I was trained in the UK, so I was a posterior-approach surgeon. Then, the anterior approach came into play. I found it intriguing for patient expectations, but realized it was occasionaly difficult. I was trained to operate quickly and with good vision, and I found that with the anterior approach, I sometimes had to sacrifice structures I meant to preserve just to get exposure. Also, all my revision surgeries were done from a posterior approach, so I decided on "one approach for all."

However, my scientific curiosity led me to think about what the anterior approaches were preserving. This started my work on the STAR (Superior Transverse Atraumatic Reconstruction) approach. I studied the technique for about five years, collecting data on 200 patients before publishing my first paper. This grabbed the attention of HSS in New York, and we started working together. This initiative led to the establishment of the STAR Foundation in New York, at the Hospital for Special Surgery (HSS). A website has been created for the foundation, which has attracted the participation of numerous people from around the world. We confirmed that if you preserve the piriformis muscle and its vasculature, you can operate through a narrow window straightforwardly, without using any adjunct like a traction table, a spatial table, or radiology. This

> advantage is crucial in complex primary surgeries, for example, in dysplasia (DDH), where things are very tight, very narrow, and you cannot afford to not see the socket and the proximal femur well. We believe this provides the same functional and stability benefits as the anterior approach without its potential downsides. I don't claim to have invented it, but I gave it a name, studied it systematically, and shared the publications widely, staying neutral from industry.

You've applied a similar systematic approach to robotic technology for the knee, creating the REAL classification. Can you explain that?

> When I started using a robotic system, I wanted to understand the new information it was giving me. It wasn't just about accuracy; it was telling me about the laxity of the knee. This led me to develop the REAL (Robotic Evaluation of Articular Laxity) classification. It's not rocket science; we simply use the robotic system to record laxity and then applied statistics to a large group of individuals. We found that the data clustered into nine distinct phenotypes. As with my other work, this involved years of study before publishing, and we included the validation of the classification in the very first publication to ensure it was meaningful.

Having trained in Exeter, what is your current philosophy on using cement for femoral stems?

> I am a selective cementer. If I see an osteoporotic patient or someone who cannot support an uncemented stem, I will cement using a pristine third-generation technique. The Exeter stem is a wonderful implant. My practice used to be 60% uncemented and 40% cemented, but it has now shifted to about 80-20. However, cement still has a crucial place, and I'd like to address three myths about it:
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> 1. The myth of difficult revision: This is wrong. A tapered, polished cemented stem can often be removed more easily than a well-integrated uncemented stem. Cement-in-cement revision is also very straightforward.
> 2. The myth of embolic events: This is an unexplained phenomenon, but if you prepare the canal well and don't pressurize things carelessly, there is likely no major fear.
> 3. The myth that cement is not for young people: This is incorrect, especially in complex cases like dysplasia. When dealing with a tiny canal, short offset, and extensive anteversion, commercial uncemented stems are often unsuitable. A carefully templated, smaller cemented stem can save the day.
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> For femoral revision surgery, however, I have moved completely away from cemented stems.

Beyond your clinical work, you've dedicated significant time to the European Hip Society (EHS). Could you share your journey with the society?

> I was elected Secretary General about ten years ago. At that time, the EHS was a powerful society but limited in numbers, almost like a closed club. Having just returned from a travelling fellowship in the US, I felt we needed to expand and open the society to more European and international members. It faced some resistance, but we succeeded in inviting big names from the US to become members, which gave our society great exposure. We also structured the society by introducing newsletters and travelling fellowships.
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> Now, I am happy to share a legacy I hope to leave behind: a new senior travelling fellowship in partnership with the Japanese Arthroplasty Society. It will be a two-week exchange—one year in

> Europe, one year in Japan—aimed at educating senior surgeons to create the next generation of leaders in hip surgery.

The culmination of your presidency is the upcoming EHS meeting in Thessaloniki. What can attendees expect?

> It is the result of a massive collective effort from the entire society. We have a packed program with 160 senior speakers from all over the world. We will be honoring three legends: Sarah Muirhead-Allwood, Professor Ganz, and Professor Dretakis, one of the founders of the EHS. We will also have a special lecture from Hiroshi Fujita about Hiroshima, Nagasaki, and the nuclear threat. The program is structured across five rooms and is color-coded by topic so people can easily find what interests them. The first day focuses on primary and preservation, while the second day is more about revision.

As your EHS presidency concludes, what's next for you?

> I will remain active in the EHS as past-president, and my ambition is to oversee the new Europe-Japan fellowship. I am also keen to create an initiative within the European hip and knee societies to analyze our collective robotic data, incorporating developments in artificial intelligence. The potential of new treatments for periprosthetic joint infections, like phages, is also very exciting. A major goal is to foster better international data sharing. On a personal level, I will continue running my department and, most importantly, watch my family grow.

Your profession is very demanding. How do you balance the toughness required of a surgeon with the need to be human?

> Our profession is very tough; we make very difficult, very crucial decisions every day, and that hardens our lives. We need to be relatively hard to face the realities, but at the same time, we need to be human beings and grow our families and friendships. At the end of the day, life is not very long, and we have to serve society and our family. That softens our thinking and makes us feel more humane.

Finally, what advice would you give to a young doctor who aspires to become a great orthopedic surgeon?

> I will say something that is not mine, but from the great Greek writer Nikos Kazantzakis. He said, "Reach what you cannot."

> So, I would advise them to dream and to be optimistic. Never give up. Whatever goes wrong doesn't really matter; the next morning, the next month will be different, and another opportunity will come. Medicine is an extension of human life; it's a social profession. We need to be devoted and to constantly strive to reach where we think we cannot.