MENTORS IN ORTHOPEDICS

THEOFILOS KARACHALIOS

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SUMMARY

Professor Theofilos Karachalios transitioned from serving as a submarine medical officer to presiding over EFORT. His career, centered on establishing the Larissa orthopedic department, reflects a consistent focus on biomechanical precision and clinical pragmatism. A researcher and marathon runner, he currently investigates functional alignment in robotic arthroplasty, advocating for evidence over technological enthusiasm. This interview examines his trajectory from pelvic trauma surgery to academic leadership, highlighting his commitment to harmonizing surgical standards across the European continent.

From submarine medical officer to EFORT President, Theofilos Karachalios has carved a remarkable path in orthopaedics. This Greek surgeon, who helped establish Larissa's orthopaedic department from scratch, brings a refreshing blend of hands-on practicality and visionary leadership. A marathon runner turned researcher, he champions evidence-based adoption of surgical robotics whilst warning against premature technological enthusiasm. His commitment to European collaboration reflects a deep belief in unified standards and shared excellence.

Where are you from and what led you to specialize in Orthopaedics?

> I'm originally from the Peloponnese, an area in the southern part of Greece. I earned my medical degree from the University of Athens. The idea to pursue medicine came quite early, although, like many high school students, I didn't fully understand the consequences of this decision back then. After medical school, I specialized in orthopaedics at the University Orthopaedic Department at KAT Hospital in Athens. My training included a mandatory year of national service, which I spent as medical officer on a submarine. I chose Orthopaedics because I consider myself a practical person. Whether my personality drew me to the field or if I adapted to its demands is an interesting question, but I'm very happy with the choice. Orthopaedics blends basic and clinical science with hands-on skills, and there's great satisfaction in solving most patients' problems relatively directly compared to other specialties.

You pursued further training in the UK. Was this driven by an ambition for an academic career, or were there other reasons?

> The main reason for going to the UK was to enhance my knowledge and skills. By that time, I was already developing an interest in adult reconstructive surgery. Bristol was a prominent center for hip and knee surgery in the UK at that period. I spent two years there, progressing from registrar to senior registrar. At the same time, I obtained a Masters degree in Biomechanics and Bioengineering from Strathclyde University in Scotland. Upon returning to Greece, I secured a position as consultant Orthopaedic surgeon at the same hospital in Athens where I had initially trained.

During your training in Greece and the UK, were there any particular surgeons who acted as mentors or significantly influenced your path?

> Absolutely. Professor George Hartofilakidis, Kostantinos Stamos in Athens and Professor Louis Solomon in Bristol were inspirational in hip surgery. Both John Newman and Chris Akroyd in Bristol helped me develop my path in hip and knee surgery. I also had the opportunity to work with Roger Atkins in Bristol, who specialized in advanced trauma and fracture reconstruction, particularly using external frames. This period solidified my interest in adult reconstruction, and my work increasingly involved pelvic and acetabular trauma. My training also included time in the United States, visiting centers in Pittsburgh, Chicago and other locations.

How did your academic career begin after returning to Greece?

> After getting a consultant post back in Greece, I was definitely leaning towards an academic path and looking for the right opportunity. A new university, the University of Thessalia (established in ‘85), was creating a new Medical Faculty in Larissa within a brand-new academic hospital. When they advertised positions, I applied and was successful. I had the privilege of starting this new Orthopaedic department alongside Professor K. Malizos.

So you were involved right from the very beginning of the Orthopaedic department in Larissa?

> Yes, exactly. I was 39 at the time, which felt like the perfect age for such an undertaking. We were literally the first ones to open the doors at the new hospital. There’s a distinct advantage to starting fresh in a new facility without inheriting potentially outdated practices or «bad habits».

How did you structure the department initially? What areas does it specialize in?

> University departments in Greece typically provide general orthopaedic services while also housing specialized sub-units. From the outset in Larissa, we aimed for broad coverage. Our department handles adult reconstruction, trauma (including late fracture reconstruction), orthopaedic oncology, pediatric orthopaedics, sports injuries, and upper and lower limb surgery, incorporating microsurgical techniques. We also perform necessary plastic reconstructive procedures related to orthopaedic cases, such as those for complex fractures – focusing on reconstruction, not cosmetics. Due to operating room constraints, we do not currently perform spine surgery. However, we’ve become a significant referral center for complex cases like orthopaedic infections, revision surgeries, and sports injuries. The department currently comprises nine faculty members and 14 residents.

You mentioned handling pelvic trauma. Does your department function as a level one trauma center?

> The Hospital is a level one trauma center. We used to handle a high volume of pelvic and acetabular trauma, enough to be considered a highly specialized center for those injuries. However, improvements in road safety and vehicle technology in Greece have thankfully led to a decrease in such severe trauma cases. Consequently, our volume has dropped – we now see maybe 30-40 cases per year – putting us on the borderline of retaining that specific high-specialization status. We still possess the expertise, but the frequency isn't what it once was. Interestingly, we now frequently manage the late consequences of these injuries, such as post-traumatic arthritis with significant acetabular defects, often complicated by previous failed or inadequate surgeries that require complex reconstructions.

Given your experience with both complex trauma and arthroplasty, do you believe it's important for surgeons training in hip replacement to also gain experience in pelvic trauma?

> I lean slightly against very early sub-specialization. My belief is that a well-rounded Prthopaedic surgeon should first establish a strong general foundation, gaining a comprehensive understanding of the field and mastering fundamental skills. Sub-specialty skills should be built upon that base, especially for those aspiring to leadership roles where broad knowledge is crucial. While it's true that no single surgeon can master every aspect of modern Orthopaedics, a thorough grounding is vital. In terms of sub-specialty focus, I tend to favour a broader scope rather than extreme specialization like being solely a 'knee surgeon'. Perhaps covering a range from sports injuries to complex revisions within that joint is better. Personally, my practice encompasses hips, knees, shoulders (when needed), related oncology cases, and fracture reconstruction. While I no longer perform primary arthroscopic procedures for cartilage issues, I remain fully capable of assisting in challenging cases or performing revisions.

You're currently serving as the Dean of the University. How do you balance this significant administrative responsibility with your clinical practice and departmental leadership?

> Yes, being Dean is an administrative position, distinct from my role as Chairman of the Orthopaedic Department. While university administration can be very demanding, sometimes a full-time job in itself, our university here is structured very efficiently. We have effective committees and strong secretarial support, which means the administrative workload doesn't consume an excessive amount of my week. It's manageable as a part-time commitment alongside my other responsibilities.

Could you describe the Orthopaedic training pathway for young surgeons in Greece?

> Orthopaedic training in Greece follows European standards in terms of duration and curriculum content. One significant challenge we face is the resident allocation system; residents are assigned based on a national waiting list, meaning individual departments like ours don't get to select their trainees. This can make it difficult to manage situations in which a trainee might not be progressing as expected. Nevertheless, the training program includes standard European requirements like logbooks and final examinations. We're also seeing a notable trend where Greek trainees are increasingly opting to take the European Board of Orthopaedics and Traumatology (EBOT) examination. In fact, the Greek Orthopaedic Association is planning to host the EBOT exam in Greece, administered in Greek, starting possibly next year or the year after. This move aligns with a broader European trend of integrating the EBOT standards.

Your mention of European standards brings up the topic of collaboration. How important do you view European integration and standardization in the field of Orthopaedics?

> I am very much pro-European. While there's often talk about bureaucracy in Brussels, I've personally witnessed the clear benefits of European collaboration, particularly for Greece. If we truly support the principle of free movement, allowing young surgeons to train and work across different European countries, then standardizing the level of education and qualification, it is not just beneficial, it's essential. There's no way around it. This naturally underscores the critical role of organizations like EFORT (European Federation of National Associations of Orthopaedics and Traumatology) in facilitating this harmonization.

Beyond EFORT, are there other scientific societies, whether national or international, that have been particularly important in your career?

> Yes, I had the honour of chairing the Greek Orthopaedic Association in 2015 and EEMMO in 2012. I also dedicated nearly a decade to serving as the treasurer for the European Hip Society. Time constraints prevented me from joining more specialized groups like EKA or EKS when they were formed, although I've always closely followed their scientific meetings and activities. My involvement with EFORT came later, stemming from my pro-European convictions and coinciding with a period when EFORT needed to strengthen its financial management. There are specific prerequisites to becoming an EFORT board member before the elections. My prior financial stewardship experience with the European Hip Society and the Greek Orthopaedic Association likely contributed to my election first as EFORT's treasurer, and subsequently progressing through the leadership line to President.

Many people are familiar with the annual EFORT congress and the presidency, but could you shed some light on the broader structure and activities of EFORT?

> It is vital to understand that EFORT is far more than just an annual meeting. At its core, EFORT is a federation – an umbrella organization that brings together National Orthopaedic Associations from across Europe. It currently represents 41 National Societies, 12 associate Scientific Societies, and over 25 Specialist Societies. As this umbrella body, EFORT pursues its mission through several strategic pillars. Education is paramount, extending beyond the congress to include a comprehensive e-learning platform, the EFORT Open Reviews journal, the influential White Book on musculoskeletal health, historical textbooks, and various fellowship programs. The EFORT FORA initiative also brings educational symposia to the annual meetings of member national societies. Another crucial pillar is the EU Affairs Committee, which actively engages with European institutions to advocate for the Orthopaedic profession and address relevant policy issues. This involves participating in bodies like the Biomet Alliance, collaborating with UEMS on the EBOT exam, and contributing expertise to the European Medicines Agency's panels, such as those concerning medical devices and implants. EFORT has also been involved in research projects like Core-MD (focused on evaluating high-risk implants) and safety initiatives like the IPSI (Implant and Patient Safety Initiative – fostering safe clinical practice). A major output was the publication of the White Book in 2022, detailing the current landscape and future challenges in musculoskeletal care across Europe. Research, Innovation and Networking are other important areas, though recent financial pressures have forced us to temporarily scale back some activities in these domains to prioritize education and EU affairs, as these projects require significant funding. Structurally, EFORT is governed by an Executive Board and Executive Committee and

supported by numerous committees (Scientific, Educational, Ethical, etc.) that generate guidelines, educational materials, and recommendations.

Given the diversity of cultures and potential influence imbalances among European nations, how does EFORT ensure fair representation and balance within the organization?

This hasn't proven to be a significant issue for EFORT. The prevailing culture within the organization has consistently been one of tolerance and flexibility. Over the years, we've successfully navigated and balanced various national perspectives and tendencies. For example, we were proud to have Prof. Li Felländer-Tsai from Sweden serve as our first female president recently. Furthermore, we ensure our committees include a strong representation of highly qualified female colleagues. EFORT's constitution itself mandates a geographical balance, ensuring representation from Northern, Southern, Western, and Eastern Europe. We consciously strive to maintain this equilibrium across all aspects of the organization, and I don't believe we've faced major problems related to national dominance.

What would you identify as the primary challenges facing EFORT at the moment?

Undoubtedly, the main challenge currently is financial sustainability. As a federation, EFORT doesn't collect fees from individual surgeons. Instead, its core funding comes from membership dues paid by the national societies, calculated based on their member count. These dues are quite modest – around €6 per surgeon – meaning the total contribution from national societies is relatively low compared to the scope of EFORT's activities. Historically, the annual congress was the main source of revenue. However, several factors have impacted this model recently. The COVID-19 pandemic forced two congresses into a virtual format, significantly reducing income. We've also seen a noticeable decline in sponsorship from the pharma and implant industry. Many large implant and pharmaceutical companies are shifting their focus, preferring to sponsor their own smaller, more targeted meetings rather than large, multi-topic congresses like EFORT's. Compounding this, the pandemic reduced overall travel and participation, while the rise of online learning platforms has created alternatives to in-person attendance – a trend observed globally, even affecting major meetings like the AAOS.

These combined pressures have led to financial strain. To address this, we recently implemented a significant organizational restructuring aimed at reducing fixed operating costs, thereby allowing us to preserve essential activities, particularly in education and EU affairs. We are optimistic that the upcoming congress in Lyon will be a positive step towards financial recovery, and I strongly encourage colleagues to attend and support EFORT.

How is EFORT adapting its congress to stay relevant and attractive, especially for younger generations of surgeons?

We absolutely recognize the need to evolve the congress format. While we implement incremental changes each year, there's a growing feeling that a more substantial modernization is needed to keep the congress appealing and dynamic. We're actively working on this. It's encouraging to see that younger surgeons and residents find significant value in EFORT. The congress provides an important platform for them to present their early research, be it MD or PhD work, or basic science findings. We actively encourage this through various awards for best papers, research, and even posters presented during dedicated poster walks. Engaging industry support specifically for this demographic can be challenging, however. Beyond the main congress, we are exploring

possibilities for hosting shorter, focused EFORT educational events in regions outside Europe, potentially bringing the high-level scientific content (plenaries, symposia, debates) to countries that have expressed interest. A key strategy for the Lyon congress, and likely moving forward, is to significantly enhance the involvement of the host country's Orthopaedic society. This year, for the first time, SOFCOT has been given responsibility for organizing an entire session dedicated to THA instability. Moreover, approximately 20% of the invited speakers are from France, a remarkably high proportion reflecting this new emphasis on local collaboration.

We find that national societies are generally very enthusiastic about contributing to the EFORT congress when it's hosted in their country, but they often benefit from clear guidance on how best to engage. The collaboration with the French societies for Lyon has been excellent. They were very receptive, and despite potential language considerations, everything seems to have worked out smoothly. I must specifically commend Dr. Gilles Pasquier, who serves as EFORT's treasurer. His efforts and advocacy were instrumental in making this enhanced level of French involvement a reality.

This year's main congress theme is «Modern Technologies in Orthopaedics: Challenging Ethics and Outcomes.» What's the thinking behind this topic?

Orthopaedics and technology are inextricably linked, and technological progress is relentless. However, there's a valid concern that new technologies might sometimes be adopted into clinical practice faster than the evidence fully supports, occasionally fuelled by marketing that presents them as definitive solutions. At the same time, dedicated research centers across Europe are rigorously investigating the true clinical impact of these innovations. The congress aims to explore this dynamic across various areas: AI, augmented reality, navigation in trauma, and prominently, robotics in hip and knee replacement. We have a comprehensive review course scheduled for Friday, where I'll provide an overview of where we stand with these technologies, particularly focusing on robotics in TKA and the critical questions emerging from centers using these systems extensively.

We intend to present data, including published studies, highlighting that patient perceptions shaped by media coverage often doesn't align with current expert consensus or clinical reality. Since patient expectations are so closely tied to satisfaction, it's crucial to have these evidence-based discussions to bridge the gap between the hype and the actual benefits and limitations of these new technologies.

You hinted that robotics might currently offer more established benefits in knee replacement compared to hip replacement. Can you expand on this perspective?

My observation is that robotic systems for TKA are perhaps developmentally a few steps ahead of those for THA. A significant impetus for TKA robotics has been the persistent issue of patient dissatisfaction – the notable percentage (likely over 10%, perhaps less than the sometimes-cited 20%) who remain unhappy even when their knee replacement appears to be objectively successful. In contrast, the rate of dissatisfaction after primary THA is considerably lower, generally under 4%. For THA, I believe the next leap requires more sophisticated robotic systems that can effectively integrate complex anatomical relationships, specifically spino-pelvic alignment. Many current THA robotic systems (with exceptions like Stryker's Mako perhaps) primarily focus on achieving greater precision in placing components within target zones, rather than fully addressing those complex individual alignment parameters.

> In TKA, the conversation has evolved beyond simply achieving highly accurate bone cuts and component positioning. We now know that this level of accuracy doesn't automatically translate into superior long-term function, patient-reported outcomes, or pain relief, although some temporary early advantages might exist. Patients often misunderstand the technology, sometimes believing the robot performs the surgery entirely on its own. It's increasingly evident that improving TKA outcomes requires moving beyond basic alignment to accurately restoring the patient's individual knee laxity patterns throughout the range of motion. Furthermore, it's likely that not all implant designs are equally suitable for facilitating these highly individualized surgical approaches.

Do you believe that the true potential of surgical robotics lies in combining advanced, patient-specific imaging with real-time, intra-operative assessment of dynamic factors like ligament laxity, moving beyond its function as simply a precise cutting tool?

> Putting it somewhat starkly, robotic systems that don't utilize pre-operative imaging are essentially sophisticated navigation devices. To achieve truly personalized surgery, you need 3D data to plan and execute adjustments in all anatomical planes. This inherently requires detailed pre-operative modelling. The question then becomes, what needs to be modelled? Just the knee, or the entire lower limb including hip and ankle for optimal TKA planning?

> Reproducing the patient's unique alignment is the first step. But we must also consider whether there are safe or practical limits to this reproduction. Pursuing unrestricted kinematic alignment might be one path, while respecting certain boundaries might lead to a 'functional alignment' approach. The second crucial element is soft tissue balancing. Does personalized surgery imply restoring the patient's native asymmetric laxity, or should we aim for symmetrical gaps? And how much residual laxity is optimal? Thirdly, we must ask if current implant designs are universally compatible with these personalized strategies.

> So, we have anatomy, alignment, laxities, and implants. The final, critical variable is the patient. Is this complex, data-intensive approach truly necessary and/or beneficial for every patient undergoing joint replacement? My prediction is that future research will likely identify a specific subgroup – perhaps 20-30% of patients, typically younger, more active individuals with high functional demands – who stand to benefit most from these advanced techniques. For many older patients with moderate activity levels, the debate continues as to whether achieving precise mechanical alignment or using specific implant types offers substantial advantages over well-executed conventional techniques. These are precisely the questions that dedicated research centers must rigorously investigate.

Given the emphasis on evidence, how is your own research group evaluating these newer robotic and alignment philosophies?

> You're right, robust evidence is paramount, particularly when navigating the enthusiasm and media attention surrounding new technologies. Even strong believers need objective data. In our ongoing studies, we're comparing functional alignment against conventional TKA, and we're initiating a trial comparing robotic functional alignment versus robotic mechanical alignment (using the Skywalker system). Our research platform integrates data on alignment, laxity, implant choice, and patient factors. Our primary outcome measure is how closely the post-operative knee kinematics replicate normal knee motion. My underlying hypothesis is that much of the residual dissatisfaction after TKA, even in stable, pain-free knees, relates to altered proprioception

> stemming from unnatural kinematics – the knee simply doesn't 'feel' right. While we collect standard metrics like PROMs and range of motion, our core focus is comparing the kinematic patterns achieved against normal benchmarks and ensuring we avoid patterns known to cause issues like instability.

How do you measure or assess these kinematic patterns in your research participants? Do you use methods like gait analysis?

> While gait analysis provides valuable data, it's primarily a laboratory-based tool and difficult to implement for large patient cohorts. Instead, we utilize a model-based RSA (Radiostereometric Analysis) system. We have patients perform standardized, functional movements like lunges and step-ups, which allows us to collect precise kinematic data on larger groups. Analyzing the complex RSA data is challenging, and this is an area in which advanced computational tools, potentially including AI, could be beneficial in the future. However, we are confident that this RSA methodology allows us to demonstrate the achievement of near-normal kinematics.

Speaking of AI, you've published work on predictive modelling for hip surgery outcomes. Do you foresee AI playing a significant role in developing similar predictive models for knee surgery or optimizing robotic procedures?

> Yes, I believe AI holds significant potential in this area. In conjunction with the robotic system (Skywalker), a network has been established aimed at collecting the large datasets needed for developing AI-driven models. However, it's important to maintain perspective – AI isn't a magical solution. Its effectiveness is highly dependent on the quality, accuracy, and consistency of the input data. Dealing with heterogeneous data from multiple sources remains a challenge. Nonetheless, for analyzing vast amounts of complex data with numerous variables, AI techniques are likely the most promising path forward. This type of work necessitates collaborative efforts among research groups that share methodologies and can pool high-quality, standardized data. Data privacy and protection regulations present hurdles, but these are gradually being addressed. Broadly speaking, AI is undoubtedly a technology of the future. However, we must proceed thoughtfully. Consider the early days of the World Wide Web: immense potential, but the initial lack of built-in safety and regulatory frameworks led to significant problems. Encouragingly, the EU has taken a proactive approach to AI regulation, with other regions like North America following. Challenges remain, particularly regarding global players who may not prioritize the same regulatory controls. We're already encountering issues in scientific publishing with articles that appear to be AI-generated, though reliably identifying them remains difficult.

In your experience as an editor, do these suspected AI-generated submissions seem to originate more frequently from specific regions?

> Our experience suggests a higher volume of such papers seems to come from Far Eastern countries, where there appears to be a push to generate vast quantities of publications. This trend certainly makes assessing the reliability of research from those sources more challenging.

You've served as Editor-in-Chief for Hip International for a considerable time – about eight years. What does this role entail for you?

> That's correct, it's been nearly eight years. The primary reason I enjoy it is the constant learning opportunity it provides. My role isn't to personally review manuscripts. We handle the initial screening and triage of submissions, deciding which papers proceed to peer review, and we

> oversee the final editing process for accepted articles. It typically requires about four hours of my time each week. It's an excellent way to stay abreast of the latest developments across the entire spectrum of hip surgery.

Shifting back to clinical topics in hip surgery – besides robotics, what do you consider the most significant current challenges or «hot topics,» especially given the high success rates of primary hip replacement?

> Firstly, regarding hip preservation surgery, I anticipate its application will become more refined and targeted as we solidify the precise indications, moving past the initial wave of enthusiasm. In terms of implants for hip replacement, major design innovations seem to have plateaued for now; achieving reliable fixation is generally manageable with current techniques and implants. The most pressing challenge, in my view, lies in revision surgery, specifically addressing complex problems on the acetabular (socket) side. We are increasingly encountering severe acetabular bone defects that defy existing classification systems – essentially, very large structural deficiencies. This has spurred the development and use of custom-made, patient-specific acetabular components. However, these custom solutions raise several important questions: their high cost is a significant factor; ensuring the accuracy of their manufacture and fit based on imaging is critical; understanding the long-term biological integration at the implant-bone interface is key (modern designs often incorporate porous surfaces for bone ingrowth, unlike older models); and we need established techniques for removing these complex implants, which often feature large fixation pegs, should revision become necessary. While custom implants offer valuable solutions for devastating bone loss, these associated issues, including the substantial cost burden on healthcare systems, need careful consideration and further research. This area of complex acetabular reconstruction is where I expect significant focus and innovation in the coming years.

Regarding the upcoming EFORT congress in Lyon, what are your expectations for delegate numbers?

> Our goal is to reach 3,000 or more attendees. As of now, about a month out, we are tracking slightly below that target. However, it's quite common for a significant number of registrations to occur closer to the date or even on-site, particularly after early registration deadlines have passed. We did receive a very large volume of abstract submissions, which reflects strong interest but also represents a substantial workload for the scientific committee to review and select.

You mentioned attending the very first EFORT congress back in Paris. How has the experience of attending major orthopaedic congresses changed since those early days?

> Yes, I was there for the inaugural EFORT congress in Paris. I was doing my training in the UK at the time, and my mentor, Professor Solomon, encouraged us trainees to submit our work. It's hard to imagine now, but back then, access to information was completely different. Learning primarily came from reading hard-copy journals in the library and consulting textbooks. There were no teleconferences, no web seminars, no online surgical videos, no digital access to papers. If you wanted to hear directly from the leading experts whose names you saw on publications, you simply had to travel to meetings. For young trainees like us, the opportunity to spend several days immersed in lectures and discussions with these pioneers was absolutely incredible.

Your EFORT presidency concludes after the Lyon meeting. What are your plans following this term, both within EFORT and regarding your own research interests?

> As per EFORT's statutes, I will remain on the board for one additional year in the role of Immediate Past President. Beyond that, I look forward to having more time for personal interests

like running and diving, and particularly for my research endeavours. My main research focus will be on further developing and refining the robotic platform for knee arthroplasty, aiming to incorporate more sophisticated parameters beyond basic alignment. We also plan to apply similar principles to the hip platform, attempting to move beyond simple safe zone placement towards achieving true functional hip alignment. This is a complex challenge for the hip; while current systems like Mako represent progress, fully integrating factors like spino-pelvic dynamics might require extensive imaging, potentially CT scans covering the spine down to the ankle. This level of intensity would likely only be appropriate for a select group of patients. We're also exploring how to incorporate muscle force vectors and balance considerations like leg length discrepancy versus joint stability, potentially using robotic planning to optimize 3-D offsets. The ultimate goal is to investigate if we can define surgical parameters that reliably achieve both stability and appropriate leg length. However, identifying the target patient population and managing the associated costs remain significant hurdles.

You mentioned running and diving as hobbies. Are you still actively participating in long-distance running, such as the marathons you've completed?

I have indeed completed 15 marathons over the years. Unfortunately, since last July, I've been managing a post-COVID inflammatory reaction. It presents with some characteristics similar to rheumatoid arthritis, although a precise diagnosis hasn't been made by my rheumatologists. I'm currently receiving treatment with monoclonal antibodies. Thankfully, I remain fully functional in my daily life and surgical practice. However, I've been cautious about running, mainly to avoid any potential stress on my knees, especially the right one which has been more affected. MRI scans haven't shown any structural damage, but I've decided to stick primarily to swimming for fitness for the time being. I'm hopeful it's a temporary setback, despite my wife's playful suggestion that it might just be aging!

Imagine a young Greek Orthopaedic surgeon starting their career asks for your guidance. What advice would you offer them for achieving success and maintaining well-being? What common pitfalls should they try to avoid?

First and foremost, Orthopaedics requires immense dedication and time investment. My core advice is threefold: commit to continuous learning, practice consistently to hone surgical skills, and actively seek opportunities to travel and learn from experienced surgeons ('Masters') internationally. Equally important, however, is finding and maintaining a healthy balance between professional life, personal life, and social connections. True, sustainable success often lies in achieving this equilibrium, though it can certainly be challenging. The demands of Orthopaedic surgery, particularly in busy hospital settings, make having a supportive partner or family absolutely crucial – it's incredibly difficult to thrive without that support network. We need to remember we're human, with needs that extend beyond our work. The archetype of the surgeon working 18-20 hours a day, sacrificing everything else, is not necessarily a model for long-term well-being or even peak performance and creativity. Often, the most innovative and impactful individuals are those who manage to lead balanced lives. So, my fundamental advice is to consciously cultivate this balance: communicate openly with partners and families, and make deliberate choices to nurture all important aspects of life.