

In conversation with Jane Lea: the journey from athlete to surgeon

Dr Jane Lea is a clinical professor and fellowship director of otology and neurotology at the University of British Columbia. Prior to becoming a doctor, Jane was a semi-professional footballer and represented Canada. As a result of three knee operations, Jane has had to give up running and soccer. She used to coach but hasn't done so recently since surgical schedules are difficult. However she hopes to return to coaching in the future and give back as a sports coach, as sport has given her so much.

Jane, we are looking forward to your insights at CEORL-HNS 2024 into how coaching in sport can inform coaching in surgery. Tell us about your own journey from athlete to surgeon.

They feel very much like separate lives and often, when I think back, I have no idea how I went from athlete to surgeon. It was over a protracted time with thousands of decisions that just somehow led to medical school. I gravitated to more procedurally based specialties in medical school as I preferred the more immediate reward of surgery, seeing the impact of your work in real time, and I also enjoyed the performance and team aspect of surgery that was similar to sport. The operating room is essentially a team sport, and I felt a pull towards that, as opposed to working in an individual silo.

Why did you choose otology, the most delicate of surgical specialties? JPR Williams and Jonathan Webb famously retired from international rugby into orthopaedic surgery.

When I started medical school, I certainly thought I would end up working with athletes and I explored both physical medicine and rehabilitation and orthopaedic surgery. Physical medicine and rehab was not procedural enough for my liking, and orthopaedic surgery just didn't suit me for a variety of reasons. I felt at a disadvantage being small statured and didn't think I would excel in this field, so I switched my focus to the smallest bones and muscles of the body instead, where the skillset needed better matched my abilities. I really just don't like doing things I am not good at. Having said that, I think we naturally gravitate to a field whereby we have a connection with a mentor, and this is a powerful force that I



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think leads us to certain fields that perhaps we wouldn't have considered before. This was certainly the case for me in my training.

What aspects of your experience as an elite athlete informs your work as a surgeon?

What I have carried over from sport to surgery is the performance enhancement aspect – the preparation, self-reflection, and goal-setting practices that I learned while I was an athlete, none of which was taught during medical school or surgical training.

The ability to accurately self-reflect on one's performance is likely the most important skill carried over from sport and, I feel, is the key to facilitating self-directed learning and self-improvement. Self-reflection was ingrained in sport for me at an early age. We would self-reflect and goal set for each practice and game, and document it all in writing. Coach feedback on this process certainly helped to improve accurate self-reflection skills. As a medical educator, you probably find that the greatest difficulty is likely to be when you are trying to teach someone with suboptimal self-reflection skills. Those that don't self-reflect well will struggle to improve using self-directed learning, and tend to struggle to accept direction from others. In addition, accurate self-reflection will help you acknowledge your strengths and act with appropriate self-confidence; an important aspect of being a successful surgeon.

Self-reflection is invaluable in operative surgery. Taking the time to review your own operative videos postoperatively really aids accurate self-reflection. Early on in practice, I would often watch the entire video again after the OR day, and later on in practice I would watch the sections that felt difficult or didn't go smoothly to try to get another view of what was happening and why, and determine how I could improve next time.

IN CONVERSATION WITH

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Self-reflection is only the first step; just doing that alone won't lead to improvement. You need to put an action plan in place for improvement, execute it and then continually self-reflect and goal set.

The preoperative preparation of each case is similar to what we used to do to prepare for a game. Knowing and researching your opponent is similar to knowing the details of the case, and being prepared - having a game plan and backup plans for when things go off course, and conceptualising what success looks like helps to guide your performance path. Preop preparation also includes aspects like getting adequate sleep and taking care what you consume and what activity you do the day before a performance. As an example, I realised early on in my surgical training that weightlifting and rock climbing negatively impacted my fine motor skills, so I started to avoid those the day before surgery. Interestingly, cardio did not have an impact for me, nor did caffeine consumption, but these certainly often do for others.

Use of mental imagery was also a key transferrable skill. I would use the mental imagery skills taught to me in sport to go over the operation the night before, like a video playing in my head of what I will encounter and what I need to be aware of (any aberrant anatomy on preoperative scans), almost like watching an operative video in fast forward, but one you can slow down during the important sections to really pay attention to the details. I would also use this to be aware of possible complications. I would imagine them happening and, more importantly, imagine fixing them. Just prior to the surgery, however, I would switch to focus only on positive mental imagery – the operation going well with smooth efficient movements. I typically use the scrub time to do this last positive mental imagery session.

Sport also made me more aware of my optimal arousal/mental state for performance and how key that is to optimising my personal performance. This was arguably different for sport and surgery, but a keen awareness of what arousal/mental state led to optimal surgical performance for microscopic surgery was honed over time with self-reflection, and allowed me to realise what arousal/mental state I need to try to achieve, as well as



Gravel riding in British Columbia, Canada, with Brian Westerberg.

methods to help achieve that, just before I walk into the OR. I have discovered that different arousal/mental states are needed for different types of operations.

Sport also helped equip me with techniques to get me out of intraoperative ruts, such as cue words or different micro activities that helped me reset and stay calm when things were not going well. While these were different from those used in sport, my experiences in sport helped me develop a repertoire that I could draw from that paralleled my experiences as an athlete.

Sport, as an athlete and as a coach, has also helped me alter my teaching approach. Just like in sport, teaching should be tailored to the individual receiving the feedback, not the one giving the feedback. Getting to know your trainee and what works for them and motivates them is key. Are they promotion based or prevention focused? Your training style will be more effective if you tailor your approach to better align with the trainees preferences. Most importantly however, I have learned from sport that the best method to get the most out of trainee performance is to focus on telling them what you want them to do, not what you don't want them to do. In order to process a negative statement, we need to visualise that statement in the positive first, and then conceptualise the negative. So if you say, don't drill into the brain, the trainee has to imagine drilling into the brain to realise you don't want them to do that, and that puts negative imagery into the performer's mind – exactly what you don't want your trainees imagining before handing them the drill. It's more effective to say 'leave a thin layer of bone over the dura to protect the brain'. That fosters positive imagery and is more likely to foster a safer and less stressful learning environment.

What was and still is missing in surgery is having a surgical coach to help you improve. Once you are done training, you

are on your own. No one steps into your OR to observe or watches your operative videos to try to help you improve. This, I feel, is a major issue, especially as a self-regulated profession with so much at stake. Elite athletes, musicians and business executives, even the best and most successful in world, still have a coach. Even if we are good, a coach can help us be better. Even if we are the best surgeon in the world at a certain operation, a coach could likely still help that surgeon improve, be more efficient or continue to have small gains in performance, not just with technical skills but also non-technical skills. Without a coach in surgery, individual performance improvement plateaus. A surgical coach can help maximise your own performance and improve in ways that matter to you – help you with creating and implementing an individualised performance plan, and also help to keep you more honest and accountable with your self-reflection practices and goal setting. I have had a coach my entire life, even for amateur athletic endeavours (cycling) and now, despite doing more important performance type work (surgery) there was a paucity of this in the profession. It was quite an unusual thing to not have a coach for something so performance related and something so important.

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IN CONVERSATION WITH

I understand you have recently completed a coaching certificate. Is this generic coaching or specifically for sport? Are there techniques you use from this in training surgeons?

I have completed various coaching levels via the National Coaching Certification Program (NCCP) in Canada, but this is specific to sport (football/soccer) from my past. In regards to surgical coaching, I completed surgical coaching training in 2019 with the Academy for Surgical Coaching in Wisconsin, USA, specifically to obtain skills to help me be an effective surgical coach, and really understand the differences between mentoring, teaching, and coaching, and some tools on how to implement coaching at work for myself and other surgical colleagues. Various resources are available at <https://surgicalcoaching.org>, including virtual coach training sessions and also a quick surgical coaching 101 online module, available for CME credits at <https://learn.surgicalcoaching.org/#/home>. This really spearheaded things at my institution with surgical coaching programme creation. I am now an active coach with the Academy for Surgical Coaching, and also help to train other coaches through the Academy so there is certainly a bias in the above links. The Royal College of Physicians and Surgeons in Canada is also working on an online coaching platform that has just been launched to encourage incorporating coaching into physician practices: <https://rc-prescience-test.firebaseio.com/COACHING/EN/index.html#/lessons/DGEc2gAneYXq6icb3C3ZBt90oTuPYEQ>. We have been fortunate to get a few grants to train coaches and run a few pilot programmes offering coaching. These have been successful and now the Royal College is running with things to try to make this accessible to all physicians in Canada.



Prior to becoming a doctor, Jane represented Canada and was a player on the first Canadian women's semi-professional team.

The surgical coaching training was integral to developing skills and a mindset for surgical coaching. It really is a different approach to teaching, as it's not telling people what to do, but rather asking the right questions, being curious and facilitating that self-reflection that will lead to 'aha' moments. Coaching is more about unlocking a person's potential to maximise their own performance, helping them to learn rather than teaching them. This is very different to the expert-type teaching we are used to as trainees and takes some time to buy into. It is difficult at first as it is quite a

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different approach to traditional surgical teaching, but I swear it works like magic.

Much of what has been written about sport and surgery has focused on psychology of the individual. Your sport is a team sport, as is surgery. Have you applied any of your learning about team dynamics in sport to team dynamics in surgery?

I would really like to expand surgical coaching to incorporate all the members of the OR team, from porters and nurses to the anaesthesiologists and various assists/trainees. Thus far, we have only included our anaesthesiology colleagues, but I think a platform for more team-based coaching is needed. It is baffling to me that our operative team composition changes with every OR day, and often you don't know who your teammates will be until the morning of surgery; this would never happen in high-performance sport or music. Moving toward high-performance teams in the OR, highly specialised teams that are grouped together and work together on a regular basis, is likely the way forward for optimising surgical outcomes and efficiency in the OR, and of course they would do better if they had a coach!

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