

Interview with Dr. David Chan

UTMJ Interview Team (Austin Pereira and Aidan McParland)



Dr. David Chan

David Chan is a staff neurologist at St. Michael's Hospital, specializing in electromyography and neuromuscular diseases. He is the Course Director of Concepts, Patients & Communities 2, a 16-week course in the Foundations Curriculum. He is also the Deputy Director of the Adult Neurology Residency Program at the University of Toronto.

UTMJ: How did you first become interested in the field of neurology?

DC: I started medical school at the University of Toronto in 1994. Back then, it was a much more didactic curriculum than Foundations, but problem-based learning was introduced a year or two before, and we also had weekly clinical skills sessions known as ASCM [Art and Science of Clinical Medicine], the predecessor of ICE: CS [Integrated Clinical Experience: Clinical Skills]. We had the "Structure and Function" course in Year 1, which focused on anatomy including cadaveric dissection. We then had "Brain and Behaviour" at the end of Year 1, where the neuroanatomy and clinical neurology were covered. There was a lot more basic science in the course – one of the recommended textbooks for the course was Kandel & Schwartz's Principles of Neural Science! It was during Brain and Behaviour that I realized my budding interest in neurology. I really find the analytical approach appealing – taking a neurological history and performing the physical exam to localize the lesion. At the same time, I did find the material to be complex but very rewarding once you were able to master it. I was at the Fitzgerald Academy, which at that time consisted of Wellesley Hospital and St. Michael's Hospital (SMH), with the Wellesley merging with St. Mike's in 1998. My ASCM tutor was Dr. Joseph Bruni, who is an epileptologist and a great bedside teacher – and remarkably is still practicing at St. Mike's! I decided to pursue some shadowing experience with Dr. Bruni in the summer after Year 1, so I could get more practice on my neurological exam skills and explore

the specialty a bit more. Since he is an epileptologist, his patients always have very interesting histories regarding their seizures. Needless to say, I learned a lot. He always gave me something to read about after each case, and later on he even let me go to the inpatient ward and do a neurological examination on patients that neurology was consulted on. At that time, we had a large inpatient HIV ward at Wellesley, as AZT is the only anti-retroviral drug approved to treat this condition. Neurological complications are very common in HIV infection, so I got the chance to see many interesting neurological signs in these patients. I found that when something really grabs your interest, you naturally want to read up more on it, you don't get tired of it, and over time you will start to tell your peers about how exciting it is. To me, the neurology cases gave me this "rush" of excitement. In Year 2, the curriculum allowed us to get exposure to different medical and surgical specialties, but neurology always interested me the most. I think it is my love about the underlying neuroscience and the complexity of the nervous system that drives this interest. By the end of Year 2, I was fairly certain that I wanted to do neurology but tried to keep an open mind when I entered clerkship.

In the summer of Year 2, I decided to gain some research experience and, quite frankly, tried to get my CV ready for CaRMS [Canadian Resident Matching Service]. I worked at SickKids on a research project related to epilepsy. In Year 3, I did my surgery selective in neurosurgery just to get a taste of it but realized that the pace, the type of patients, and the lifestyle of neurology were better suited for me. That being said, I actually felt more excited about many aspects of the neurosurgical cases than the internal medicine ones! I think this was mainly because of my love of clinical neuroscience in general but also because I worked with two great neurosurgery senior residents, Drs. Michael Taylor and Farhad Pirouzmand, who are now staff at SickKids and Sunnybrook respectively, as well as my staff supervisor at that time, Dr. Rajiv Midha, who is now in Calgary. By the middle of Year 3, I was certain that I wanted to apply to neurology.

What I really like about neurology is its analytical aspect and clinical approach. You have to spend

your time listening, understanding the patients' symptoms, and in many ways scrutinizing every detail of the history provided and eliciting the most important and relevant parts in order to make a diagnosis. Patients often use very loose terms to describe their symptoms: "numbness" could be used to label anything from true loss of sensation to weakness or even stiffness. Also, the complexity of the neurological examination and the process of lesion localization are both very intellectually stimulating and rewarding. Some students prefer to be on the go and get attracted to the surgical specialties, but I prefer to sit down, dissect, and analyze clinical problems. Finally, even back in the 1990's, it was apparent that the field was going to advance rapidly in the future, both in terms of diagnostics and therapeutics, and I realized that these future advances would make it a very exciting specialty.

I also thought about pediatric neurology, which is a very different specialty, but I realized that I wasn't the right person to work with that age group and the neurological conditions that the patients have. I went through this whole process, got lucky enough to get matched to Toronto for adult neurology residency, and ended up doing all my training in Toronto.

UTMJ: You mentioned an initial interest in epilepsy, while your primary practice now appears to have a neuromuscular focus. How did you decide what field of neurology you should go into?

DC: That came much later in residency, and I have considered several subspecialties before settling on neuromuscular diseases. When I was a junior resident, I worked with Dr. Anthony Lang and the late Dr. James Sharpe, and I got interested in movement disorders and neuro-ophthalmology, respectively. If you know them, you can understand it will be hard not to be attracted to their subspecialties, as they are so passionate about their area of expertise and they are both great teachers. However, two significant experiences led to the choice of my current subspecialty. First, in PGY2, I found out somewhat serendipitously about a new advanced training program from the Department of Medicine: the Clinician-Educator Training Program. I saw an advertisement about this on a bulletin board while sitting outside an office at the Toronto General Hospital waiting to review the evaluation for my internal medicine rotation. Essentially, the program will support you to become an academic medical educator, including funding to pursue a Master's degree in Education. Dr. Catherine Zahn, who was a neurologist at Toronto Western Hospital and

now the President and CEO of CAMH [Centre for Addiction and Mental Health], was the director of this program. I always love teaching, so an opportunity to become formally trained as a clinician-educator was really attractive to me. When I was in PGY3, I took the opportunity to talk to Dr. Zahn and she was very supportive of me applying to this program, as no one in neurology had done it before. Needless to say, I applied to the program, got accepted, and spent two years doing my Master in Education degree at OISE [Ontario Institute for Studies in Education], during which I worked with various faculty in the Department of Medicine as well as the Wilson Centre.

The second experience was the 6-month EMG rotation with Dr. Gyl Midroni at SMH, which is considered the best place to do an EMG [electromyography] rotation and where I am working now. I never thought I would be interested in neuromuscular diseases, because most residents are interested in the central nervous system first. Dr. Midroni is a great teacher (and now a great colleague) and I learned so much during that rotation. I really enjoyed how one can understand the normal physiology and pathophysiology through the use of electrophysiological testing. I also like the large variety of conditions in the field, ranging from very common and relative straightforward cases such as focal neuropathies and radiculopathies to more complex ones such as myasthenia gravis, CIDP [chronic inflammatory demyelinating polyradiculoneuropathy], and ALS [amyotrophic lateral sclerosis]. As I aspired to become an educator, I figured that a subspecialty that had more relevance to generalists and non-neurologists would provide more opportunities for me to teach different learners, as opposed to something more niche like neuro-ophthalmology. To sum it up, it all came together for me in PGY4. I finished by PGY5 training after completing my Master's, passed my Royal College specialty exam, and started as a full-time staff at SMH in 2005.

I think at your stage of training, you don't have to worry about which neurology subspecialty you want to do – a lot can change during residency training. Instead, you want to have a broad view of neurology as a whole in order to decide if the overall specialty is for you. That's why I encourage students to spend some time on the neurology inpatient service and in ambulatory general neurology clinics, where you will encounter a wide variety of cases. If you like neurology – its clinical and diagnostic approach, the various common and less common diagnoses, the patients – you will always find a subspecialty that suits your personality and academic interests. For example,

some residents choose to do MS [multiple sclerosis] because they like to work with younger patients and enjoy the imaging and therapeutics that are rapidly evolving in that field. Or, if they really like to deal with acute presentations, they choose to do stroke, as the hyperacute management including endovascular therapy is one of the most exciting prospects in the field currently.

UTMJ: As you said, you were one of the first clinicians to go through the Department of Medicine Clinician-Educator Training Program. Many students, residents, and staff are trying to figure out what “extra degree” they should pursue to put them on the track of being a medical educator. What are your thoughts on this?

DC: This is a good question. It depends on your career aspirations. It doesn't mean that you need a Master's degree in education to get a faculty position, even though some type of advanced training in education is strongly encouraged. For example, the Department of Medicine has a Master Teacher Program, which is essentially a requirement for all junior faculty hired as clinician-teachers. It focuses on the practical skills in teaching and evaluating different learners in various settings. The Centre for Faculty Development at SMH also offers the Education Scholars Program. If you aspire to take on major educational leadership or administrative positions, such as a course director or a residency program director, I would definitely suggest pursuing a formal degree in education. The bar is only going to rise and it is never a bad idea to equip yourself with more specialized skills and to improve your competitiveness. The field of medical education is also advancing rapidly, so I think it will only help if one understands the science better. There are definitely more options nowadays than when I went through it in the early 2000's, and many of them are tailored specifically to health professional education. There are local programs, like the one offered by our Dalla Lana School of Public Health, as well as programs at John Hopkins University, University of Illinois, University of Dundee, Scotland, and University of Maastricht, Netherlands. Some of these programs can be done via correspondence or online for the majority of the curriculum. Some of our own junior faculty are pursuing these.

UTMJ: Neurology has many areas of fascinating research. We were wondering if you could discuss any research that you are involved with or any notable research happening in Toronto that comes to mind?

DC: For me, research is not my current focus. That being said, I have done several educational projects during my Master's and also in my early years as a junior faculty. I have looked at the reliability of a rating scale used for structured interviews in resident selection. I also worked with Dr. Wendy Levinson on the disclosure of medical errors and also on the reliability of evaluating communication skills over videoconferencing. Several years ago, I worked with a cardiology fellow to look at the reliability of residency interviews done over videoconferencing. So, I have been involved in several interesting projects like these ones, rather than having an established program of research. I enjoyed collaborating on these projects, and it's too bad that my current academic and family commitments don't really allow me to seriously pursue more scholarly work in education.

You are absolutely right that our division has many leading researchers. Our movement disorders program, led by Dr. Lang, is probably the most well known internationally, attracting many clinical fellows from all over the world. They have a comprehensive research program, including basic science, neurophysiology, and clinical research. Our MS program, under the leadership of our new Departmental Division Director, Dr. Xavier Montalban, a world-renowned researcher recruited from Barcelona, and with young faculty like Dr. Jiwon Oh, who is a clinician-scientist interested in MR imaging in MS, is poised to become even more prominent internationally. There are also several clinician-scientists and clinician-investigators in our stroke program: Drs. David Gladstone and Rick Swartz at Sunnybrook, Dr. Gustavo Saposnik at SMH, and Drs. Frank Silver, Leanne Casaubon, and Aleksandra Pikula at UHN. Their research interests include clinical epidemiology, outcomes and decision neuroscience, and neuroimaging in stroke. Dr. Sandra Black at Sunnybrook has a combined research interest in cognition, stroke, and neuroimaging. Some of our basic science researchers, exemplified by Dr. Peter St George-Hyslop, have been advancing our understanding of neurodegenerative diseases such as Alzheimer's disease, FTD [frontotemporal dementia], and ALS. It is hard to name everyone without omitting somebody, so I apologize in advance if I left someone out!

UTMJ: How do you feel about lifestyle in neurology and when choosing a specialty in general?

DC: Lifestyle seems to factor in more and more in the current generation of medical trainees and residents when they choose their specialties and subspecialties.

I think it is a very personal decision. Essentially, it is a balance between your academic pursuits and personal life. From what I've seen, the current generation of trainees places more weight on family time than perhaps my senior colleagues. I remember stories about senior neurologists spending most of their time at the hospitals doing their clinical and academic work and rounding on their patients, even on weekends. Family time was not necessarily emphasized as much, relatively speaking. I think this work-life balance has been more emphasized during medical training, and personally I think this balance is critical for one's well-being. Nothing can substitute time and effort if you want to get to where you want to go in the academic world, and there is only a finite amount of time. You have to think about how to distribute your time, because I think everyone who chooses to go into academics want to derive some gratification from being successful in it, right? How big this piece should be relative to your personal and family life will differ from one person to another. It's never too early to start thinking about this, and keep in mind that your personal circumstances will change, of course, such as getting married and having kids. All of these things will gradually shape the way you think about that question over time.

So, I think it's really important to consider lifestyle in choosing your specialty because work and academic success are not the only purposes in life, and while you can be very successful academically because of your utmost devotion, you may become less successful in other areas such as personal wellness and relationships. Taking care of yourself is as important as academic success, in my opinion.

UTMJ: In comparison to other specialties, how would you say the lifestyle compares in Neurology?

DC: Overall, I think lifestyle in neurology is generally considered to be very good. If you ask my colleagues, I think most of them would say the same thing. Of course, it varies somewhat depending on your subspecialty, but you can always choose the one that suits your clinical and academic interests as well as your preferred lifestyle the most. Obviously, if stroke is a major part of your clinical practice, things will be busier because of all the stroke emergencies that are amenable to time-sensitive treatments. At SMH, all of us participate in stroke call, as there are currently only two stroke neurologists, and call can get quite busy. All of us in academic centres typically take turn in doing inpatient service, but when we are not, we basically have an outpatient practice with very predictable hours.

UTMJ: What is the most gratifying part of neurology for you? What are things that make you smile when you go home at night?

DC: I would say the patients whom I helped and the learners whom I taught. In terms of helping patients, it can be as dramatic as treating their stroke with tPA [tissue plasminogen activator] and/or EVT [endovascular therapy] and seeing their deficits improve significantly in front of your eyes. There are very few things in medicine that can give you this kind of gratification. However, most of the time it is less dramatic but no less important. I treat and follow patients' chronic neurological conditions, listen to their concerns, and support them and their family in any way I can. Just a small thank you from my patients means a lot to me. For some patients, you eventually get to know them very well and develop a strong therapeutic relationship with them. Treating a patient's migraine and allowing them to get back on track with their life, and seeing a patient with myasthenia gravis who requires respiratory support in the ICU but then eventually recovers to become normal with appropriate immunosuppressive treatment, are a couple of examples. There will always be somewhat depressing moments when you really wished you could help that patient more but couldn't; however, this applies to all of medicine.

As teaching is one of my passions and the main reason that I chose this career path, I derive a lot of gratification from teaching medical students and residents – and seeing them become successful practitioners.

UTMJ: We have one last question for you. We have heard you are something of a wine connoisseur. Could you talk about some things you enjoy doing in your free time?

DC: That started a while ago [laughs]. During my Master's, one of my supervisors was Dr. Arthur Rothman, a PhD in Education. I'm not sure how this topic came up, but he told me about a wine club that he was part of. I just started to become very interested in wine at that time and I jumped on the opportunity to attend their tastings as a guest whenever there was an opening. The club was founded by David Goldberg, Professor Emeritus in the Department of Laboratory Medicine and Pathobiology, who was also a member of the Wine Writers' Circle of Canada. A significant part of his research is devoted to the chemistry of wine, such as resveratrol and other polyphenols and their potential health benefits. The club meetings started in the Banting Institute – that's before my

time – but now the tastings are held at the Faculty Club. I attended several of these tastings as a guest and thoroughly enjoyed them. We usually taste 8 to 10 wines under a specific theme, and there is always a “mystery” wine that everyone tries to identify what it is. We will take turn describing the wines and expressing our opinions about them. Over time, I became part of the wine club as a regular member, and I’m now the secretary of the club. We meet about 8 times a year and we take turns hosting tastings on different themes.

Apart from the social aspect of these tastings, going through them is also very intellectually stimulating. It fits with neurology very well. First, you really put your mind into something outside of medicine, which I think is a very effective way to reduce stress. It doesn’t have to be wine tasting – it can be anything. I also love that I always get to learn from other people. I was the relatively junior member of that group initially, and there was a lot to learn from the more experienced tasters. Most importantly, I really liked the aspect of analyzing things, which goes back to my desire to become a neurologist in the first place. I find blind tastings to be fun yet very humbling. When you try to analyze a wine, you try to pick out individual characteristics and elements in the colour, nose and palate, and at the end you try to put everything together and pick out the type of wine or grape. In a way, this is similar to learning how to make a diagnosis, like the hypothetical-deductive approach in clinical reasoning. You have a hypothesis, you try to test it, you look at the colour, and if the wine has a lighter,

ruby red colour, it is probably not a Cabernet Sauvignon, unless you make it the wrong way [laughs], but would be more consistent with varieties such as Pinot Noir, Nebbiolo, etc. You then try narrow it down further based on other characteristics on the nose and palate, and see if they are consistent with what you expect for these varieties. Similar to making a diagnosis, this process is filled with traps and pitfalls. Sometimes you get stuck on one little element, something that you are confident that it is present when in fact it’s not, and that can totally take you down the wrong path. And sometimes with diagnoses too, if you close your mind too soon, or you get stuck on some elements of the history without considering others, that can lead you down the wrong diagnostic path as well. So, I see a lot of parallels with blind tasting and making neurological diagnoses, probably because of my clearly-nerdish way of thinking [laughs]. Of course, it is much less consequential to make a wrong guess during blind tasting than to make an incorrect clinical diagnosis! At the end of the day, I found blind tasting a good way to de-stress and I do that with my friends regularly. You also get to learn and read about something outside of medicine. I own many books on wine that I want to read, but I often don’t have the time. So, overall, I am not encouraging indulgence, but it is the academic and intellectual aspects of wine that really resonate with me. My wife and I used to go on different trips to explore different wine regions, but since my son was born almost 8 years ago, that type of trip has been put on hold.