



American Healthcare Professionals and Friends for Medicine in Israel

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Dr. Assar Kadar says the hand holds a world of medicine.

“Hand surgery is a field of medicine that is actually an integration of several professions – orthopedics, plastic surgery, vascular and nerve surgery,” says the 2015-2016 APF Research Fellow in Hand Surgery at the Mayo Clinic in Rochester, Minn. “Contrary to most other sub-specialties in orthopedics, which usually focus on bones, in hand surgery we deal with all of the structures in the hand – bone, soft tissue, tendons, nerves, blood vessels, etc. So hand surgery is by far the most diverse field in orthopedics and that’s why I’m drawn to it.

“You use techniques from all the surgical fields -- you fix bones like an orthopedist, do skin flaps like a plastic surgeon and repair blood vessels and nerves under a microscope like a micro-surgeon.

“And you can have a situation where you operate on a nerve the size of a hair and suture it with a stitch you can only see with a microscope. Then the next case can be a fracture in a big bone.

“Hands are ‘very new’ right now, especially with hand transplants becoming more common; the paradigm changes relevant to hand surgery are constantly evolving.”

The 36-year-old Mikveh Israel native didn’t always want to be a doctor; he’d thought about becoming an engineer or a scientist. But after six years’ service with the IDF’s elite 8200 (intelligence) Unit he felt differently. “I’d had the chance to work with computers on one side, while on the other side to be commanded by people and to command people. And I found I really wanted to work with people. That really influenced what I wanted to do after the military, what I wanted to do with my life.”

Kadar is now a Captain in the Reserves.

Some family members also were great influences.

“My mother was a psychotherapist and a lot of the therapeutic professions share some common features. She gave me some of her love of treating people. My father, who was a teacher, gave me a love of teaching.

“Also, my uncle was a very successful pediatrician who moved to New York in the 1980’s. I always thought he truly loved medicine and that really affected me as well.”

So, after several months of post-military travel, Kadar attended Hadassah Hebrew University Medical School in Jerusalem.

During medical school he spent a semester at Loyola University Medical School outside of Chicago. “It was a real eye-opening experience for me.”

He also spent a month in a Chicago emergency room. “That month was the most interesting time for me in all of medical school. Chicago itself, at nine million people, is bigger than all of Israel.”

Before he went he didn’t know what the medical profession looked like in the US; his visit gave him the chance to see the good and the bad.

“Technical medicine is very advanced in the US; but most of the ER patients didn’t have insurance and got to the ER without a primary care physician and very neglected, a terrible situation -- different than it is in Israel.”

While Kadar didn’t always know he wanted to be a doctor, in medical school he already knew he wanted to become a surgeon. “When I saw my first surgery, a C-section, I knew.”

But he had a difficult time choosing between general surgery and orthopedics. However, once he

started working with orthopedists during his internship the choice was easy. "I saw these guys and said, 'this really could be me. I like what they do here.'

"I like the fact that patients are not dying on you a lot and that you really can see treatment quickly make a difference. A patient with a severe fracture may walk two days after surgery, it's not like medication where you might have to wait half a year to see progress.

"The other thing that really attracted me to orthopedics is that the field is developing rapidly – 20 or so years back it was all casting, traction and lying in bed, but that isn't reality anymore."

Kadar also has a background as a business analyst for medical device invention. And a constantly-evolving field makes him think he might be able to invent something that would have an effect on his profession.

He chose to do his internship at Tel Aviv Sourasky Medical Center. Residency training in orthopedics followed at Sourasky. And before coming to Mayo he was the orthopedic division's chief resident.

Kadar is now a senior resident physician with one more year to go. He also teaches medical students and residents. "I was an educator in the army and I like to think I'm good at it. Doctors have to learn by doing; you don't learn most of surgery from books. But not all surgeons are good teachers. They take the scalpel from you at the first mistake. I don't think I do that."

He also squeezed in around his 90-hour work week (after the children were in bed) research on many orthopedic topics, mostly trauma. "Most of my studies were on hip fractures and on knees before I focused on hands. Sourasky has a very big trauma center; we are always operating."

Some of his most interesting cases? He once treated a man whose forearm was almost completely reamed out by a shark; a military doctor who took a bullet through the elbow in battle which damaged a

nerve in his hand and a child whose finger was amputated in an escalator.

He has published 16 journal articles and presented research abroad.

His current area of interest in hand surgery is the repair of "hand flexor tendon injuries." He has been working on a pilot project with the Weizmann Institute of Science near Tel Aviv and continues tendon research at Mayo. "It's a very common injury that looks like a very straight-forward repair, but it isn't. Scar tissue is the problem; after surgery patients cannot flex their fingers properly.

"Researchers are trying to find lubricants to add during surgery that will reduce friction between the tendons and their sheathes, helping the tendons to "glide" more smoothly. Hand flexor tendon injury repairs are 'very hot' right now," he says. Technically his research is called "gliding properties of hand tendons."

During his time at Mayo he is learning about tendon research at the highest level with the most up-to-date techniques. "I don't know of any Israeli who has done what I've done. This is research on a whole new level from what is done in Israel." He hopes he can bring this knowledge back to Israel and improve the level of research being done in this ever-growing field.

There is likely to be a waiting list for his services when he returns. "When you bring something back that is new, it will definitely bring more patients and help more patients. My mentor in Israel did a fellowship at Mayo and when he returned he doubled the number of surgeries he was doing."

Kadar also plans to continue to partner with Mayo indefinitely.

The Givatayim resident came to the US with his wife Neta, 32, a junior high school PE teacher and daughters Shira, 4 ½ and Rona, 2 ½

Neta is currently enrolled at Rochester Community and Technical College, studying high intensity interval training and TRX suspension training. The

Kadar family's Minnesota townhouse residence is larger than their home in Israel. And they've made some Israeli friends affiliated with other fellowship programs at Mayo.

So how did Kadar end up at the Mayo Clinic, in a relatively isolated part of the US where winter is long and seems to replicate the conditions of his daughters' favorite movie "Frozen?" "My mentor at home in hand surgery, Dr. Tamir Pritsch, had done a fellowship at Mayo and he recommended it."

And was the Mayo Clinic experience unable to be found back home in Israel? It definitely was not, Kadar said.

"In Israel, when I left, we were at only the very first stage of tendon research. Here at the Mayo they have one of the most advanced tendon labs in the world. My boss Dr. Steven Moran, the chief of plastic surgery, is one of the biggest names in hand surgery world-wide.

"And Dr. Chunfeng Zhao, from the orthopedic department, is THE biggest name in tendon research world-wide -- these are the guys who write the textbooks."

The Mayo Clinic has a huge supply of cadavers, 250 new ones a year, as opposed to Israel's supply of about 15 per year per medical school for the entire country. "Every idea you have you can test on a cadaver." Also, Mayo has a vastly more diverse and larger patient population than Israel, with digitized records going back to the 1990's from all over the world. "Even with the rarest conditions, you can find 50 or 60 cases in the records.

"It's a little pretentious to say that everything you find here will change the way patients are treated, but this research is more substantial and robust.

"The laboratories are amazing; they have everything you could imagine. And they have fantastic researchers who are ready for new ideas all the time. Every idea you throw at them they're ready for. No one will lift an eyebrow. You won't hear a

lot of 'you can't' or 'it's not a good idea.' I actually haven't heard it once here."

In fact, soon into his stay, Kadar helped find a novel solution to a bio-mechanics research problem.

A very prominent researcher was denied funding for a project that involved tendon research on dogs. "Animal rights was the issue," Kadar said. "In Israel I use chickens, but the tendons were too small for the project in question, so we decided to try working on turkeys! And rather than being laughed at or scorned, I was promptly given permission to investigate the idea, to prove that turkey tendons are very similar to humans' in size and quality, that they can very good research models.

Kadar said he proved his thesis, has written up the research and hopes soon to publish it, "And someday turkeys will be real alternatives in tendon research and we can reduce experimenting on dogs."

He also has already done ground-breaking anatomical research on the blood supply to the largest wrist bone and discovered some new information "that might lead to better understanding of a complication arising from a fracture to this bone." This project won funding from the Mayo Department of Surgery and hopefully also will lead to publication.

Kadar expects at least seven or eight journal articles from his Mayo Fellowship time, but says that the quality is more important than the quantity. "The quality of these is far superior to what I've done before."

His Fellowship, an intense one -- from 7:30 a.m. to 5 p.m. five days a week -- was first spent operating on lots of cadavers and lab animals and observing surgeries and clinic visits. Now he is spending more time reviewing patient charts on computers and doing data analysis.

Having Dad available on weekends and evenings is a novel experience for the Kadar family.

"My daughters know me and enjoy my company. In Israel I am never home and now I get the chance to be with my family.

"We are enjoying the winter, truly living 'Frozen' -- sledding, ice skating and building snowmen together.

"And we have done a lot of traveling -- to New Orleans, New York, Chicago. Orlando, the zoos, theme parks and more. We are really taking advantage of all the time we have together."

But Kadar says one of the most valuable parts of a Fellowship is the mental freedom it provides. "When you're a medical student your mind is always fresh. But when you become a doctor, you're in too deep. There's work and family.

"That's why I like this year. Your mind is clear again. You can come up with new ideas. You are not preoccupied with life as a doctor. You are living life as a researcher. It's a great opportunity."

Kadar wants to stress the importance of financial support for Fellowships such as his.

"Sourasky, for example, is a very good trauma center, it is one of THE places to go. But even the large places in Israel are not on the scale of the US.

"The competition for these fellowships is extreme. You are competing against everyone -- Harvard, Yale, the world! But it is not enough to be smart, you have to be well-funded too. People really don't use this money to have fun, they use it to receive training you can't get in Israel and to take it back there. That is one of the foundations of the medical profession in Israel.

"We have good medicine in Israel, but it is better because we have this umbilical cord to cutting-edge medicine. And it's a big expense for young doctors to undertake. But whatever help we can get, it's amazing."

Kadar says he'd like to return to the US for clinical fellowship in a one or two years.

American Physicians Fellowship for Medicine in Israel

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