Interview: 
Dr. Kenneth L. Davis, President and CEO of The Mount Sinai Medical Center

Topic: 
“The Future of Medicine”

Conducted by: 
Corby Kummer, Senior Editor, The Atlantic

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MR. CORBY KUMMER: We have Dr. Ken Davis, President and CEO of The Mount Sinai Medical Center, which has not only one of the country’s leading hospitals, but also a medical school. We’ll talk about the future of medicine. Let’s start with using patients’ own immune systems to treat their own cancers. Where is this field of research going?

DR. KEN DAVIS: Well, this is a surprising question to start out with, the immunobiology of cancer. There has been a long history in science of the notion that you should be able to defeat your own cancers. In other words, if something goes wrong in your body, why doesn't your body identify it as foreign and just destroy it?

Something goes wrong with cancer. A cell mutates, and suddenly the body doesn't destroy it. What is happening as we age that makes this occur, or what genome mutation has happened?

Biomedical research is beginning to identify what makes those cancers so hard for the body to counteract and how to boost the body's defenses to do that, even using the cancer as an antigen in order to create a vaccine. The future of cancer therapy is going to be immunobiology; boosting the immune system, using vaccines, and letting your body defeat the cancer.

MR. KUMMER: Has that been tested?

DR. DAVIS: Absolutely. In melanoma, it's becoming a new treatment, and it's being used in other experimental trials in other cancers. There are a lot of immune therapies now.

MR. KUMMER: Is it out of the realm of experimental trials?

DR. DAVIS: In melanoma, there are approved drugs for immunotherapy. You know what's so interesting about immunotherapy; it's the flipside of allergy. What happens in peanut allergy is your body turns against something that you shouldn't turn against, and of course, in cancer your body doesn't turn against what it should turn against. So at Mount Sinai, we're very interested in both sides of that equation.

MR. KUMMER: What are you doing at Mount Sinai [in terms of] research dollars and time?

DR. DAVIS: We have a lot of research around the immunobiology of cancer and the immunobiology of allergy, and a lot of that starts with genetics.

When the first human genome was sequenced, it was about a $2 billion project. Now we can sequence your genome in about a few hours for $2000, and in 10 years we could probably sequence it for about $20. That means all the data about you, your genes, the proteins that they make, and how those genes interact are going to be available. With supercomputers, we can ask how they...
interact and how does your genome fully engage, compared with a person who is totally disease-free.

MR. KUMMER: I can easily get my genome sequenced for $2000. Should I? What's that data going to tell me?

DR. DAVIS: I haven't done mine. Students at the Icahn School of Medicine at Mount Sinai can actually get their genomes sequenced. The reason I don't do mine is because I think the hand has been dealt, and I'm not that interested in figuring out what I should've done 20, 30, or 40 years ago. But I think in 10 years that will be different, because in 10 years we will really know what we can do, not just with medications, but with lifestyle changes that can normalize a lot of the expressions of your genes and how they interact with each other.

MR. KUMMER: So that's the barrier now. It does no good to find out the hand you've been dealt, because you can't do anything about it, but soon enough you will be.

DR. DAVIS: Soon enough, you will be. Perhaps I'm being a little too pejorative, but I think it may be useful for some people with diseases that are common and run in families and they really want to know about it. I think a lot about Alzheimer's disease. We've already learned from human genome project that one of the most effective ways that you may be able to delay the onset of Alzheimer's disease is with vigorous exercise.

MR. KUMMER: [Did someone start] a genetic counseling center? It was such a dilemma when this information started to become available: Do I want it, and what will I be able to do with it?

DR. DAVIS: There are a lot of genetic counselors. You need someone to interpret that genome. This sounds like science fiction. Within a few years, you'll have your genome on your iPhone. There will be an app around your genome that's going to tell you things that you ought to do, or drugs you might consider, because your medical record will be available electronically.

MR. KUMMER: You were chair of psychiatry and trained as a psychiatrist for 10 years. [What] about the future of talk therapy?

DR. DAVIS: It may be going out of fashion for psychiatrists, because lots of people can do it just as well. There are terrific social workers who can do a lot of therapy. There are terrific psychologists who can be trained in some of the most powerful methods that affect behavior. A lot of psychiatry today, for those who don't do talk therapy, is in medications, and medications in psychiatry are not the cutting edge of medicine anymore.

MR. KUMMER: If you're counseling a medical student who's interested in psychiatry, what range of options you give her or him?
DR. DAVIS: They're not that different than when I went into it nearly 40 years ago. The most disadvantaged, disenfranchised, and sickest patients that you could find for a lifetime are the chronic, persistently mentally ill.

When I was growing up on Long Island, I remember an exit on the Sunken Meadow Parkway [for] The Pilgrim Psychiatric Center. There were, in the 1950s, some 35,000 people who were mentally ill in those facilities. Going to Jones Beach, we passed those facilities, and it had an indelible impression on me. How could there be so many sick people?

And as I entered college, I was always fascinated with psychology and psychiatry. It was also the time of a lot of political unrest and social activism. I was very influenced by Robert Kennedy and the thoughts that I really wanted to make a difference. I was going to be a doctor and help those people who just couldn't get out of those psychiatric hospitals.

I would say to a person who wants to go into psychiatry that you can really help an enormous number of people who suffer from some of the most disabling conditions that are known to man. That includes not only the persistently mentally ill, but addictions, alcoholism, heroin addiction, opiate addiction, and some more common diseases like obsessive-compulsive disorder and depression.

What you've got to do is learn the science behind it and try to make a difference by understanding the brain and the genome, and then developing new therapeutics [based on] understanding the pathophysiology of these devastating conditions.

MR. KUMMER: How about the future of medical education and medical school? What's it like for you as a teacher and where do you see teaching going as far as online versus live?

DR. DAVIS: It's a little disappointing ... half the class is empty, and they are streaming me someplace. But they're learning it pretty well.

MR. KUMMER: So are you looking for ways to build in more teacher-student interaction before clinical training?

DR. DAVIS: Yes, we've asked the students to get much more involved with patients at a much earlier age. We want to bring them right out of their rooms and off their computers so they can have more practical learning.

MR. KUMMER: Asking them or requiring them?

DR. DAVIS: Requiring them. Medicine has changed from the time of you could just be a one-on-one practitioner with the patient. Now, you really have to work in groups. You have to be able to interact with the case managers, the social workers, the registrar, the nurse practitioner and the specialist.
We're trying to teach medical students to work in teams now. It's no longer the best medical student who has the highest grades. It's the best medical student whose group has the best grade.

**MR. KUMMER:** Is that going to be reinforced by the passage of the Affordable Care Act?

**DR. DAVIS:** The Affordable Care Act is going to really change the way medicine is ultimately practiced, because it's the first step toward the recognition that the country can't afford its healthcare. We have to do something to bend the cost curve.

A part of it that people don't pay enough attention to is something called Accountable Care Organizations, in which you are encouraged to spend less money for the Medicare population than you spent the year before. That's going to change the whole healthcare delivery system.

**MR. KUMMER:** You're giving financial incentives to do it.

**DR. DAVIS:** Right. For the first time, with this act, we are ultimately moving towards aligning those who pay the bills with those who provide the care, with the patients, so that they're all aligned in the same way. That's a big deal, because in a fee-for-service system, doctors are incentivized to do a lot of things because they get paid for every one of the things they do. If they're paid to take care of a population of patients and that amount is fixed, then they are suddenly being reinforced to keep people well.

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