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Cancer Treatment Tailored To You

An interview with Professor Sandy McEwan
Medical Isotope Oncologist, University of Alberta

What can we do with medical isotopes?

Medical isotopes are a way of measuring, in the body, biological processes. So at the most simplistic level, we can identify a biological process we want to measure. We create a molecule that will target in the body that process and we stick a radioactive isotope onto the back of it. Then, using the distribution of those traces in the body, and to look at the differences in their handling in disease and in normal circumstances. So that lets us begin to diagnose disease a little bit earlier, perhaps, a little bit better, a little more specifically.

How does your research work?

What I always say is that, what we are trying to do with our imaging biomarkers is to identify the right treatment, for the right patient, at the right time, in the right dose and then monitor that it's working. The other role of medical isotopes, and something that I'm particularly interested in and a lot of my research is around, is if you can deliver a very small amount of radioactivity directly into the tumor to take a picture, you can use the same targeting strategy to deliver a very large amount of radiation directly into the tumor to treat it. I'm proud we built a very large program here at the University. We have the largest isotope therapy program, certainly in the country, and possibly on the continent.

What does the future look like for your research?

What's become very, very clear recently is that cancer is not a single disease. Even cancers that arise in the same organ may behave very, very differently from one another. And so what we are learning is that we need to be able to characterize a cancer much better.