ANITA MAHAJAN: Proton therapy is different than traditional X-ray radiation, because it delivers less radiation to that patient overall. The integral dose to the patient is lower. And, therefore, we think the rate of side effects, both acute and late side effects are going to be lower. Any patient can benefit from this, especially if we expect that patient to survive for many, many years.

Internally we have a lot of research efforts going on as far as radiotherapy delivery. We have an active proton protocol collecting data for normal tissue effects, as well as tumor control. We're using biologic modeling to improve our knowledge of how proton therapy is being used.

We're incorporating a lot of imaging data, so advanced imaging from MRI and PET scans, to really better understand what we need to treat. Children are going to have the best benefit, because we're actually curing a lot of their diseases, and they're surviving. So as they survive, the side effects from the low dose of radiation that's given to the rest of their body, that reduction in that low dose, the low dose bath is going to be lower and, therefore, going to be fewer side effects down the road.

So because proton therapy has different physical attributes and does delivery, we can then use that to optimally treat a patient anywhere in the body. At Mayo Clinic, we've adopted the approach to really do things better and not just accept a standard as the approach that we want to adopt. One of the things that we've done from an early time is try to understand the biology of particle therapy.

And in particular, we've incorporated the radiobiology aspects of proton therapy into all of our dose calculations. Referring physicians will find that access to our services is quite easy. We're open and communicative.

We refer our patients back to the services that they can provide locally. We will give them feedback about our findings and really incorporate their input. At the same time, we will check everything again. Give some reassurance to ourselves and make sure that things are done well from start to finish.