BroadcastMed | Motion Analysis Lab Introduction at Mayo Clinic

I'm Dr Kenton Kaufman. I'm the director of the motion analysis lab at Mayo Clinic.

So the motion analysis lab is designed to study how people move. We analyzed the person using the principles of robotics, so we're analyzing the person's movement using the same mathematics. The purpose of the studies are to understand what are the problems that are going on, so that they can be treated. And we spend most of the time trying to differentiate between the problems that the patient has and the compensations that the patient has.

The information that is collected here is unique in that this is the one time when people are actually moving. Most of the information that's collected for patients with neuromuscular skeletal problems they're static, they're laying down; for example, an x-ray, an MRI, a CT.

In our case, the patients are actually moving, and so we're studying them while they move. And when we look specifically at that the whole lower extremities, so both ankles, both knees, both hips, the pelvis, and then, the upper extremity, as it affects the lower extremity. So when a study is done here, we're getting information at all the lower extremity joints in three dimensional space.

The distinction between the work that we're doing here and say work that would be done elsewhere, where a person is just observing with, say, their eyes, is that this is a very objective information and it's very precise. And if a person is just looking with their eyes, they can be fooled, because that's only a two dimensional view of what's happening in three dimensional space.

With Chris we have a couple of goals in the study. The first one is to look at the orthoses, or the braces, that he's using, to see if they're beneficial. And the second goal is to look at the medications that he's on, to see if they're helping him with his spasticity.