

**EDWARD
HSIAO:**

Thank you very much. I wanted to start by thanking the organizers for this opportunity to talk to you. So this is, in some sense-- is a very informal talk. So I will tell you a little bit about some of the work that we do, and also our endocrinology clinic, and talk a little bit about osteoporosis, and other situations where case managers can actually play a huge role in the improvement of care for a patient. And if you guys have questions, please feel free to pipe up in between. You'll just raise your hand, and we'll go from there. But I've-- I'm-- try to leave some time at the end too for questions.

All right. So I just want to start by saying I do have some disclosures. So some of our work is actually supported by-- I'm not sure you can see that very well-- by Clementia Pharmaceuticals and-- as well as a number of other research grants. And we're not going to be really talking much about this data today except for some of the patients that we see with Clementia. So-- all right.

Anyway, so just to give you a little bit of an idea about who I am-- so I'm an endocrinology. We have the Metabolic Bone Clinic over here in the upper right corner of the slide. And I've been very fortunate to have a translational program that actually includes everything from animal models, for studying skeletal diseases, as well as human models for studying skeletal formation. And our emphasis has really been on understanding and-- understanding the disease processes that are related to abnormal bone formation, and bone diseases, and really trying to bring that back into the clinic. And there are several of us in the Metabolic Bone Clinic that really try to embody this aspect of UCSF where we have the patient driving how we do our research and-- thank you-- and with the hope of being able to drive different types of discoveries that would go back into the clinic to actually help these patients. And I'll show you an example of what we do about that today. Thank you. Oh, and I also want to start with probably one of the more important slides is really our research group and also our clinical trials group that we've been very fortunate to have, that has helped to really drive forward a lot of these different types of projects and a lot of the work that we're doing.

All right. So musculoskeletal skeletal diseases-- I'm going to start with a quick question. You don't have to answer, which is all right, but how many people in here have had a fracture? All right. So there's a fair number of you who've had a fracture. Any idea about how long it usually takes for a fracture to heal? Six weeks, months, sometimes a lot longer.

So it turns out that musculoskeletal diseases are actually the second greatest cause of disability worldwide and there you can see that here. And it's second only to mental disorders. So this is actually a very significant disease burden. It includes everything from congenital malformations, and rare skeletal diseases, and skeletal malformations that occur, to simple things such as osteoporosis and fractures, which actually account for probably close to 80% of these musculoskeletal diseases that we're talking about.

As many of you know, there are few effective treatments. For those of you who've had a fracture, you, basically, end up in a cast, and you end up immobilized for a large period of time. It hurts during that period of time, and you just have to wait it out. And there are a number of patients who have fractures that just don't heal. And diseases of bone loss, such as osteoporosis, are probably the most common that we see in the clinical setting, but diseases of bone gain also occur. And it's very useful for us to look at these patients and to study these two contrasting processes to understand what's going on in human bone develop.

So I'm going to tell you a little bit about our Metabolic Bone Clinic. This is a clinic that's based in the Division of Endocrinology and Metabolism. We specialize in looking at calcium, and vitamin D, as well as parathyroid hormone disorder, so hormonal disorders that contribute-- and mineral metabolism disorders that contribute to bone loss. We also specialize in difficult to manage osteoporosis.

So, as was mentioned in the prior talk, some of these patients actually received aromatase inhibitors for endometriosis, as well as other patients who may have undergone organ transplants or cancer treatments. These patients are at risk of osteoporosis and so we are very happy to help with those types of management. Genetic diseases and skeletal disorders such as a disease called FOP, which I'll show you about a little more at the end. Fibrous dysplasia, osteogenesis imperfecta, or, actually, rare or unknown skeletal disorders.

And we primarily focus on the adult side, but we do also see a few pediatric patients for selected diseases. And so we're happy to help out on those fronts. And if you're here at UCSF, this is how you get in touch with us.

All right. So for today, what I'm going to talk about very briefly is a discussion about osteoporosis, because that's a major women's health issue. Although, it is actually more of a global health issue now, because men also develop osteoporosis. I'm going to tell you a story about inspirations from a rare disease for really understanding human bone formation, as well as some of the challenges that case managers can really help with, and then, also, just tie up very quickly with the Metabolic Bone Clinic again.