IFTIKHAR KULLO: Well, what we're trying to find out with our study is whether incorporating genetic risk information lowers bad cholesterol when we're estimating risk of heart attack. And we found that when we gave individuals their genetic risk information, in addition to the usual risk factor information, that resulted in nearly a 10 milligram lowering of bad cholesterol at six months after disclosure of risk. Interestingly, we found that in the group that got the genetic risk information, we didn't see any significant change in their dietary fat intake or physical activity levels. The main reason for the lowering of the bad cholesterol was these individuals got started on a statin medication more often than individuals that just got conventional risk factors estimates.

So one of the goals of the study was to assess whether we can communicate genetic risk to patients, and for that purpose we use the electronic health record. And within the electronic health record, we had a decision aid, which is a picture that shows the risk of heart attack over the next 10 years to the patients. And then what happens if we add genetic risk information, and also what would be a lowering of the risk, if they were to start on a statin medication. And then the patient, together with the physician, made a shared decision on whether or not to start a statin medication, after they received this information in a pictorial form, using this decision aid.

What we learned from the study is that if we incorporate genetic risk information into our daily practice, when we're estimating risk of coronary heart disease, we can actually cause a lowering of bad cholesterol six months after we disclose the risk to the patients. When we estimate risk of heart attack in individuals, we use known risk factors. Examples are smoking, diabetes, bad cholesterol, high blood pressure, and we then bin them into low risk, intermediate risk, or higher risk. Generally, we know what to do with individuals that are at low and high risk, but often we're not able to make decisions on those that are at intermediate risk. So having new methods of refining risk in that group of people would really advance patient care and prevent adverse outcomes.

We have learned, over the last several years, many genetic factors that influence susceptibility or risk for common diseases, be that heart attack or diabetes. What this means is that we can use some of that information in patient care situations. For example, to motivate individuals to make changes in their lifestyle, be that diet or physical activity. Or physicians and patients can together make decisions about new drug therapy that might help reduce the risk of that particular disease.