MATTHEW P. GOETZ: Hello. My name is Dr. Matthew Goetz, from the Department of Oncology at the Mayo Clinic Rochester, and I'm pleased to introduce to you the clinical study entitled 'BEAUTY', or the Breast Cancer Genome Guided Therapy Study.

JUDY C. BOUGHEY: And I'm Dr. Judy Boughey, and I'm a surgical oncologist here at the Mayo Clinic Rochester, co-PI with Dr. Goetz on this exciting, cutting edge clinical trial.

So we want to talk to you today about a study that is open here at Mayo Clinic Rochester that we're interested in having you refer some of your patients, that are being seen in the Mayo Clinic health system, for consideration for participating in this trial. As we are all seeing in our practice for both breast oncologists and breast surgical oncologists-- we're seeing a shift from the use of chemotherapy in the adjuvant setting to using chemotherapy in the neoadjuvant setting. A lot of this is due to increasing data that shows the pathological complete response is a reliable surrogate for distant disease-free survival and overall survival.

And most recently the FDA has approved the neoadjuvant setting as a proof of concept for the preliminary approval of new cancer therapeutics. When I've seen patients in the clinic, and considering the use of neoadjuvant chemotherapy, the main patients that we look to consider chemotherapy in the neoadjuvant setting tend to be the young patients, patients who, on biopsy, are identified to have Grade 2 or 3 disease, those patients that have an elevated Ki 67, or proliferation rates, if that's being run at your institution, those patients that have triple negative or HER2-positive tumors, and those that have ER poor tumors. Additionally I look at the nodal staging, and those patients that are node positive I will frequently consider for the use of neoadjuvant chemotherapy.

MATTHEW P. GOETZ: There are some patients that we do not consider for neoadjuvant chemotherapy. And these are patients with so-called Luminal A breast cancers. Typically these are patients that have Grade 1 or-- in strongly ER positive breast cancers that have a low Ki 67. Data from the meta-analysis demonstrate that patients with Luminal A breast cancers generally do not do better or worse, depending on pathological complete response. And there is an emerging body of literature which suggests that hormonal therapy is the optimal treatment for these patients.

So what is our vision in this particular setting? Well, our vision is to develop individualized therapy for patients with breast cancer. And that individualized therapy will be based on gene sequence.

So the Breast Cancer Genome Guided Therapy Study, which we've outlined in this slide, has two parts. Part one is to enroll patients in a prospective neoadjuvant study with clinical, radiographic, and pathological endpoints. Our plan is to sequence the tumor genome, and to identify novel genetic variants and alterations associated with pathological complete response.

Additionally, we will establish tumor xenografts with the idea of immortalizing patients' breast cancer cells, thus allowing us to test new drugs and hypotheses in regards to genes and gene pathways that are identified from the sequencing. Ultimately, we want to determine the functional significance of these novel genetic alterations in order to bring-- in order to accelerate drug development. Thus in part two of this study, will use the genomic information that we've generated from part one, in order to randomize patients to specific drugs based on their genomic information.

JUDY C. BOUGHEY: The next slide shows the schema of the BEAUTY study. Our goal here is to enroll 200 patients that we know will receive chemotherapy in the neoadjuvant setting-- all of these women with biopsy-proven invasive breast cancer greater than 1.5 centimeters in size. Most of these patients will have had a baseline breast MRI, and after enrollment in the study, they undergo an additional tumor biopsy.

That tissue from a tumor biopsy is sent both for germ-- both for tumor sequencing, and also for establishing mouse avatars, or xenografts of the tumor in the mouse model. Additionally, patients undergo molecular breast imaging, which is a novel imaging technique that allows us to evaluate the functional uptake of tracer in the breast.

Patients are then treated with standard chemotherapy-- either paclitaxel, followed by AC or FEC-- or, for those patients that are HER2-positive, the addition of trastuzumab, along with the standard therapy. The patients can receive their chemotherapy locally, but they do return to the Mayo Clinic in Rochester to have a tumor biopsy and an MRI-- and MBI, molecular breast imaging study-- between the paclitaxel and the anthracycline portions of their chemotherapy. After they complete the chemotherapy, they return one small for a breast MRI and a molecular breast imaging study, and then undergo surgery at the Mayo Clinic in Rochester, at which time any residual tumor from the surgical specimen is also evaluated and undergoes genetic sequencing, as well as establishment of mice xenografts if there is enough residual tissue.

MATTHEW P. GOETZ: What does the study involve for the local oncologists? Patients receive standard chemotherapy, with weekly paclitaxel. If the tumor HER2-positive, they receive concurrent trastuzumab, along with the paclitaxel. Following the completion of this portion, the patient returns to the Mayo Clinic for a biopsy and imaging. They then return home for anthrocycline-based chemotherapy, either AC or FEC, given in a Q2 week or Q3 regimen. All adverse events are managed at the discretion of the local oncologist. And we ask that oncologists provide a summary of the chemotherapy given, and this is sent to Mayo Clinic.

JUDY C. BOUGHEY: So in terms of which patients would be ideal to refer for consideration of this clinical trial, essentially, it's any patient with breast cancer who has any of the following features-- either triple negative or HER2-positive breast cancer, Grade 2 or Grade 3 invasive breast cancer, or node positive disease. And for this study we do require a tumor size of greater than 1.5 centimeters on any imaging or physical exam modality. ER-positive tumors that are low grade are not ideal and will not be considered for this study.

So if you have any patients that you think might be interested in being referred for consideration in this clinical trial, please don't hesitate to contact us. You can see here the contact information for Sharon Mercill, who is one of our study coordinators. And Additionally, Dr. Goetz and myself would be very happy for you to contact us directly with any questions related to this trial, or any patients that may be interested in participating.

We will do everything we can to expedite patient appointments and make it as convenient for the patient and for the medical oncologist treating the patient for participation in this study. We also have a patient information leaflet that you can see depicted on the slide, and we'd be happy to send these to you, to keep at your center, should any patients have an interest in participating.

MATTHEW P. GOETZ: Once again, we would very much like to thank you for your participation and support of this very important clinical trial, and we look forward to working with you.