MANISH KOHLI: The last few years have produced significant advances in how we care for men with castrate-resistant prostate cancer, an advanced cancer stage that no longer responds to hormonal treatments that lower testosterone. For men with this type of prostate cancer stage, there are several new drugs that can help prolong life after traditional hormonal therapies have failed.

However, and despite our best efforts, we cannot predict how individuals will respond to these new drugs. Here at Mayo Clinic, we have taken this challenge up by using the latest sequencing technologies to understand the fundamental changes in cancer cell biology that are happening at this advanced stage of disease.

We are learning more every day in our study called PROMOTE-- aims to improve our understanding of how castrate-resistant prostate cancer stage differs in each individual patient and how we can empower patients and physicians with the information and knowledge they need to better treat this disease stage.

There are two overarching goals in this research study. The first major focus of the study is to preserve and grow an individual patient's cancer in mice by creating mouse avatars from a piece of the patient's cancer tissue. For this, we biopsy one of the sites in the body where the tumor has spread.

We believe that by doing this, our research team can test experimental drugs against the cancer in these mouse avatars, which might help the patient in the future, when all standard treatment options have been exhausted. The mouse avatars also store a wealth of biological information of the cancer that can help scientists develop new drugs and better diagnoses long after the study is complete.

Secondly, for men who participate in the study, we use state-of-the-art gene sequencing tools to assess their tumors and the responses to their ongoing treatments. Each individual cancer patient's genome will be sequenced and analyzed from the same biopsy. And along with similar information gained from other participating men, an attempt will be made to decipher the genetic signal that predicts a response to the treatments.

Study participants during this time are able to receive treatments with the provider of their choice. However, two to three visits to Mayo Clinic over a four-month period are necessary to conduct these biopsies if patients choose to participate in this study.

Please contact us if you need more information for participating in this research study for advanced-stage prostate cancer.