For your physician

The Metastatic Prostate Cancer Project is a research study being launched and funded by the Broad Institute of MIT and Harvard, a non-profit academic research institution whose mission is to dramatically accelerate the understanding and treatment of disease. The study is being conducted in collaboration with Dana-Farber Cancer Institute as well as our advocacy partners. With this project, we are exploring a new approach to genomics research in which we partner directly with patients with prostate cancer in order to speed important discoveries.

If you have any questions about this study, please reach out to us at info@MPCproject.org or 651-293-5029.

Over the past decade, genomic characterization of prostate tumors has shed enormous light on the molecular underpinnings of cancer. These discoveries have led to the development of novel therapies and preventive measures that have already revolutionized cancer care. Despite this progress, the genomics of prostate cancer remain poorly understood.

The types of questions we strive to answer include:

• What explains why some patients show extraordinary responses to a particular treatment?

• What explains why some tumors never respond to a particular treatment?

• What genetic changes explain why some tumors initially respond to therapy but later recur and metastasize?

• How can we develop better treatments for prostate cancer?

Despite the progress that has been made to begin to answer these questions, we remain far from the goal. To get there, the detailed genomic characterization of many clinically annotated cancer samples will be required.

Because prostate cancer is often treated in the community setting, obtaining tumor samples for research is a major hurdle that needs to be overcome in order to further our understanding of this disease. To address this, we have launched a nationwide study, The Metastatic Prostate Cancer Project, which seeks to empower patients to accelerate cancer research through sharing their samples and clinical information. We have developed an outreach program in collaboration with a number of prostate cancer advocacy organizations to connect prostate cancer patients around the country with the genomics research performed at the Broad Institute, allowing them to participate regardless of where they live.

Working with prostate cancer patients and advocates, we designed a website (http://www.MPCproject.org) with an online questionnaire that allows patients with prostate cancer to provide information about themselves and their cancer. Patients with prostate cancer are then offered an electronic consent form that explains the risks and benefits of the study and asks for permission to obtain a portion of their stored tumor tissue, a saliva sample, and copies of their medical records. Enrolled patients are sent a saliva kit and asked to mail back a saliva sample, which is used to extract germline DNA. The clinical research team may also contact the patient's pathology department and request a portion of the tumor to be sent to the Broad Institute for genomic analysis. We will ask pathology departments to share only a part of the tumor tissue, and not to share anything with us that might be needed for clinical care. Next generation sequencing (whole exome and transcriptome sequencing) is performed on tumor and germline DNA.

We are also exploring the use of blood biopsies for investigating tumor genomics through sequencing circulating tumor DNA (ctDNA). Your patient may be asked to provide a blood sample, which will be obtained at a regularly scheduled blood draw.

Sequencing data are linked to de-identified clinical information, and the resulting data are used to identify drivers of tumorigenesis, mechanisms of response and resistance to therapies, and diagnostic, prognostic, and therapeutic biomarkers. The database of clinically annotated genomic information will be shared with the NIH and the cancer research community. Study updates and discoveries are shared at regular intervals with all patients who complete the initial questionnaire.

This direct-to-patient approach should be particularly enabling for patients with prostate cancer to participate directly in genomics research squarely focused on this disease. This project seeks to establish a patient-researcher partnership to accelerate genomic discoveries and improve outcomes in prostate cancer, and may ultimately serve as a means to build a new clinical and translational research model for all patients with cancer.