NorthShore University HealthSystem

COMPREHENSIVE PROSTATE CANCER CENTER

Metabolic Core Facility

Researching the Link between Cancer and Metabolic Factors

Our Mission

There is increasing scientific evidence linking obesity not only to metabolic diseases such as diabetes but also to the risk and progression of certain cancers. Hormone regulated cancers including prostate, breast, and pancreas appear to be particularly sensitive to metabolic factors. Published studies strongly suggest that altering dietary intake and reducing body weight may reduce both cancer risk and progression. The Metabolic Core Facility (MCF) and its expert staff will provide physicians the required tools to develop successful patient-related programs that promote healthy eating and weight control.

It is not clear how an increase in body fat or other metabolic disturbances influences cancer growth and progression, and this is a question that we will explore. Early clues suggest that fat cells secrete molecules that directly promote tumor growth. It is also possible that circulating factors in the blood can provide a marker of a patient's metabolic profile, thus alerting a physician to the presence of disease before it becomes clinically detectable. The goals of the MCF will be to develop innovative diagnostic tests and potential new treatments in the laboratory and to translate these discoveries rapidly to the clinical arena to improve patient care. We believe that this is best accomplished through a strong partnership between basic scientists, clinicians, and patients.

Commitment to Research

The research objectives of the MCF are focused on making discoveries that will translate into improved patient care in three metabolically sensitive cancers: prostate, breast, and pancreas.

One exciting project, led by Dr. Jennifer Doll in our MCF, involves the role of a particular protein, pigment epithelium-derived factor (PEDF), as an anti-tumor mediator in prostate cancer. In men without prostate cancer, PEDF is secreted by normal prostate cells and circulates at high levels in the blood. Prostate cancer cells do not express PEDF, and, when prostate cancer develops, the level of PEDF in the blood decreases. This discovery prompted us to investigate the use of PEDF as a cancer surveillance marker. In the near future, we plan to initiate a study to determine if blood levels of PEDF can help predict disease recurrence and prognosis in men with prostate cancer and, thus, help guide treatment.

Commitment to Education

The MCF recognizes that seminars can provide new information to patients and enhance communication between scientists, clinicians, and the community. By promoting these interactions, cancer patients will have the opportunity to ask questions which will not only help us educate each other but also may have the potential to stimulate new research activities. Currently there are many experts on our campus with interests in metabolic disorders. Examples of potential future seminars with attendance open not only to our medical staff but also to patients and other members of the community include:

Dr. Leslie Mendoza-Temple:
Nutritional Guidelines to Reduce Cancer Risk and Progression

Dr. Wendy Rubinstein:
Genetic Variations in Metabolic Diseases

Dr. Jennifer Doll:
Crosstalk between Fat and Blood Vessels in Prostate Cancer

Summary

The MCF is proposed in response to the compelling emerging data linking obesity and other metabolic disturbances to cancer risk, progression, and response to treatment. Discovering the mechanisms underlying these associations is critical in facilitating the development of effective new diagnostic tests and treatments. As a creative think tank and an interface between patients, physicians, and scientists, we believe that new discoveries in prostate cancer are just around the corner.