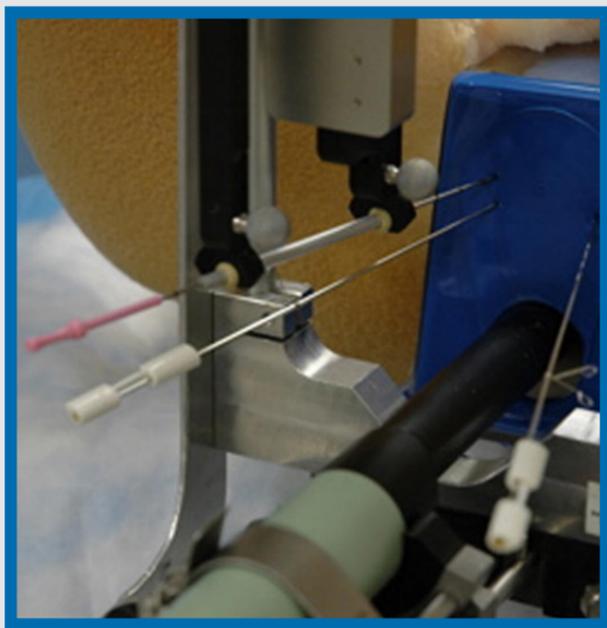


ADVANCES IN RESEARCH: MEN'S HEALTH

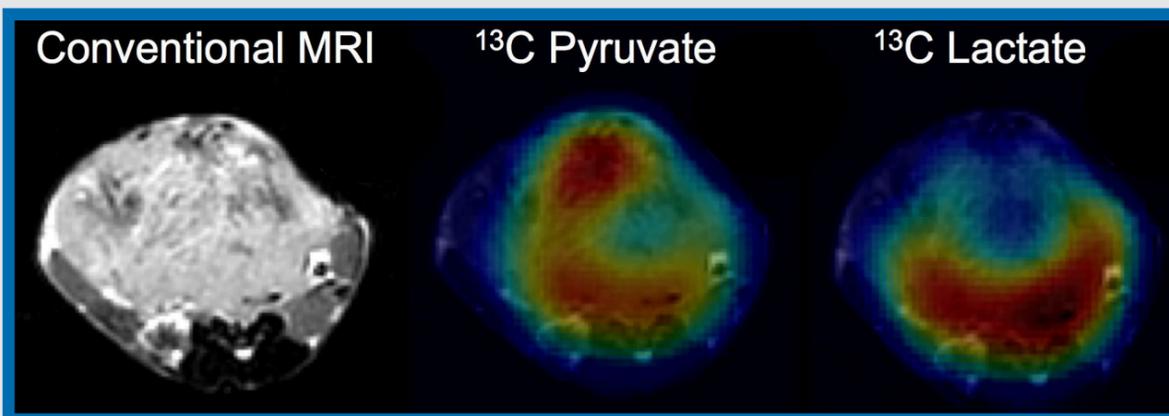
USING ROBOTS TO PERFORM PROSTATE SURGERY



Source: Gabor Fichtinger, Johns Hopkins University

About 1 in 7 men will be diagnosed with prostate cancer at some point in their lives. Though not fatal in most cases, prostate cancer is second only to lung cancer as a cause of cancer deaths among American men. Surgical removal of the prostate gland, a common treatment choice, is traditionally done through a 4 to 5-inch incision, but NIBIB-funded researchers are exploring the use of minimally invasive robotic techniques that instead use a series of small incisions, resulting in shorter post-operative recovery times, less scarring, and a faster return to normal activities. [Read more...](#)

SAFER "WATCH AND WAIT"



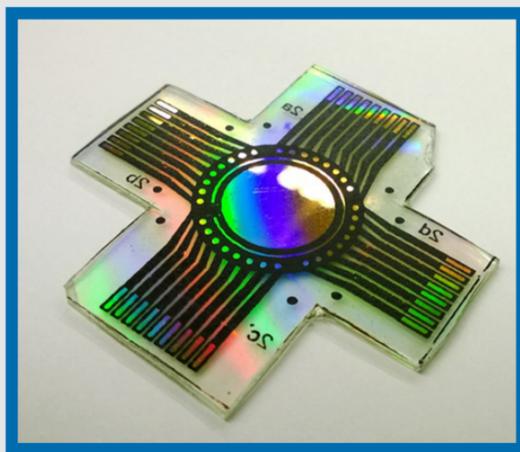
Source: Daniel Vigneron, University of California, San Francisco

Metabolic rates can provide a fast and accurate picture of a tumor's aggressiveness, but traditional MRI, unlike PET or SPECT, cannot measure metabolic rates. Doctors don't like to use PET or SPECT for routine monitoring since both modalities expose the patient to radiation. Researchers funded by NIBIB have discovered a way to inject specialized compounds (hyperpolarized carbon 13) into prostate cancer patients to measure the metabolic rate of a tumor without the risks that come with repeated exposure to radiation. Monitoring disease progression can improve risk prediction, which is critical for prostate cancer patients who often adopt a wait and watch approach. [Read More...](#)

NEW TESTING FOR PROSTATE CANCER

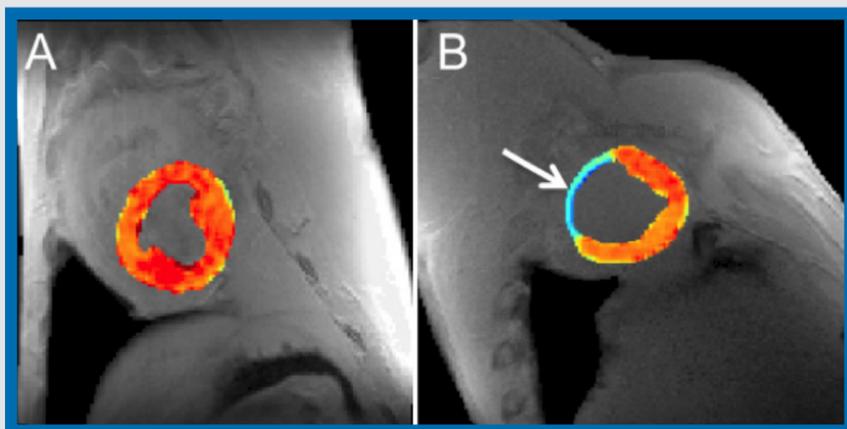
NIBIB has established a collaboration with research teams in the U.S., Ireland, and Northern Ireland to tackle a particularly difficult and significant global health problem: the lack of an accurate and reliable test for prostate cancer and the need to provide more precise grading and staging of the cancer to guide optimal treatment.

The aim of the partnership is to develop new tools for reliable, early diagnosis and treatment of prostate cancer. The core of this effort is the identification of panels of biomarkers found in the blood, which appear early in prostate cancer patients, to develop a low-cost device that uses microfluidic nanowell arrays that can rapidly detect multiple cancer biomarkers in a single drop of blood. This device could help to identify the most serious forms of prostate cancer and would also enable point-of-care-testing, which is extremely valuable for working in remote areas and with underserved populations where diagnosis and plans for treatment could be done in a single visit to a local clinic. [Read More...](#)



32 nanowell array with magnetic particle system for detecting multiple cancer biomarkers in patient blood samples. Source: James Rusling, University of Connecticut

FINDING HEART DAMAGE EARLIER



Source: Ravinder Reddy, University of Pennsylvania's Perelman School of Medicine

Heart disease is the #1 killer of men in the U.S., accounting for 1 in every 4 male deaths. Identifying areas of damaged heart tissue is a primary goal in the treatment of heart disease. Research supported by NIBIB has yielded a new, high-resolution MRI method that can reveal tissue damage in the heart by identifying areas of abnormal energy metabolism. The method, which doesn't require injection of a contrast dye or radioactive tracer, could provide doctors with a safer alternative for identifying damaged tissue early, when therapies are most effective. [Read more...](#)

FOR MORE INFORMATION:

The National Institute of Biomedical Imaging and Bioengineering
www.nibib.nih.gov