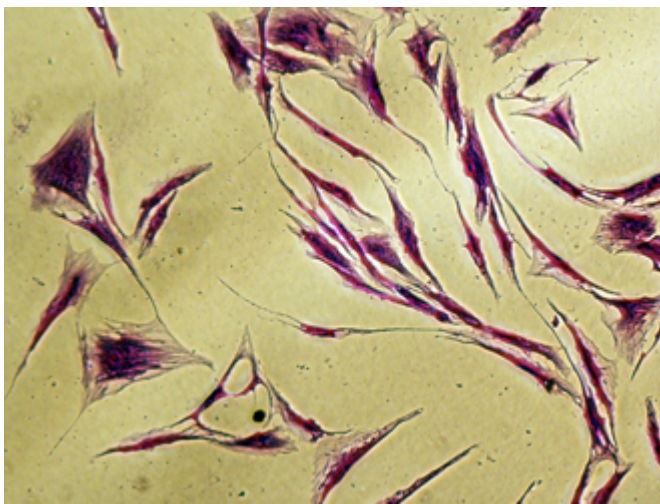


Fat Cells May Fight Cancer

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Most Americans bemoan an excess of fat. But how cool would it be if one day doctors could use fat cells to fight cancer? Tulane urology professor Asim Abdel-Mageed is examining the ability of stem cells from the fat tissue of prostate cancer patients to migrate to and enhance the growth of prostate tumors.



Color-stained stem cells derived from the fat tissue of a prostate cancer patient may be genetically engineered to act as the “Trojan horse” to fight the cancer cells' growth. (Photo from Asim Abdel-Mageed)

He is exploring a possible link between obesity and prostate cancer development and progression. The results of his [research](#) may provide new options for prostate cancer patients and potentially lead to adjuvant therapies to enhance the effectiveness of conventional treatment.

Abdel-Mageed's team proposes to genetically engineer the fat cells and use them as a vehicle to deliver an enzyme that degrades locally produced hormones that encourage prostate cancer to grow.

“We will use them as a Trojan horse, so to speak, to specifically target metastatic tumor cells at their sanctuary sites,” says Abdel-Mageed.

The incidence and mortality of prostate cancer is twice as high among African American men as Caucasians and other ethnic minorities, says [Abdel-Mageed](#), who is principal investigator on a nearly \$1 million Department of Defense Health Disparity Research grant supporting this project.

“Obesity is a risk factor for prostate cancer, especially among African Americans. We wanted to explore its possible role in the disproportionate prostate cancer incidence and progression in this group.”

Abdel-Mageed teamed up with Dr. Raju Thomas, chair of urology and a prostate cancer surgeon, to acquire fat tissue from prostate cancer patients undergoing surgery at Tulane.

“We focused on adipose-derived stem cells, or ADSCs, as there was emerging evidence to suggest that these cells have higher ability to migrate toward cancer cells,” says Abdel-Mageed. His team isolated the African American and Caucasian stem cell populations in the laboratory and then tested their ability to migrate toward prostate tumor cells.

“Compared to Caucasians and cancer-free subjects, we found that ADSCs from African American men not only have higher propensity to migrate to tumors but also to enhance the growth of prostate cancer cells.”

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