

# Body's Natural Defenses Get Helping Hand

Duke is in the forefront of cancer research, and has been named as the site for a Comprehensive Cancer Center by the National Cancer Institute.

This is the third article in a series of four written by Miss Yvonne Baskin, medical writer in the Public Relations Office, dealing with the status of cancer research and treatment, with particular emphasis on developments at Duke.

The first two articles (INTERCOM Oct. 12 and Oct. 19) dealt with the use of surgery, radiation and drugs in cancer treatment. The subject of the article below is immunotherapy—trying to find out how to trigger the body's own defenses against this invader.

The final article will deal with efforts to find the causes of cancer through research with viruses.

One of the major mysteries of cancer is why the human body does not reject the alien cells of a tumor just as it rejects and destroys other foreign tissue, such as transplanted organs.

Finding the answer to this question and putting it to use against cancer is the goal of the newest branch of cancer research—immunotherapy.

Immunotherapy is the "rising star" of cancer research, a field which has received much publicity and which many feel holds the most potential for eventually producing cures. But the field is still 25 years behind chemotherapy and has produced little so far that is of practical

benefit to cancer victims.

"The most important work in immunotherapy is still at the basic science level," said Dr. H. F. Seigler, associate professor of both surgery and immunology here. Research in this field will be expanded under the new Comprehensive Cancer Center program at Duke funded by the National Cancer Institute.

Foreign material which enters the body produces substances called antigens. These antigens stimulate two immune reactions in the body. The first is the production of circulating antibodies that may react with and destroy these antigens. The second reaction is at the cellular level, where white blood cells called lymphocytes are activated and transformed by the antigens into killer

cells which seek to destroy the foreign material.

These are the reactions which will destroy transplanted material such as kidneys or hearts unless the immune system is suppressed.

Researchers have found evidence that human tumors produce antigens and that the body does produce antibodies against them. Why then doesn't the body "reject" a tumor the way it can reject a foreign kidney?

Seigler has found in experiments on melanoma (skin cancer) patients at Duke that the malignant tumor releases so much antigen that it overwhelms the body's immune system. There is excess tumor antigen in the body for the free antibodies and lymphocytes to react with and these defenders apparently never control the tumor.

The main thrust of clinical trials in immunotherapy has been to try to boost the patient's own immune system to help it fight the cancer. Seigler has been conducting such trials for four years now using a combination of three methods.

The first is injections of BCG, a tuberculosis vaccine which is known to activate the body's immune system. Early investigators had found that children immunized with BCG for tuberculosis had 60 per cent less leukemia than nonimmunized children.

But BCG just stimulates the immune system in general; it has no specific anti-tumor effect. The second method used by Seigler has been to separate lymphocytes from the patient's blood and expose them to cancer cells from the patient in tissue culture. These

(Continued on page 3)



# Intercom

duke university medical center

VOLUME 20, NUMBER 44

NOVEMBER 2, 1973

DURHAM, NORTH CAROLINA

## Sigler Heads PR Group

## Dr. D. Tosteson To Assume Chairmanship of A.A.M.C.



DR. DANIEL TOSTESON

Dr. Daniel C. Tosteson, chairman of the Department of Physiology and Pharmacology, will take over the chairmanship of the Association of American Medical Colleges at the AAMC's annual meeting in Washington next week.

The chairmanship is the highest elective office in the AAMC, which is the primary guiding organization for medical education in the United States. It represents all of the country's 114 schools of medicine and most of their affiliated teaching hospitals.

Also taking over an AAMC office at the Washington meeting will be Joe Sigler, director of public relations.

Sigler, who last year won the AAMC's Award for Excellence in Medical Education Public Relations, will become chairman of the AAMC's Group on Public Relations.

Tosteson is the first representative of the AAMC's Council of Academic Societies to be chosen chairman. He said he believes this development shows how the AAMC is moving to represent more effectively all segments of academic medicine, including the professional educators who comprise the faculties of schools of medicine.

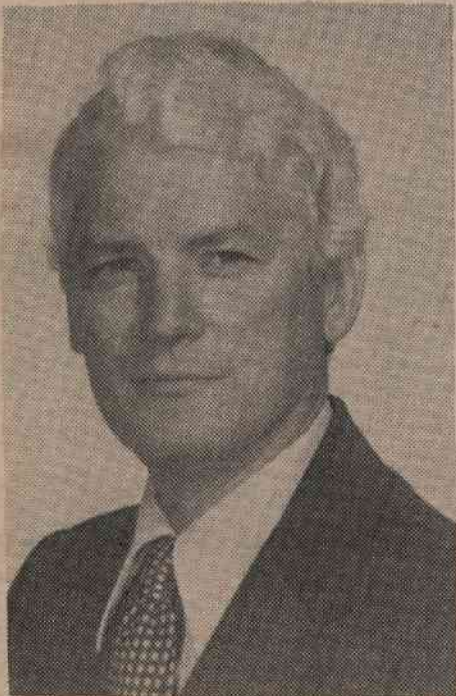
Tosteson is a basic medical scientist whose research investigates the mechanisms of movement of salt across the surface membranes of living cells. Abnormalities in this fundamental process underlie many manifestations of diseases of the heart, kidney and other organs. Tosteson's interests are not limited to the laboratory but also include medical education and the development of public policy related to health. He is one of the architects of the innovative medical curriculum at Duke.

He said he is concerned about the roles and responsibilities of professional

(Continued on page 3)



EARNING HIS PLACE—This young ape, sporting a tee-shirt proclaiming him a "first class, full fledged member of the Human Race," is helping Duke immunologists learn more about human tumor immunology. Through studies on apes like this one at the Yerkes Regional Primate Research Facility in Atlanta, Duke researchers are working on new and better ways to diagnose and treat cancer.



JOE SIGLER