

SOUTHWEST CENTER FOR ADVANCED STUDIES

POST OFFICE BOX 30365
DALLAS, TEXAS 75230

(214) ADAMS 1-1471

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ACS Contact:
Mr. Wendell Rivers,
Dallas County Unit
631-3850

DR. CHAIM RICHMAN RECEIVES AMERICAN CANCER SOCIETY GRANT FOR PION THERAPY RESEARCH

DALLAS --

The American Cancer Society has granted \$34,363 to Dr. Chaim Richman of the Southwest Center for Advanced Studies. The grant will be used for further research in "Radiobiology of a Negative Pion Beam for Cancer Therapy."

Doctor Richman, a physicist, began looking into the use of pi mesons, or pions, for tumor therapy seven years ago. The pion is a fast-moving particle that can be drawn from the nucleus of the atom in an accelerator. It can be aimed at cancer cells by careful control of its energy, and produces a strong star-burst of radiation within its target area.

Biological effects caused by the pions' energy release are six to eight times greater within the target cells than in surrounding healthy tissue, or along the entry path of the accelerator beam.

A current line of Doctor Richman's research is in anoxic cancer cells. Many tumors are not being killed by cobalt and neutron radiation, he says, because their anoxic -- oxygen-short -- cells are three times more resistant to damage. Pion radiation appears to damage both the anoxic and "healthy" cancer cells in nearly-equal amounts.

The problem with pion radiation therapy today is simply one of production. A "pion machine" that can produce hundreds of millions of the energetic particles

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per second is needed for human therapy.

Experiments have been carried out with radiation detectors, bean roots, mice, anoxic cells from human kidneys, and CHO (Chinese hamster) cells, using pion beams produced at Lawrence Radiation Laboratory in California.

These beams are at comparatively low output. A large linear accelerator, especially designed as a "meson factory," is now being built at Los Alamos, N. M. Its high output will be available in 1972, according to present funding and schedules.

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PHOTO CAPTION

Dr. Chaim Richman makes oxygen absorption measurements in cells, at his laboratory. His investigations in the use of pion beams for cancer therapy began seven years ago, and have been conducted at Southwest Center for Advanced Studies and Lawrence Radiation Laboratory. The American Cancer Society has announced a new one-year grant of \$34,363 in support of his research.

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