MELANOMA is the most dangerous form of skin cancer. It occurs when there is damage to the DNA that controls cell growth and it is most often caused by ultraviolet radiation from sunshine or tanning salons. The damage triggers mutations which cause the skin cells to multiply rapidly and form malignant tumors.

If diagnosed and treated early, melanoma is almost always curable, but if not, the cancer can advance and spread to other parts of the body, where it becomes hard to treat and can be fatal.

HMO RESEARCH:

The Hadassah Melanoma and Cancer Immunotherapy Center (HMCIC), headed by Prof. Michal Lotem, offers several treatments—unique in the world—aimed at strengthening the patient's immune response to a tumor. Treatments are designed for at stage III and IV patients who have undergone surgery for metastases. Over 200 patients with metastatic melanoma (melanoma that has spread) have been successfully treated over the past 16 years in the Center.

The MHCIC offers two vaccine immunotherapies:

- **Autologous Vaccine,** prepared with cells from the patient's own tumor
- **Allogeneic Vaccine,** engineered to stimulate a more powerful immune response and prepared from a tumor cell line generated at the Center

The vaccination protocol can be used for other cancers besides melanoma, including cancer of the colon, prostate, ovary, lung, and kidney.

HMO COLLABORATIONS:

Melanoma Research Alliance, Washington, DC

National Cancer Institute, Bethesda, MD

NEXT STEPS:

The HMCIC often takes part in clinical trials sponsored by pharmaceutical companies developing new drugs for the treatment of metastatic melanoma. The HMCIC also has several active research programs aimed at enhancing the efficacy of melanoma immunotherapy. One of these includes adoptive cell therapy, where *lymphocytes*—a type of white blood cells that can kill cancer cells—are extracted from a melanoma tumor, multiplied in the laboratory, and then returned to the patient.

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