

## THE IMMUNOLOGICAL REACTIVITY OF BREAST CANCER PATIENTS

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We have investigated the immunological reactivity of breast cancer patients prior to and after surgery by using skin tests to common recall antigens (PPD-tuberculin, Varidase and Candidin). We have also evaluated the blastogenic response of lymphocytes to phytohaemagglutinin (PHA) and the percentage of T- and B-lymphocytes (E and EAC rosettes) in peripheral blood of patients in different stages of disease. The results showed that both parameters, i.e. the blastogenic response of lymphocytes to PHA and the percentage of T- and B-lymphocytes, were significantly lower in cancer patients than in control subjects. These changes were most pronounced in stage III patients. There was no difference in the reactivity to bacterial and fungal antigens between patients and healthy women. The immunological reactivity did not change essentially after surgical removal of the tumour.

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THE USE OF NYCTOTHEROIDES PUYTORACI AS A NEW BIOLOGICAL TEST ANIMAL FOR DETECTING THE CARCINOGENICITY OF SACCHARIN, CYCLAMATE OR BRACKEN FERN (PTERIDIUM AQUILINUM)

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Sodium saccharin or sodium cyclamate induced division followed by encystation in the protozoan parasite Nyctotheroides puytoraci when injected into the dorsal lymph sac of its host Bufo regularis. Saccharin or cyclamate failed to induce encystment in the parasites in vitro. Urine of male or female toads injected with sodium saccharin or sodium cyclamate induced positive results (encystation) in the parasites in vitro. It is speculated that the carcinogenic metabolites of these substances reach the protozoa in the recta of the treated hosts and induce them to encyst. The parasites in the recta of toads which had been fed with bracken fern (Pteridium aquilinum) reacted by encystation. Urine of male and female toads fed bracken fern induced cyst formation in the parasites in vitro. The carcinogenic metabolites of bracken fern may reach the parasites in the rectum of the experimental toads and induce them to encyst.

It is speculated that Nyctotheroides puytoraci can be used as a new biological test animal for detecting the carcinogenicity of drugs such as saccharin and cyclamate or edible substances such as bracken fern.

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## ENDOMETRIAL CANCER FOLLOWING HORMONAL TREATMENT FOR BREAST CANCER: A CASE-CONTROL STUDY

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In order to evaluate whether hormone therapy predisposes to future endometrial cancer, a collaborative case-control study was carried out in Denmark and USA. The combined series included 378 breast cancer patients, who developed a second primary of endometrial cancer between 1935-1977, and a control group of 756 breast cancer patients with no second primary cancer.

In the analysis all the classical risk factors for endometrial cancer showed up. Of the hormonal treatment, estrogen therapy increased the risk of developing endometrial cancer, while no association was found with androgen and other steroid therapy. Independently of the effect of hormones, there was an increased risk associated with radiation to the pelvic area.

This study thus corroborates that estrogens and radiation are significant risk factors for endometrial cancer.