

EFFECT OF PARENTERAL ADMINISTRATION OF SUNFLOWER OIL  
ON TUMOR DEVELOPMENT (BRIEF COMMUNICATION)

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Fats are often used as solvents for carcinogenic substances, but their effect on the development of malignant tumors in vivo has received comparatively little study.

In the investigation now described, the effect of sunflower oil was studied on the development of a transplantable Crocker's mouse sarcoma.

The experimental animals were noninbred albino mice, with an initial weight of 12-13 g. The diameter of the tumors was measured and their weight determined at various times after transplantation.

In the first 3 experiments the mice of the experimental group were injected with a suspension of the tumor in sunflower oil and the control animals with a suspension of the tumor in physiological saline. The injections were given subcutaneously in the inguinal region. The tumors were found to develop faster in the experimental mice.

In the next 2 experiments the mice of experimental group 1 were injected subcutaneously in the left inguinal region with a suspension of Crocker's sarcoma in physiological saline, and in the symmetrically opposite place with the same volume of sunflower oil. The mice of experimental group 2 were injected with a suspension of the tumor in sunflower oil. The control animals were injected with a suspension of the tumor in physiological saline.

The tumors with the fastest rate of growth were those injected as a suspension in the oil; the tumors grew slower in the mice receiving injections of the sunflower oil and the tumor suspension at different places, but even so, their growth was faster than that found when the tumor was injected in physiological saline and without oil. Statistical analysis of the results showed that the difference between the weights of the tumors was significant when the comparison was made both between experimental groups 1 and 2, and between the experimental and the control groups.

The analysis of these results must begin with a consideration of data given in the literature on the effect of sunflower oil on animals. After parenteral administration of the oil tissue respiration is depressed, anaerobic glycolysis is increased, and the functional activity of the connective-tissue system is lowered. This may result in weakening of the animals' resistance to tumors.

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