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Reprinted from FEDERATION PROCEEDINGS  
Vol. 9, No. 1, March, 1950

**Metabolic alterations in radioactive isotope concentration by malignant tissues induced by hormone pretreatment. SAUL HERTZ AND J. STEWART ROONEY.\* *Massachusetts Women's Hospital and Radioactive Isotope Research Inst., Boston.***

In the course of study of patients with hopeless metastatic malignant disease of breast and cervix and (bone marrow) myeloma, it was noted that patients who had been treated by current dosage of testosterone had uptakes of  $P^{32}$  out of proportion to any such patients who had previously been observed without preliminary testosterone therapy. This led to a controlled study by tracer techniques and radioautographic study of malignant tissue obtained at biopsy and at post-mortem. The data to be presented indicate that such preliminary dosage of patients with these types of malignant disease promotes an increased uptake and retention of  $P^{32}$ . This approach to radiotherapeutic application of  $P^{32}$  affords a more likely possibility than has the administration of  $P^{32}$  to previously untreated subjects. A few results which have been obtained to date by this combination of therapeutic agents will be presented with tracer data on urinary excretion, tissue analysis and radioautographic demonstration of  $P^{32}$  in the malignant sites as compared with normal tissue distribution. It is in the direction of the above exemplified effects that the greatest hope of therapeutic application of the radioactive isotopes in cancer lie in our opinion, namely in the induction of increased specific radioactivities in the cancer cells. It is likely that other more potent means of obtaining these effects exist.