

Method for producing increased capillary fragility in rats. A substance capable of emitting alpha radiation is introduced into the peritoneal cavity of normal rats. The substance used was commercial radon ointment, 500 E.S.U., (200 microcuries 1 cc)† prepared in either lanolin (15 animals) or olive oil (5 animals). Radon ointment contains small amounts of radon gas. Ninety per cent of the radiation is composed of alpha particles while the remainder consists of beta and gamma particles. Amounts used were 0.5 cc (2 animals), 1.0 cc (16 animals) and 1.5 cc (2 animals). When the

olive oil preparation was used, the material was simply injected through a needle, while with the lanolin a small incision had to be made. No attempt was made to remove any of the material subsequently. Fragility was tested 1 to 8 weeks after the peritoneal injection. In every animal fragility was markedly increased.

Controls consisted of 5 animals injected with lanolin, 5 injected with olive oil, and 10 entirely untreated animals. None showed any petechia during the test.

Conclusion. Exposure of the peritoneal cavity of the rat to irradiation in excessive amount will produce an increase in capillary fragility.

† Dosage as estimated by manufacturer.

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Effect of Rutin on Recovery Time from Radiation Injury in Rats.*

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Rutin, a flavonol glucoside derived from various plants including buckwheat, has been shown by Griffith, Lindauer and Couch¹ to decrease capillary fragility in man, when that fragility was originally increased. One of the effects of excessive radiation appears to be an increase in capillary fragility.² There-

fore, an experiment was planned to discover whether rutin might have a favorable effect on radiation reaction.

Method. All animals were given radiation to one leg, 2385 r, in a single dose, using 200 KV, 15 ma., ½ mm cu. + 1 mm al filter, 26 cm skin target distance. At the same time half the animals were given a pellet containing 20 mg of rutin, implanted along the lateral aspect of the abdominal wall, and this was repeated thereafter every third day, for a period of 36 days. The remaining animals were not given rutin. At the end of the experimental period 23 rutin-treated animals and 26 untreated controls survived. Animals were examined every fourth day and the extent of the reaction noted. The observed reaction consisted of an erythema, a moderate swelling and, in some cases, ulceration.

Results. The extent of the initial reaction is not charted, as there was no significant

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¹ Griffith, J. Q., Jr., Couch, J. F., and Lindauer, M. A., *Proc. Soc. Exp. Biol. and Med.*, 1944, **55**, 228.

² Griffith, J. Q., Jr., Anthony, E. M., Pendergrass, E. P., and Perryman, R., *Proc. Soc. Exp. Biol. and Med.*, 1947, **64**, 331.

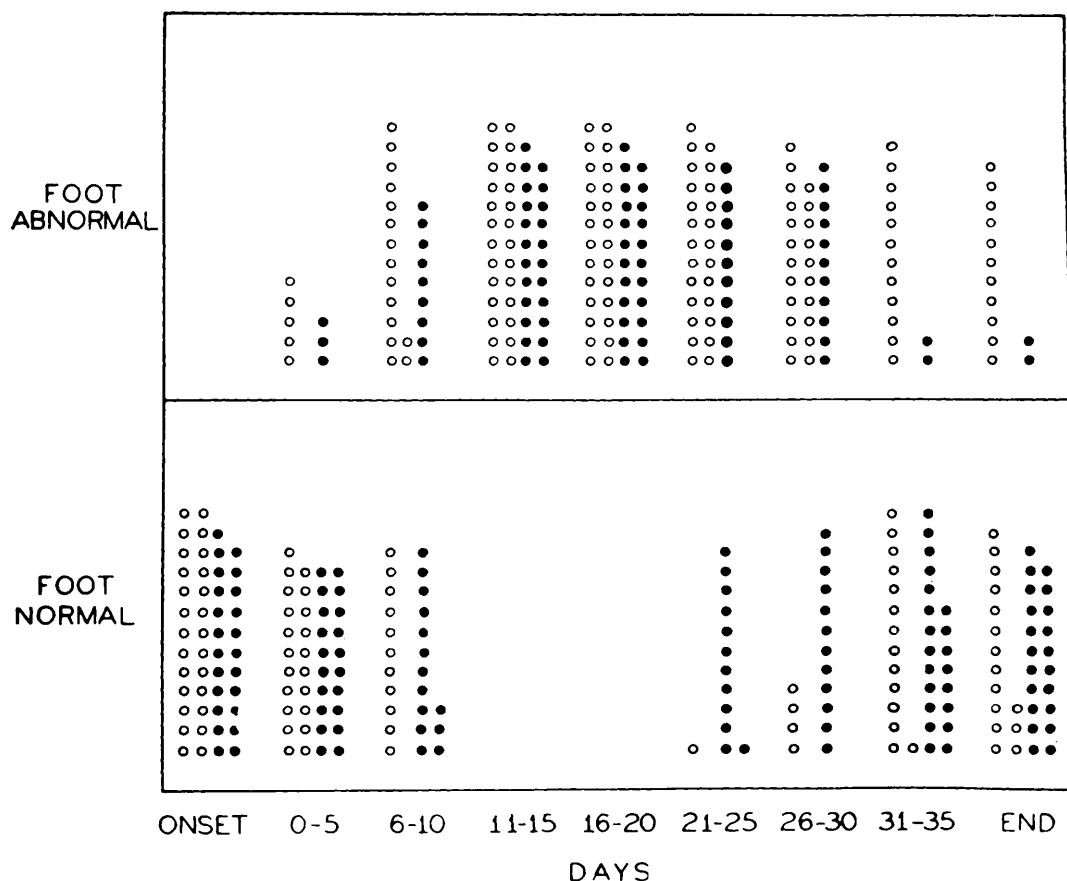


FIG. 1.

All rats were given irradiation to one foot, 2385 r in a single exposure. Closed circles represent animals treated with rutin, while open circles represent untreated animals. For other details, see text.

difference between the treated and untreated groups. There is no significant difference between the 2 groups in the time of onset of the reaction, averaging the 10th day for the control group and the 11th day for the rutin-treated group (Fig. 1). In this chart each animal is listed once for each 4-day period, appearing in the lower rectangle if the treated and untreated foot were indistinguishable, and in the upper if a definite reaction were present. It is apparent that,

from the 21st to the 25th day 12 of the animals receiving rutin returned to normal and only one of the control group. At the time of termination of the experiment, after the 35th day, only 2 of the treated animals still showed an abnormal foot, while 11 of the control group were still abnormal.

Conclusion. Under the conditions of the experiment, rutin appeared to hasten the recovery time after irradiation.