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D/L water intake by tumorous rats.

Tumour growth rate and water proton relaxation times correlate in human breast cancer (Weisman J.D. et al., *Science*, 1972, **178**, 1288; Saryan L.A., *J. Natl. Cancer Inst.*, 1974, **62**, 599; Beall P.T. et al., *Cancer Res.*, 1982, **82**, 4124). Tumours could, moreover, be detected by means of nuclear magnetic resonance (NMR) (Damadian R., *Science*, 1971, **171**, 1151; Bovée W. et al., *J. Natl. Cancer Inst.*, 1974, **52**, 595; Higer H.P. & G. Bielke Eds. *Tissue Characterisation in MR Imaging*, Berlin, Springer, 1990).

NMR lattice spin relaxation time is however lengthened not only in tumor tissue water, but also in apparently normal tissues of tumor-bearing animals (TBA), independently of the tumor seat. Since four in a group of 9 laboratory rats showed a rapidly growing cutaneous tumor, the L/D (L at 6 a.m., D at 6 p.m.) water intake was measured to verify eventual differences between the two groups. The daily water intake was not found significantly reduced in TBA versus normal rats; but the L/D rhythm of water intake was mostly irregular.

Since the tumor mass formed over 30% of the b.w., the water turnover is the result of body and tumor metabolism. Since all the rats had lived for over two years in identical conditions, the non-TBA behaviour probably adapts to a precancer, although no tumor trace was apparent.