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Obituary

Long-term psychosocial stress is suspected of having adverse effects on breast cancer, but the epidemiologic reports are inconsistent. Williams et al. examined the relationship between the chronic stress of social isolation and mammary-gland carcinogenesis in the FVB-Tg(C311)/SV40 T-antigen mouse model of human breast cancer. After weaning, young female mice were housed for 9.5 weeks in either stressful social isolation or less-stressful grouped housing. The cover image is a stylized depiction of actual testing for the effect of social isolation on mouse behavior in an “open field” testing apparatus consisting of a relatively large area with an object of interest (represented by the red ball) placed several inches from a “home base” container in the lower right corner. Individual mice were placed with some of their own bedding material in the home base and then videotaped for exploratory behavior for five minutes. The movement of a representative isolated mouse (pink track lines) reflects limited exploration, whereas the movement of a representative group-housed mouse (blue track lines) illustrates highly exploratory behavior. Compared with group-housed mice, isolated mice had stress-induced gene expression changes in premalignant mammary-gland tissue (the first such stress-related finding) and developed a significantly larger mammary tumor burden. The actual testing was videotaped in red light because the natural awake cycle of mice is nocturnal, and the tape was analyzed via Ethovision software that allows automated tracking and analysis of an animal’s movement. See articles by Williams et al. (beginning on page 850) and Trainor, Sweeney, and Cardiff (beginning on page 843) for more information.