In the news

EMOTIONALLY STRESSED

Breast cancer could be exacerbated by social isolation, a study in mice has suggested.

Suzanne Conzen and colleagues at the University of Chicago, USA, raised mice that were genetically predisposed to developing breast cancer either in groups or isolated from the time that they were separated from their mothers. They found that the socially isolated mice had larger mammary gland tumours than those raised in groups. Furthermore, even before tumour size differences were evident, mammary tissue from the isolated mice showed altered gene expression patterns, including changes in metabolic pathway genes that are likely to promote tumour growth.

Conzen emphasized her surprise at the results, saying "I doubted there would be a difference in the growth of the tumours in such a strong model of genetically inherited cancer simply based on chronic stress in their environments, so I was surprised to see a clear, measurable difference both in mammary gland tumour growth and interestingly in accompanying behaviour and stress hormone levels." (*Science Daily*, 29 Sep 2009.)

Although these data could also apply to human cancers, Oliver Childs of Cancer Research UK cautioned that "These experiments were carried out in mice, so certainly do not prove that the stress caused by social isolation causes cancer to get worse in humans." (*BBC News*, 29 Sep 2009.)

Nevertheless, Conzen noted that there were implications for human breast cancer, specifically that the genes with altered expression in stressed mammary glands could point to potential biomarkers or preventive targets. Caryn Lerman, Deputy Editor of *Cancer Prevention Research*, where the study was published, and a professor at the University of Pennsylvania, USA, said, "Future studies should evaluate whether these molecular processes can be reversed by chemopreventive agents" (*Science Daily*, 29 Sep 2009).

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