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The breast cancer epidemic: Evidence for a radiogenic cause

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The marked increase in rates of breast cancer, together with the reduction in the age of onset of the disease which began in the 1980s, point to some environmental cause. An early analysis of cohort effects in breast cancer mortality in England and Wales was presented at the 1998 World Breast Cancer Conference in Ontario. Cohort effects suggest that the principal cause was exposure to radionuclides in atmospheric test fallout. This provided a basis for epidemiological studies of breast cancer mortality near three nuclear sites in England and Wales, the results of which are presented here. Using small area data supplied by the Office for National Statistics we found a statistically significant doubling of the risk of dying of breast cancer in census wards close to the offshore coastal sediment contaminated by routine releases from the Hinkley Point nuclear site in Somerset between 1994 and 2004. In a separate study using the same data source we found a significant doubling of breast cancer mortality in small area census wards adjacent to coastal sediment contaminated by releases from the Bradwell nuclear power station in Essex. A third study employed an epidemiological questionnaire approach to examine breast cancer incidence downwind of the nuclear power station at Trawsfynydd in Wales. Results showed a statistically significant 4-fold excess incidence in the ten years prior to the survey. Taken together and with other evidence these results support the belief that the increases in breast cancer seen in the last 30 years are principally radiogenic in origin.

Biography

Christopher Busby obtained a 1st class degree in Chemistry from London University and a PhD Chemical Physics from the University of Kent. He worked in the physical chemistry of molecular cell interactions for Wellcome and began research in the biological effects of internal radionuclides in 1989. He was a member of two UK government committees on internal radiation and has published more than 30 research papers, many articles and three books on this issue. He is a reviewer for several journals on the issue of radiation and health. He was visiting Professor at the University of Ulster until his retirement and is currently Director of Environmental Research SIA, based in Riga, Latvia. He has been Scientific Secretary of the European Committee on Radiation Risk based in Brussels since 1998.

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