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by [Dich J](#)

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Testicular cancer in pesticide applicators in Swedish agriculture

Testicular cancer is more common in developed countries, and the incidence is highest in northern Europe and Canada (1). In Sweden the age-standardized incidence of testicular cancer almost doubled from 1960 to 1992, with an average annual increase of approximately 2.8% (1973—1992). In 1992, 225 new cases were reported to the Swedish Cancer Registry (2). Little is known about the etiology although the rising incidence during the last few decades, preferably among persons under the age of 40 years, together with data from migrant populations suggest a role for environmental factors (1, 3).

An increased risk of testicular cancer has been reported for populations with agricultural occupations (4, 5, 6), whereas others have failed to observe such an association (7, 8, 9). The incidence of seminomas and teratomas is higher for rural than for urban areas (10, 11).

Exposure to pesticides or other agricultural chemicals has been suspected to increase the risk of testicular cancer. In a Swedish study (12) of 20 025 licensed pesticide applicators in agriculture, who are more exposed to agricultural chemicals than farmers in general, a nonsignificantly increased risk was observed until 1982 for testicular cancer with 18 observed cases versus 11.6 expected [standardized incidence ratio (SIR) 1.55, 95% confidence interval (95% CI) 0.92—2.45]. In this closed cohort all the cases after the time of license have been included. The cohort has now been followed in the Swedish Cancer Register until death or 31 December 1991, and the mean follow-up time was 21 years. Twenty-one cases were observed versus 19.2 expected (SIR 1.09, 95% CI 0.68—1.67), and no significantly increased risk for testicular cancer was thus found. For those born in 1935 or later, the SIR was 1.02 (95% CI 0.54—1.74), and for those born before 1934, the SIR was 1.42 (95% CI 0.61—2.80).

This study failed to show any increased risk of testicular cancer among licensed pesticide applicators. Since the number of cases was small, care should be taken when conclusions are drawn from the results.

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Jan Dich, MSc,¹ Kerstin Wiklund, PhD,¹ Lars-Erik Holm, MD²

¹ Department of Cancer Epidemiology
Radiumhemmet
Karolinska University Hospital
S-171 76 Stockholm
Sweden

² National Institute of Public Health
PO Box 27 848
S-115 93 Stockholm
Sweden