Unexpected additional increase in the incidence of thyroid cancer among a recent birth cohort in Switzerland
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Data collected by the Swiss Cancer Registries Network (ASRT/VSKR) have been used to analyse trends in thyroid cancer during the last available 20 years, to make within-country geographical comparisons for current incidence rates. Age-standardized (European population) incidence rates per 100,000 for all morphologies combined ranges from 1.62 to 2.99 among males and from 2.13 to 8.09 among females in Switzerland. Regression analyses for both sexes combined detected an increase in time for papillary cases and a decrease for other types. Age-period-cohort analyses revealed that the youngest cohorts of men and women born after 1940 had an increased risk of all types of thyroid cancer while the cohort of people born between 1920 and 1939 were at increased risk of the papillary subtype. Assuming a higher sensitivity to ionizing radiation among the youngest people, a Chernobyl effect cannot be definitively excluded and continuous study of this topic should be encouraged. European Journal of Cancer Prevention 15:178–186 © 2006 Lippincott Williams & Wilkins.

Keywords: thyroid cancer, incidence, time trends, Chernobyl accident, radiations, cancer registration

Over the past decades, upward incidences of the trend of papillary thyroid cancer have been reported in several countries, such as Sweden (Pettersson \textit{et al.}, 1991), Norway (Akslen \textit{et al.}, 1990, 1993), England & Wales (Dos Santos Silva and Swerdlow, 1993), France (Colonna \textit{et al.}, 2002) and Connecticut, USA (Zheng \textit{et al.}, 1996). In addition to the known aetiological factors, increased diagnostic activity has been proposed for explaining the observed increase (Verkooijen \textit{et al.}, 2003; Leenhardt \textit{et al.}, 2004). We used the existing data collected by the Swiss Cancer registries network (ASRT/VSKR) (http://www.asrt.ch) to analyse trends in thyroid cancer during the last available 20 years, and to make within-country geographical comparisons for current incidence rates.

Material and methods
In Switzerland, cancer data are currently collected by a network of nine cancer registries, covering 56% of the Swiss population, organized by the Swiss Association of Cancer Registries (ASRT/VSKR). Each registry collects all new cancer cases occurring in the population of the related canton: Geneva since 1970, Neuchâtel and Vaud since 1974, St Gall-Appenzell and Zurich since 1980, Basel since 1981, Graubünden-Glarus and Valais since 1989 and Ticino since 1996 (Table 1). All data are merged into a central database, with common rules for data collection and coding. Quality control procedures have

Introduction
Thyroid carcinoma is an uncommon malignancy, accounting for approximately 1% of total cancer cases. In the year 2002, the annual age standardized (world) incidence was estimated to be 3.3 per 100,000 among women and 1.3 per 100,000 among men (Ferlay \textit{et al.}, 2004).

The thyroid gland is highly sensitive to radiation-induced oncogenesis. This is verified by numerous reports from survivors after the bombings of Hiroshima and Nagasaki, several atomic-bomb tests and the accident at Chernobyl. Also, earlier medical use of radiation for benign diseases in childhood was associated with thyroid malignancy (Nagataki and Nystrom, 2002).

Other than ionizing radiation, the aetiology of thyroid neoplasms remain relatively obscure but epidemiological studies have implicated benign thyroid nodules and goitre, hormonal and reproductive variables, lifestyle, dietary intakes and genetic factors (Ron, 1996). Differences in iodine intake may be one factor explaining the geographic variation, high iodine intake being associated with a slightly increased risk of developing papillary thyroid cancer although low iodine intake leads to increased risk of follicular carcinoma.

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