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Decline in Human Cancer Incidence Rates at Old Ages: Age-Period-Cohort Considerations

Konstantin G. Arbeev
Svetlana Ukraintseva
Lyubov S. Arbeeva
Anatoli I. Yashin

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Abstract
Analysis of age-specific trajectories of cancer incidence rates for all sites combined (data source: International Agency for Research on Cancer) reveals a leveling-off and decline of the rates at old ages in different countries and time periods. We apply a non-linear age-period-cohort model (James and Segal 1982) to obtain declining cancer incidence rates at old ages. The age effects are represented by a power function of age in accordance with a multistage model of carcinogenesis (Armitage and Doll 1954). Applications to cancer incidence in England and Wales, Japan (Miyagi prefecture) and the USA (New York State and San Francisco) illustrate the approach. Further topics of research are discussed.

Author's affiliation
Konstantin G. Arbeev
Duke University, United States of America
Svetlana Ukraintseva
Duke University, United States of America
Lyubov S. Arbeeva
Ulyanovsk State University, Russian Federation
Anatoli I. Yashin
Duke University, United States of America

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