

## S26. Prostate Cancer Mortality after Introduction of Prostate-Specific Antigen Mass Screening in the Federal State of Tyrol, Austria

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**Objectives:** To monitor the impact of screening in a natural experiment by comparing prostate cancer mortality in Tyrol, where prostate-specific antigen (PSA) testing was introduced at no charge, with the rest of Austria, where it was not introduced.

**Methods:** In 1993, PSA testing was made freely available to men aged 45 to 75 years in the Federal State of Tyrol, Austria. At least two thirds of all men in this age range have been tested at least once during the first 5 years of the study. Initially, only total PSA was measured, but free PSA measurement was added in 1995. The IMX assay was used. Digital rectal examination was not part of the screening examination.

**Results:** Significant migration to lower stages has been observed since the introduction of this screening program. A reduction in mortality rates in the rest of Austria from 1993 onward has occurred, with the reduction in Tyrol much greater; the mortality remained fairly

constant between 1993 and 1995 and subsequently fell. The trends in prostate cancer mortality rates since 1993 differ significantly between Tyrol ( $P=0.006$ ) and the rest of Austria. On the basis of the age-specific death rates averaged from 1986 to 1990, the difference between the number of expected and observed deaths from prostate cancer in Tyrol was 22 in the group aged 40 to 79 years in 1998 and 18 the following year.

**Conclusions:** These findings are consistent with the hypothesis that the policy of making PSA testing freely available, and the wide acceptance by men in the population, is associated with a reduction in prostate cancer mortality in an area in which urology services and radiotherapy are available freely to all patients. It is our opinion that most of this decline is likely to be due to aggressive downstaging and successful treatment and that any contribution from detecting and treating early cancers will only become apparent in the years to come.