

TOTAL & LIVEBIRTH PREVALENCE OF DOWN SYNDROME AND OTHER TRISOMIES IN EUROPE 1990-2007: IMPACT OF INCREASING MATERNAL AGE, PRENATAL SCREENING AND TERMINATION OF PREGNANCY

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Background and aims: This study aims to examine trends in total and livebirth (LB) prevalence of trisomies 21, 18 and 13 (T21, T18, T13) with regard to increasing maternal age and prenatal diagnosis in Europe; and to examine geographical variation in LB prevalence of T21.

Methods: The study population consisted of 21 registries in 12 European countries covering 5.1 million births, 1990-2007. Over 15,000 cases of trisomy including LB, fetal deaths (FD) from 20 weeks gestational age (GA), and terminations of pregnancy for fetal anomaly (TOPFA) were extracted from EUROCAT database. Poisson regression was used to assess trends over time and to examine the effect of maternal age and correction for survival to 20 weeks GA.

Results: The proportion of births born to mothers aged 35+ increased from 13% in 1990 to 20% in 2007. Total prevalence per 10,000 births was 21.6 for T21, 4.8 for T18 and 2.0 for T13; LB prevalence was 11.1 for T21, 1.0 for T18 and 0.5 for T13. There was a significantly increasing trend over time in total prevalence of the 3 trisomies, while LB prevalence remained stable. Maternal age significantly contributed to these trends while correcting for survival had little effect. There was three-fold geographical variation in LB prevalence of T21 between countries.

Conclusion: The rise in older mothers has led to an increase in the number of trisomy-affected pregnancies in Europe. Prenatal screening and TOPFA have counteracted the effect of increasing maternal age on LB prevalence in most countries.