

# Journal Digest

## Is maternal age an independent risk factor for fetal loss?

Nybo Andersen A-M, Wohlfahrt J, Christens P, Olsen J, Melbye M. Maternal age and fetal loss: population based register linkage study. *BMJ* 2000;320:1708-1712

### DESIGN AND SETTING

To study the effects of maternal age on fetal loss, data on reproductive outcomes were obtained from three Danish population-based health registries. Reproductive outcome was defined as live birth, stillbirth, spontaneous abortion, hydatidiform mole, ectopic pregnancy, or induced abortion. The risk of fetal loss according to maternal age was estimated as a proportion of all pregnancies intended to be carried to term—that is, live births, stillbirths, spontaneous abortions (including hydatidiform mole), and ectopic pregnancies. To assess the risk of stillbirth according to maternal age, only pregnancies at risk of becoming a stillbirth (ie, a pregnancy carried to 28 weeks or longer) were taken into consideration, and consequently, the risk constitutes the proportion of stillbirths among all births.

### SUBJECTS

All women with a reproductive outcome in Denmark from 1978 to 1992 were included in the study. There were a total of 634,272 women and 1,221,546 pregnancy outcomes.

### MAIN OUTCOME MEASURES

The outcomes measured were age-related risk of fetal loss, ectopic pregnancy, and stillbirth and age-related risk of spontaneous abortion stratified according to parity and previous spontaneous abortions.

### MAIN RESULTS

Overall, 13.5% of the pregnancies intended to be carried to term ended with fetal loss. The risk of all fetal losses according to maternal age at conception followed a J-shaped curve, with a steep increase after 35 years of age (see figure). More than one fifth of all pregnancies in 35-year-old women resulted in fetal loss; for women at 42 years of age, more than half of the intended pregnancies (54.5%) resulted in fetal loss. The association between maternal age and spontaneous abortion had a curve similar to that for all fetal losses. There was an increased risk of spontaneous abortion in women with increasing maternal age, regardless of parity, number of previous spontaneous abortions, or calendar period (1978-1982, 1983-1987, or 1988-1992). The risk of spontaneous abortion varied from a minimum of 8.7% by

the age of 22 years to 84.1% by the age of 48 years or older. While the overall risk of spontaneous abortion increased in the years of the study, calendar period or maternal birth cohort did not confound the association between maternal age and risk of spontaneous abortion. The incidence of ectopic pregnancy showed a steady increase with increasing maternal age. At the age of 21 years, 1.4% of women had ectopic pregnancies, whereas 6.9% of pregnancies in women aged 44 years and older were ectopic. The association between maternal age and stillbirth also showed a J-shaped curve, but the effect was less than for spontaneous abortions and ectopic pregnancies.

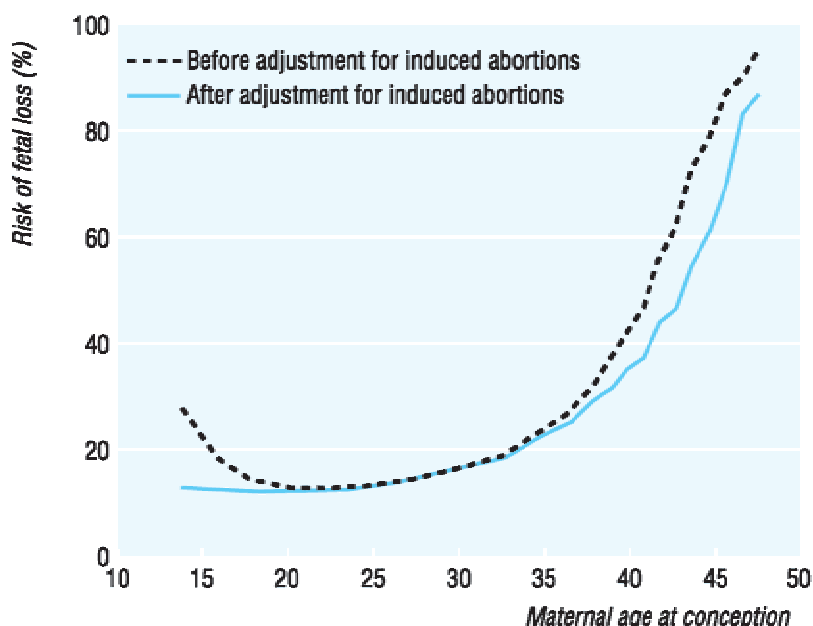
### CONCLUSIONS

There is an increasing risk of fetal loss with increasing maternal age in women aged more than 30 years. Fetal loss is high in women in their late 30s or older, irrespective of reproductive history. This should be taken into consideration in pregnancy planning and counseling.

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None declared

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Risk of fetal loss from spontaneous abortion, ectopic pregnancy, and stillbirth according to maternal age at conception (yr)