

17th World Congress of the Academy of Human Reproduction

*15–18 March 2017
Rome, Italy*

TITLE

FERTILITY AND LONGEVITY

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ABSTRACT

Context: Delay in maternal age at first birth is a significant demographic trend. Concomitantly, an extensive body of literature attempts to elucidate the observed associations between late-age childbearing and longevity. It is essential to assess individual patients' potential for extended fertility and to convey the health consequences of childbearing at a later age.

Objective: To review the literature and discuss future directions of research in the emerging field of fertility and longevity.

Two opposing theories have been put forward to explain the link between fertility and longevity: the disposable soma theory, which posits that 'longevity requires investments in somatic maintenance that reduces the sources available for reproduction'; and the theory that posits a link between age at the birth of the last child and maternal longevity, suggesting a slower rate of aging in women with late childbearing. In a very large cohort we showed that long-term maternal survival was linearly associated with maternal age at last birth: mortality rates were decreased 16% for women who delivered aged 40-44, and by 42% for those who delivered aged ≥ 45, compared to women completing childbearing up to age 35. Genetic or biological mechanisms may be involved: late reproduction correlates with expression of several genes involved in aging; late-bearing women are more likely to have long-lived relatives. Biological effects could include the protective effect of delayed menopause and exposure to estrogen, and pregnancy itself may have a rejuvenating effect on the mother.

Future research must address causality: whether later gestation confers an advantage or is the result of innate advantages. Present and historical populations of women with both very high fecundity and delayed aging support the idea that late childbearing is strongly associated with longevity.

INSTITUTE

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