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**Re: First vaginal delivery at an older age: does it carry an extra risk for the development of stress urinary incontinence? Groutz A, Helpman L, Gold R, Puzner D, Lessing JB, Gordon D. 2007. Neurourol Urodyn 26:779-782.**

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## **Title**

RE: Groutz A, Helpman L, Gold R, Pauzner D, Lessing JB, Gordon D. 2007. First vaginal delivery at an older age: Does it carry an extra risk for the development of stress urinary incontinence? *Neurourol Urodyn* 26:779-82.

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## ***Abstract***

The conclusions of Groutz et al must be interpreted with extreme prudence. An accurate response to the two questions asked by the authors would require to compare, in a cohort of young women of the same age before their first pregnancy, the prevalence of SUI several years later (at the same age for all the women) as a function of parity, age at first delivery and mode of delivery and to analyse, in a randomised trial (elective cesarean versus vaginal delivery) the effect of cesarean according to the woman's age.

## ***Text***

To the editor of Neurourology and Urodynamics

Sir, we read with interest the article by Groutz and colleagues, who state that a first vaginal delivery after the age of 37 years is associated with a higher risk of stress urinary incontinence (SUI) than a first delivery before the age of 30 (hypothesis A) and that cesarean delivery has a protective effect in elderly primiparae (hypothesis B).<sup>1</sup> We think, however, that their conclusions must be interpreted with extreme prudence.

Testing these two hypotheses requires taking four factors into account: parity, mode of delivery, age at delivery, and age at questionnaire. Their respective interactions must also be examined. The difference observed by Groutz between the group of elderly and young primiparae who delivered vaginally (38 vs 10% postpartum SUI) may be attributable simply to the age difference of the women at the moment of the questionnaire. Rortveit et al showed that SUI is 3 times (from 2.0 to 4.4 times) more frequent in nulliparae aged 40-49 years than in those aged 20-29.<sup>2</sup> Although the authors might argue that the exclusion of preexisting SUI is likely to correct for the effect of age at questionnaire, they do not demonstrate this point, and it leads to the selection bias discussed below. To determine the possibility of an effect of age at first delivery, it is essential to assess the interaction between parity (nulliparae versus primiparae) and age (young versus old) and therefore to include nulliparae and primiparae of different ages. The absence of nulliparae in Groutz's study prevents the testing of hypothesis A. Other studies do not support the existence of an interaction between age and delivery on SUI risk: Kuh et al questioned a sample of 1333 women aged 48 years and found no association between SUI and age at first delivery.<sup>3</sup>

Questioning 2625 women aged 49 to 61 years, we found no excess risk (OR=1.0; 95% CI 0.7-1.3) for women who gave birth for the first time after the age of 27.<sup>4</sup>

Confirmation of hypothesis (B) requires an assessment of the interaction between mode of delivery and age. It can only be studied with groups of women differing for age (young vs old) and mode of delivery (vaginal vs elective cesarean). This study does not have a group of young primiparae with cesarean deliveries.

We must also express doubts about the validity of the constitution of the three groups that are included. We regret that Groutz et al do not indicate how they avoided the the possible recall bias and partial response rate we encountered, although they seem to have used a method similar to ours.<sup>5</sup> It appears to us (but is not explicitly stated) that the authors constituted their groups of women retrospectively. We would like to know the response rate and the factors associated with it. If the women were questioned 1-2 years after delivery, how did the authors exclude women with SUI before pregnancy? There is a substantial risk of recall bias associated with retrospective collection of such data. Viktrup and Lose showed that only 26% of women recalled the onset of their SUI precisely 5 years after first delivery.<sup>6</sup> Moreover, the exclusion of women already incontinent before pregnancy is likely to select a very particular population of elderly primiparae. Some women who were not incontinent at the age of 20 years could have been included in the group of primiparae with vaginal delivery if they had been pregnant when they were young, but if SUI developed occurred around the age of 37 years and they subsequently became pregnant, they could not be included in the group of elderly primiparae. The prevalence of SUI in nulliparae triple between twenty and forty.<sup>2</sup> This high figure shows clearly that elderly primiparae who are continent before their first pregnancy are different from young primiparae to whom they are compared. Their apparent comparability is far from

certain, and the differences observed between the incontinence rates in the three groups may reflect selection bias.

An accurate response to the two questions asked by the authors would require applying the following study design: A, in a cohort of young women of the same age before their first pregnancy, the prevalence of SUI could be compared several years later (at the same age for all the women) as a function of parity, age at first delivery and mode of delivery; unfortunately no such cohort appears to be under study at this time. For hypothesis B, only a randomised trial (elective cesarean versus vaginal delivery) analysing the effect of cesarean according to the woman's age and testing the interaction between age and effect of cesarean can answer the question.

Sincerely.

## **References**

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