

The Impact of Pregnancy and Childbirth on the Vagina

At a singular, very important level, the malleability of the vagina and associated pelvic floor structures is what every woman contemplating a pregnancy would wish for. This facilitates the passage of a relatively large object (the baby) through a comparatively small channel (vagina). However, pregnancy and childbirth are two of the strongest risk factors for damage to the vagina and other pelvic floor structures. Evidence suggests that this is related to an interplay of hormonal changes, mechanical disruption of the pelvic floor structures and denervation of the pelvic floor muscles.

During pregnancy a multitude of changes takes place within the woman's body. These generally facilitate the progress of the pregnancy towards a successful conclusion, the delivery of a healthy baby to a healthy mother. Within the first 13 weeks of pregnancy (first trimester) the pregnant woman will experience dramatic alterations in emotion, hormonal status, physiological parameters and anatomical modifications. Many of these developments will take place before the 'bump' of pregnancy is fully appreciated.

In order to accommodate the growing baby, relaxation of the muscles and connective tissue of the abdomen and pelvis needs to occur. The dimensions of the bony structures of the pelvis do not change, but the ability of the individual bones to move relative to each other does. Progesterone and Relaxin are two of the main hormones involved in this process. Without an increase in their concentrations and activity, the pelvis would remain restrictive to the growth of the baby and the potential for vaginal delivery severely diminished.

Pregnancy culminates in delivery but both are distinguished as separate processes. Not every pregnancy ends in delivery. Even in those that end early, the dramatic changes in hormonal status and connective tissue function have already begun to take place and some of these changes produce effects on the pelvic floor that contribute towards the panorama of vaginal dysfunction and prolapse in later years.

The mode of delivery impacts on the risk and degree of pelvic floor damage. The so-called 'normal vaginal' delivery occurs when the baby's head descends through the mother's birth canal and is delivered through the entrance to the vagina (introitus). 'Normal' it may be called, but the head stretches, tears and disrupts muscle, connective tissue, ligaments and nerves as it passes through the vagina. Other types of delivery that tend to cause even more damage include instrumental deliveries, in particular the forceps and ventouse (suction cup) delivery. These instruments are used in circumstances where a normal delivery has not been achieved or where there is a perception that allowing the delivery process to continue would place the baby at risk of reduced oxygen supply. The use of these instruments, whilst facilitating delivery of the baby, increases the incidence of vaginal muscle, connective tissue and nerve trauma. Lacerations, tears and the formation of scar tissue are more events. There is some variable degree of restitution of the damage that occurs and this usually takes place

within the first 3 months after delivery. In the long-term this translates as damage to pelvic floor function and increased risk of prolapse for the mother.

Women will often identify a particular pregnancy as the beginning of their symptoms. The damage, though, is cumulative over all pregnancies. Caesarean section delivery is protective to the vagina but may make future pregnancies more complicated.