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# The evolution of maternal birthing positions

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## Abstract
Birth of a child is an unique time in the life of every woman. Unfortunately, labor is often one of the most painful and traumatic experiences suffered in her life. For a long time lying on the back position was the most commonly used birthing position. In many hospitals, women were even forced to give birth in this position. However, multiple studies revealed that the supine position is linked to multiple negative maternal and neonatal outcomes.
The purpose of this paper was to describe the history and advantages of alternative birthing positions.

**Key words:** birthing positions, history

In the history of midwifery, the fact of an instinctive admission by the women, the most comfortable for them, so-called vertical positions during childbirth, which include standing, kneeling, sitting or squatting, is commonly known and confirmed. Numerous ancient paintings found on the walls of caves or grottos show women giving birth in a vertical position. Some of them depict women sitting, leaning back against the wall, with her legs which are spread wide, or women who are standing and holding on, for example, a tree (1). In the descriptions of Greek and Roman mythology, the goddess of childbirth and midwifery Elyithya was often shown in a kneeling position (2). To adopt a sitting position, already at the beginning of the 2nd century of our era, a birthing chair, at first recommended by the greek gynaecologist Soranus of Ephesus was being used, and then it was used by consecutive historical ages (3,4). Also in the Middle Ages a specially designed for childbirth, decorated chair was used, which in wealthy families was inherited property, while among the poorer people it was passed from one family to another when necessary (5). In the era of Renaissance, a so-called "living birthing chair" was also used during labor. The woman giving birth sat during labor on the lap of an accompanying person, which sometimes was her husband (1).

The birthing chair was constantly modified in order to facilitate the observation of labor, but also for the greater convenience of the laboring woman. The diameter of the birth aperture was changed, various types of backrests were used, and in 1679 Hendrik van Deventer constructed and put into use a birthing chair with adjustable back, which allowed the woman to take a lying position during the interval between contractions. This was very helpful, because births in those times often lasted for one or two days, or even longer, and the change of position brought significant relief (6, 7).

Until the mid-eighteenth century, the birthing chair was an obligatory equipment of every midwife, but already earlier, at the turn of the 16th and 17th century when physicians started to deal with obstetrics (8), a horizontal position was promoted, mainly in order to facilitate observation of labor (6,9). Obstetric forceps introduced into medical practice in England and France in the 17th century, favored dissemination of the supine position because only in this position they could be applied. In 1668, François Mauriceau published a treatise on obstetrics, in which he recommended that pregnant women should not use birthing chairs but lay on their backs. He explained this change by a better possibility of controlling the delivery process and the possibility of forceps maneuver if necessary (10-12). To spread horizontal position among the French aristocracy contributed the delivery of Madame de Montespan, mistress of King Louis XIV, who was giving birth in the supine position so that the king could watch the birth of his child from behind the curtains. As a result, the thinking and approach of the female sex has changed over time to non-horizontal birth positions. Influential women recognized the squatting position during labor as plebeian and far from "refinement" (13).

Breaking the ban on admitting men obstetricians to the delivery room at the beginning of the Renaissance and the invention of obstetric forceps and other devices facilitating the control of labor, resulted in popularization of the horizontal position as convenient especially for medical personnel. Childbirth began to be more often treated as a procedure in which the most important is to reduce the number of deaths of children and mothers with the use of available medical equipment. Over time, as the medical technology developed, the feelings of the delivering woman and her natural, instinctive approach to the birth ceased to be important for medical staff and the forced acceptance of the supine position became common (11, 14).

The consequence of the popularization of the horizontal position was the emergence of the delivery bed, which was initially used only for "complicated" labors, but due to the convenience of the doctor and midwife, it became more and more popular (1). In the 19th century, a supine position was in force in Poland during delivery. The births were most often

taken at home on the so-called "transverse bed", which meant positioning the woman giving birth transverse on her bed, with her feet rest on the chairs. In midwifery schools, the delivery bed specifically was not used so that the students would be able to take delivery at home (15). At the turn of the 19th and 20th centuries, discussions on positive and negative aspects of delivery in a horizontal position began. From the nineteenth century, however, there are single reports of births in which women took up standing, sitting, squatting or kneeling position. In 1870, Von Ludwig wrote that the position of a woman giving birth should be natural, that is, it should facilitate childbirth, giving the possibility of the best collaboration with the midwife, usage by the woman maximum of pushing forces and reducing the risk of damage of mother and fetus (16).

In the Russell's study of 1969 , based on radiological studies, it was shown that the anterior-posterior dimension of the birth canal at the change of position from lying to squatting, can increase up to 30%, which definitely favors more efficient pushing (17). Along with learning about the mechanisms that occur in the second stage of delivery and the benefits of adopting vertical positions in this period, the conviction about positive aspects of delivery in a semi-sitting, sitting position and hanging in the arms of accompanying people during labor was gradually increasing (18, 19) . Women from South Africa still use a kneeling position in which they hang on a rope attached to a tree branch or to the beam on a ceiling (1). Ina May Gaskin - an American midwife with many years of experience, who assists in childbirth at homes, claims that women, if they only can, almost always choose an upright posture for delivery. According to her, this unanimity suggests that laboring women decide to give birth in a supine position only when they are forced to do so by cultural conditioning (13).

Currently, in childbirth schools women are learning to use positions that help in delivery, such as sitting, kneeling, standing, crouching or standing on all fours, which are becoming more common around the world. Vertical positions make it possible to maintain the mobility of the pelvic floor, especially the sacroiliac joints, which allows it to reach its optimal capacity. Staying in motion and in an upright position until the end of labor ensures maximal relaxation of the pelvic floor muscles (20). Scientific research proves that the adoption of vertical positions increases the strength, frequency and regularity of uterine contractions (4,10,21,22), and the direction of gravity coinciding with the direction of expulsing forces of the uterus causes that the process of opening the cervix progresses faster, therefore the time of delivery shortens (7). The best adaptation takes place after adopting a squatting position, in which the anterio-posterior axis of the inlet plane can increase by up to 30% (4,17). Vertical positions also allow for more efficient use of pressure, without the need for "deep breathing", closing the mouth and attracting the chin to the chest (23).

The reduction of pain sensations in vertical positions is explained by the possibility of "discharging the tension" through greater freedom of movement (20) and by less compression of the pelvic nerves by the pregnant uterus and fetus (4). In the supine position a syndrome of the vena cava inferior often occurs, which in consequence lowers the blood pressure, thus reducing the flow of the placenta and causing the feeling of weakness. After changing of the position the pressure subsides and the disrupted exchange of blood between the mother and the child immediately improves (1,4,7,24). Another positive effect of the vertical position is the even stretching of the perineal tissues (4). The pressure of the fetus head focuses then in the middle of the outlet, rather than on the perineum, thus reducing the possibility of his injuries (20).

It is important to make the woman aware that the worst position for delivery, especially in its second period, is the position lying on the back, which is inadequate to the anatomical structure of the birth canal and makes the woman trying to push the child uphill - against and not according the force of gravity, which causes that pushing is less effective (25-27).

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