

Dianatal® Obstetric Gel: saving time & energy in human childbirth

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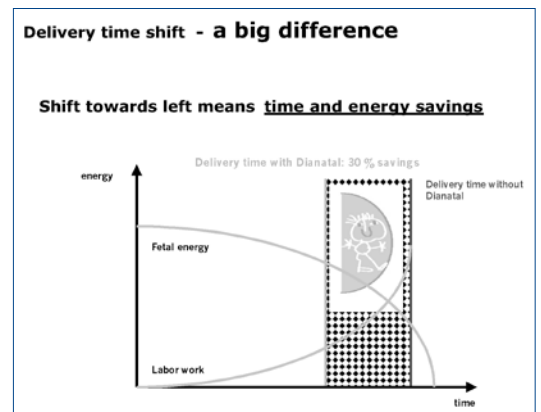
Long labor durations, increased maternal morbidity, increased operative deliveries (vaginal operative deliveries (VOD) and c-sections) and lacerations of the birth channel impair the outcome in primiparous women. Primiparous women are increasing in numbers as reflected in the actual birth rate of 1.4 per women (CH), leading to an increase in cesarean and vaginal operative procedure rates associated with increased morbidity. Recently a new polymeric gel, Dianatal®, was brought for the first time to the market to facilitate vaginal delivery by reducing the opposing friction force. Being introduced in the first century AC by Soranus of Ephesus¹ and being an established gold standard procedure in veterinary obstetrics², this new method can be seen as a novelty even in modern human obstetrics.

Assisting childbirth is one of the most difficult and challenging jobs in the medical profession. Obstetri-

cians and midwives must show extreme care during an infant's delivery. In many cases a couple of minutes can influence the maternal or newborn outcome substantially. But why is human labor so difficult and dangerous?

The human life history is characterized by several unusual features, including large babies with oversized heads, late puberty and menopause. Birth is difficult and painful in humans because the baby's head is very large and our upright posture necessitates a stiff pelvis.³

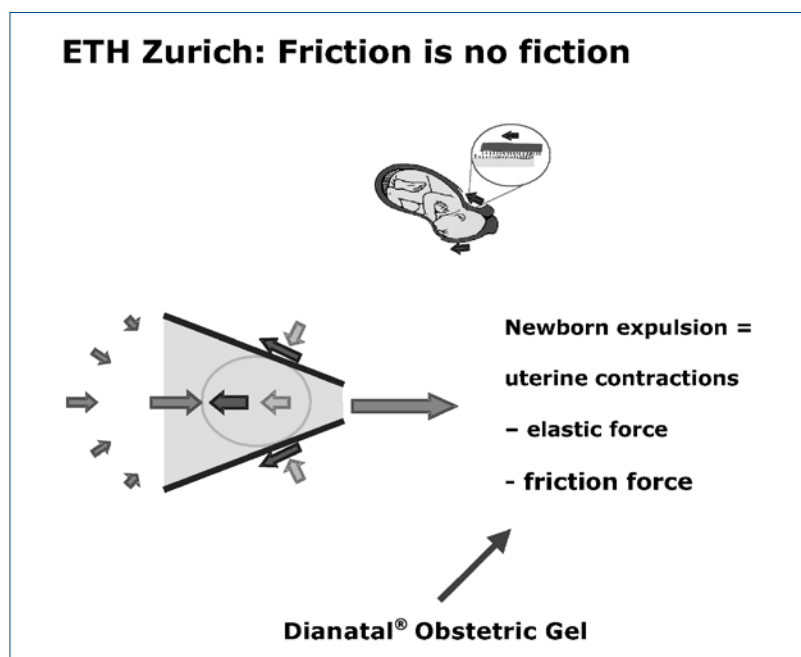
Skoyles suggested an explanation why modern humans do have larger brains than earlier humans such as homo erectus. As large brains cause problems in childbirth, infancy and locomotion, the advantage they offer must be substantial. Why did evolution increase brain size with its associated problems, when homo erectus can have a normal IQ without bigger brains?



Skoyles proposed that the advantage may be related to increased capacity for an aspect of intelligent behavior not measured by IQ tests but critical to the survival of our ancestors: the capacity to develop expertise.⁴

The consequences of vaginal childbirth on maternal and fetal morbidity are estimated to have a significant impact on public health expenditures. Although significant achievements have been made in the last decades with regards to managing childbirth complications and in regards to the reduction of maternal and newborn mortality, preventative procedures to make birth easier and to reduce morbidity are still lacking.

The action of Dianatal® is purely physical without pharmacological effects. It introduces a bioadhesive gliding film onto the birth canal and reduces the opposing friction forces to vaginal childbirth. Biomechanical investigation in a porcine birth model at the ETH Zurich proved that Dianatal® reduces dynamic and static friction significantly compared to water as a control (approximately 35% and 45%, respectively).⁵ In a randomized controlled trial in 251 primiparous women at two Swiss



Obstetric Departments it has been shown that Dianatal® significantly reduces labor duration by 30 % (stage I: 65 min, Stage II: 26 min) and reduces the risk of perineal lacerations twofold.⁶ In women delivering without epidural or amniotomy total labor duration has been significantly reduced up to 106 minutes.⁷

The introduction of Dianatal® Obstetric Gel into human obstetrics can be seen as an important milestone in optimizing the safety of vaginal childbirth and in improving the birthing experience. This innovation can further support the role of spontaneous vaginal delivery as being the route of first choice.

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