

Abstract Submitted
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The role of amniotic fluid in force transfer during human birth

ALEXA BAUMER, ANDREA LEHN, MEGAN LEFTWICH, The George Washington University — This study seeks to understand the fundamental fluid dynamic processes involved in human birth. We begin by examining the importance of amniotic fluid. This is done using two experimental techniques that approximate the laboring human uterus to different degrees of anatomical correctness. The first, in which a latex uterus is filled with fluid and a solid fetus is extracted, investigates the importance of both amniotic fluid properties and fetal position in the force required to remove a fetus. The second experiment simplifies the geometry of birth even more. In this case, a solid cylindrical rod is pulled through a highly flexible outer tube. The force to pull the inner cylinder as a function of the gap fluid properties is measured. By carefully controlling the fluid properties of the experiment, the study will provide further insight into the roles of amniotic fluid in human birth.

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