



J Nurse Midwifery. 1995 Jul-Aug;40(4):382-5.

**Station in early labor in nulliparous women at term.**

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Several authors of standard obstetric texts state that engagement occurs before the onset of labor in a majority of nulliparas at term, and failure of the fetal head to engage in early labor is a greater indicator for operative birth. A pilot clinical descriptive study was done at University Hospital, University of Medicine and Dentistry of New Jersey, in Newark to examine the birth outcomes of nulliparous women who arrived in early labor with an unengaged vertex presentation at term. For the study, 146 births were reviewed, and data from 101 vertex deliveries that met the study's criteria were compiled to test this hypothesis. The study results showed that in approximately 31% of the nulliparas, the fetal head was engaged. The incidence of the unengaged vertex in early labor in nulliparous women who met the study's criteria was found to be 69%. This factor alone did not predict birth outcome.

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Int J Biol Res Pregnancy. 1982;3(1):8-9.

**Incidence and significance of the unengaged fetal head in nulliparas in early labor.**

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Our clinical experience contradicts the traditional view that in the great majority of nulliparas with cephalic presentation the fetal head is engaged 1-2 weeks prior to onset of labor. In 75.4% of the 175 cases fetal head was not engaged in early labor. No significant statistical difference between the unengaged-head group and the engaged-head group was determined for incidence of vaginal delivery, cesarean section for cephalopelvic disproportion, midforceps delivery, mean and low Apgar scores, and birth weight. Thus, absence of engagement is not always indicative of pelvic contraction. Incidence of engagement may depend on the ethnic composition of the patient population.

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J Perinatol. 1998 Mar-Apr;18(2):122-5.

**Labor and delivery in nulliparous women who present with an unengaged fetal head.**

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OBJECTIVE: We assessed the relation of fetal station in early labor to subsequent patterns of dilation and descent and to the probability of cesarean delivery. STUDY DESIGN: We evaluated 132 nulliparous women who were in spontaneous latent-phase labor with singleton, vertex-presenting, term fetuses. For each participant, pertinent variables relating to labor characteristics and mode of delivery and newborn characteristics were recorded. Labor curves were drawn and analyzed. RESULTS: Of the 132 participants, 29 (22%) presented with an engaged fetal head, and 103 (78%) presented with an unengaged fetal head. In the unengaged group, 15 (11%) presented with a floating fetal head (-3 station or above), and 88 (67%) presented with a dipping fetal head (-2 or -1 station). A floating head in latent-phase labor conferred a longer second stage ( $p = 0.02$ ), a trend to more active-phase labor disorders ( $p = 0.06$ ), and a greater risk of cesarean delivery. Overall, 12 patients (9%) underwent primary cesarean section: 2 (6.9%) from the engaged group, 6 (6.8%) from the dipping group, and 4 (27%) from the floating group ( $p = 0.042$ ). CONCLUSION: Most nulliparous women in this study presented in labor with an unengaged fetal head. Those with a floating fetal head demonstrated higher rates of cesarean section than those with dipping or engaged heads in early labor. [Overall 90.3% delivered vaginally.]

Obstet Gynecol. 1999 Mar;93(3):329-31.

**Station at onset of active labor in nulliparous patients and risk of cesarean delivery.**

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OBJECTIVE: To determine whether term nulliparas with an unengaged vertex presentation at onset of active labor have a higher risk for cesarean delivery. METHODS: A retrospective cohort of 1250 randomly chosen nulliparous patients at 37-42 weeks' gestation who delivered between 1988 and 1989 were selected. Four hundred forty-seven patients were excluded because of nonvertex presentation, cesarean delivery before active phase of labor, multiple gestation, delivery at less than 37 weeks' or greater than 42 weeks' gestation, induction of labor, or missing charts. For the purpose of this study, active labor was defined as regular contractions with cervical dilatation of at least 3 cm. The station at onset of active labor was recorded. Engagement was considered to be at station 0 or below. RESULTS: Of the 803 patients in the study group, 567 presented unengaged [70.6%] and 236 patients presented engaged [29.4%]. The cesarean rates differed significantly between the two groups: 14% of those unengaged compared with 5% of those engaged ( $\chi^2 = 11.9$ ,  $P < .001$ ). After adjusting for confounding variables, engagement at the time of onset of active labor was associated with lower risk of cesarean delivery (odds ratio .512, 95% confidence interval .285, .922). CONCLUSION: Eighty-six percent [86%] of nulliparas with an unengaged vertex at onset of active labor delivered vaginally. Engaged vertex at the onset of active labor was associated with a lower risk of cesarean delivery.