

242 Fetal descent: what is normal station for a given cervical exam?

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OBJECTIVE: Modern data has improved our understanding of cervical dilation progress through the first stage of labor; modern data on fetal descent during the first stage is still needed. We aimed to estimate the expected station for a given cervical dilation during the first stage by parity.

STUDY DESIGN: We performed a retrospective cohort study of all consecutive women admitted for delivery at term (≥ 37 wks) who progressed to 10cm. Known anomalies were excluded. Detailed history, labor, and delivery information was collected, including all cervical exams to allow for complete reconstruction of first stage labor curves. Because it cannot be known when a fetus progresses from one dilation and station to the next, and only the exam time at which the progress is discovered is known, interval-censoring analysis was used to estimate the median station, and 5th and 95th percentile, at a given dilation by parity. Analysis was repeated, stratified by induction (compared to spontaneous labor).

RESULTS: Of 5,388 women, 1,992 were nulliparas (nullips) and 3,396 were multiparas (multips). Of these, 566 nullips and 1449 multips labored spontaneously. Overall, nullips tended to have a lower station than multips until late in the first stage. By 6cm, median station was 0 (-2, 1) for nullips and -1 (-3,1) for multips; by 8cm, 95% of nullips were at -1 station or lower. Considering only women who labor spontaneously, both nullips and multips had a median station of 0 during active labor (> 6cm) and 95% of all women were 0 station or lower at complete (Table).

CONCLUSION: Among women in first stage labor at term, there is wide variation in the expected station by increments of dilation. However, 95% of nullips entering active labor (6cm) had a fetal station of -2 or lower; above that should be considered abnormal.

Cervical dilation (cm)	Spontaneous Labor			
	Overall	STATION		P
		Nulliparous (n=566)	Multiparous (n=1449)	
	Median (5th, 95th)	Median (5th, 95th)	Median (5th, 95th)	
0	-3 (-3, -2)	--	-3 (-3, -3)	--
1	-3 (-3, 0)	-3 (-3, 1)	-3 (-3, 0)	0.69
2	-2 (-3, 0)	-2 (-3, 0)	-3 (-3, 0)	<0.01
3	-2 (-3, 0)	-2 (-3, 0)	-2 (-3, -1)	<0.01
4	-2 (-3, 0)	-2 (-3, 0)	-2 (-3, 0)	<0.01
5	-1 (-3, 0)	-1 (-3, 1)	-2 (-3, 0)	<0.01
6	-1 (-3, 1)	-1 (-2, 1)	-1 (-3, 1)	<0.01
7	0 (-3, 1)	0 (-2, 1)	0 (-3, 1)	<0.01
8	0 (-2, 1)	0 (-2, 1)	0 (-3, 1)	<0.01
9	1 (-1, 2)	1 (-1, 2)	0 (-2, 2)	<0.01
10	2 (0, 2)	2 (0, 2)	2 (0, 2)	0.86

243 Do we really need the 4th value of the 100-g 3-hour oral glucose tolerance test (OGTT)?

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OBJECTIVE: To test the use of a 100-g 2-hour OGTT for the diagnosis of GDM compared to "the gold standard" 100-g 3-hour OGTT.

STUDY DESIGN: 8589 Results of 100-g 3-hour OGTT's between the years 2006-2011 were obtained from the computerized data base of the obstetrics department in the Shaare Zedek Medical Center. By ignoring the 4th value of the test, we retrospectively created a 100-g 2-hour OGTT. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated for the 100-g 2-hour OGTT and compared to 100-g 3-hour OGTT.

RESULTS: Of the 8589 results 1779 (20.7%) met the criteria for the diagnosis of GDM (The test was considered positive if two threshold values of Carpenter & Coustan were met, or if one threshold value of the National Diabetes Data Group was met). When excluding the 4th value, 1665 (19.4%) cases met the same criteria for the diagnosis of GDM. The sensitivity, specificity, PPV and NPV of the 100-g 2-hour OGTT in compared to 100-g 3-hour OGTT were 93.6%, 100%, 100%, 98.4% respectively.

CONCLUSION: The use of the 100-g 2-hour OGTT for the diagnosis of GDM as compared to the 100-g 3-hour OGTT will reduce the test sensitivity to 93.6% but will save 33% of the time and up to 25% of the cost, while maintaining a high NPV of 98.4%. It still remains to be seen whether women whose diagnosis of GDM depends on the 4th value have different pregnancy outcomes compared to all other women diagnosed with GDM. Replacement of the 3-hour by 2-hour 100-g OGTT has the potential to improve system throughput if pregnancy outcomes are not compromised.

244 Risk of gestational diabetes mellitus analysed by the rate of weight gain before screening

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OBJECTIVE: While maternal obesity increases the risk of Gestational Diabetes Mellitus (GDM), there is little evidence that decreased Gestational Weight Gain (GWG) in obese women (according to the Institute of Medicine revised recommendations) improves glucose tolerance. Also, previous studies use Total GWG rather than the rate of GWG before the Glucose Tolerance Test (GTT) was performed. This prospective observational study compared the incidence of GDM in women with a GWG/week > the mean with that in women with a GWG/week < the mean before their GTT for each Body Mass Index (BMI) category.

STUDY DESIGN: All women had a dating ultrasound and weight and height measured in the first trimester. They were enrolled at their convenience when undergoing selective screening for GDM at 28 weeks gestation with a 100g oral GTT. Clinical and demographic details were recorded.

RESULTS: Of the 499 women, the mean age was 31.0 years and 39.5% (n=197) were primigravidas. The number of obese women was 35.7% (n=178) which was high because obesity is an indication for selective screening. The incidence of GDM was 16.2% in obese women compared with 10.4% in women with a normal BMI (p<0.05). The overall mean GWG/week was 0.45kg (p<0.05); with mean GWG/week being 0.5 kg in the normal and overweight BMI groups but only 0.4kg in the obese group. The risk of GDM analysed by the rate of GWG/week before the GTT is shown in the Table.

CONCLUSION: Although obese women put on less GWG/week before the GTT than non-obese women, they were more likely to develop GDM. In each BMI category, the risk of GDM was not significantly increased in women who put on more than the mean GWG/week before their GTT was performed, compared with women who put on less. Thus, to prevent GDM developing efforts should focus on modifying pre-pregnancy weight excess, rather than excessive GWG.

Risk of gestational diabetes mellitus analysed by mean GWG/week before screening

BMI Category	Total Abnormal GTT	<mean GWG/week	>mean GWG/week
Normal (n=182)	10.4% (n=19)	6.6% (n=12)	3.8% (n=7)
Overweight (n=138)	14% (n=20)	10% (n=14)	4% (n=6)
Obese (n=179)	16.2% (n=29)	7.8% (n=14)	8.4% (n=15)
Total (n=499)	13.6% (n=68)	8% (n=40)	5.6% (n=28)