

WHICH CHART AND WHICH CUT-POINT

Deciding on the INTERGROWTH, World Health Organization, or Hadlock fetal growth chart

Fetal growth charts are one of the main tools available to screen for fetal growth restriction. In recent years, several new fetal growth charts have been published, and it is not clear which chart best identifies high-risk fetuses in our British Columbia population.

Researchers at the University of British Columbia compared the INTERGROWTH-21st (INTERGROWTH), World Health Organization (WHO), and Hadlock fetal growth charts to determine how well different weight percentile cut points on each of the charts predict perinatal morbidity/mortality.



The study linked antenatal ultrasound measurements for 10,366 fetuses >28 weeks' gestation from the British Columbia Women's hospital ultrasound unit with birth records in the provincial perinatal database.

All charts performed similarly in predicting perinatal morbidity/mortality, even when evaluating multiple cut points. For example, the **10th percentile cut-point** had a sensitivity of 11% [95% CI: 8 to 14], 13% [95% CI 10 to 16], and 12% [95% CI 10 to 16] to detect fetuses with perinatal morbidity/mortality on the INTERGROWTH, WHO, and Hadlock charts, respectively. Deciding which cut-point and chart to use may be guided by other considerations such as impact on workflow and how the chart was derived.

	INTERGROWTH	WHO	Hadlock
Proportion of population \leq 10th centile	345 (3.3)	466 (4.5)	398 (3.9)
Absolute risk of morbidity/mortality for fetuses on the 10th centile, per 100 (95%CI)	10.5 (7.6, 12.9)	9.0 (6.7, 11.0)	10.1 (7.9, 12.2)
Increase in absolute risk of morbidity/mortality for fetuses on the 10th centile compared to those on the 50th centile (95% CI)	7.1 (4.0, 9.7)	5.5 (2.8, 7.7)	6.6 (4.4, 8.9)
Sensitivity of 10th centile cut point, %(95%CI)	11 (8, 14)	13 (10, 16)	12 (10, 16)
Specificity of 10th centile cut point, %(95% CI)	97 (97, 97)	96 (95, 96)	97 (96, 97)
Positive predictive value for the 10th centile cut point, %(95%CI)	15 (11, 19)	13 (10, 16)	15 (11, 18)
Negative predictive value for the 10th centile cut point, %(95%CI)	96 (95, 96)	96 (95, 96)	96 (95, 96)

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