Customised (GROW) vs Intergrowth-21st (IG21) Publications

Citation	Title	Study Population	Key Points
Anderson et al, AJOG 2016	INTERGROWTH-21st vs customized birthweight standards for identification of perinatal mortality and morbidity.	53,484, New Zealand	IG21 had disproportionality higher SGA rates among different ethnic groups, and failed to identify many at-risk SGA infants that were identified by GROW
<u>Savirón-Cornudella et al, JPM</u> 2017	Comparison of fetal weight distribution improved by paternal height by Spanish standard versus Intergrowth 21st standard	5,243, Spain	GROW had higher detection rate than IG21
Francis et al, AJOG 2018	Customized vs INTERGROWTH-21 st standards for the assessment of birthweight and stillbirth risk at term	1.25 million, 10 countries	IG21 standard mostly reflected differences in physiological pregnancy characteristics. GROW identified a greater number of SGA that are at increased risk of stillbirth.
Pritchard et al, JMFNM 2018	INTERGROWTH-21st compared with GROW customized centiles in the detection of adverse perinatal outcomes at term	71,487, Victoria, Australia	IG21 was less likely to identify obese women as SGA; GROW identifies additional cases that are at increased risk of adverse outcome.
Odibo et al, AOGS 2018	Customized fetal growth standard compared with the INTERGROWTH-21st century standard at predicting small-for-gestational-age neonates	1,054, USA	GROW detected more SGA neonates but was less specific.
Webster et al, UOG 2019	Impact of ethnicity on adverse perinatal outcome in women with chronic hypertension: a cohort study	4,481, UK	GROW had significantly higher sensitivity (40 vs 16%) identifying cases of NICU admission compared to IG21, with similar specificity.
Prichard et al, PLOS Med 2019	Identification of the optimal growth charts for use in a preterm population: An Australian state-wide retrospective cohort study.	28,968, Victoria, Australia	GROW better reflects fetal growth restriction within a pre-term population compared to Intergrowth-21.
Vieira et al, PLOS Med 2019	Determination of birth-weight centile thresholds associated with adverse perinatal outcomes using population, customised, and Intergrowth charts: A Swedish population-based cohort study	233,379, Sweden	GROW rates were consistent across centile bands while IG21 had a 3.1% SGA and 25.1% LGA rate. Chart specific thresholds are required.
Francis et al, BJOG 2019	Stillbirth risk and SGA rate in subgroups according to maternal size: comparison of GROW, IG21, and WHO fetal growth standards	1.25 million, 10 countries	SGA according to GROW reflects stillbirth rates, while SGA by IG21 reflects maternal size.
Cartwright et al, J Perinatol 2020	Neonatal morbidity and small and large size for gestation: a comparison of birthweight centiles	45,505, New Zealand	GROW centiles are more useful in identifying neonates at increased risk of morbidity

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Fernandez-Alba et al, BMC Pregnancy and Childbirth 2020	INTERGROWTH21st vs customized fetal growth curves in the assessment of the neonatal nutritional status: a retrospective cohort study of gestational diabetes	234 women with gestational diabetes (GDM)	Customised centiles are better than IG21 in identifying neonates with malnutrition after GDM pregnancies
Fay et al, AJOG MFM 2022	Customized GROW vs INTERGROWTH-21st birthweight standards to identify small for gestational age associated perinatal outcomes at term	92,622, USA	Customised GROW charts are better at identifying SGA birthweight associated with adverse perinatal outcomes. SGA according to the IG21 newborn standard misses many babies with increased risk.
Fernandez-Alba et al, BMC Pregnancy and Childbirth 2022	INTERGROWTH-21st versus a customized method for the prediction of neonatal nutritional status in hypertensive disorders of pregnancy	226 women with hypertensive disorders of pregnancy (HDP)	Customised centiles are better than IG21 in identifying neonates with malnutrition after HDP pregnancies
Gardosi et al, AJOG 2023	SB risk and small for gestational age according to Hadlock, Intergrowth-21 st , WHO, GROW fetal weight standards: analysis by maternal ethnicity and BMI	2.27 million, UK	Population-average fetal growth standards like Intergrowth 21 st hide the association between FGR and increased stillbirth risk in high BMI pregnancies. Customised assessment helps identify many additional at-risk cases, and reduces false positives that can result in unnecessary investigations.