Intergrowth-21st (IG21) vs other population-average standard publications

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Citation	Title	Study Population	Key Points
<u>Poon et al, UOG, 2016</u>	Birth weight in live births and stillbirths	92 018 uncomplicated pregnancies, UK	The IG21 standard underestimates SGA live births and stillbirths.
Liu et al, PLOS One, 2017	Evaluation of the INTERGROWTH-21 st project newborn standard for use in Canada	2.7M pregnancies, Canada	The centile distribution of IG21 newborn standard is left shifted compared to the Canadian reference.
<u>Cheng et al, UOG, 2018</u>	Prospective assessment of INTERGROWTH-21 st and World Health Organization estimated fetal weight reference curves	970 pregnancies, China	There was a marked difference between the fetal weight of the Chinese population and that of IG21.
Sletner et al, AOGS, 2018	Effects of applying universal fetal growth standards in a Scandinavian multi-ethnic population	823 pregnancies, Norway	Applying the same strict inclusion criteria as IG21 did not identify women with better health or less adverse perinatal outcomes
Tuzun et al, JMFNM, 2018	Comparison of INTERGROWTH-21 and Fenton growth standards to assess size at birth and extrauterine growth in very preterm infants	248 very preterm neonates, Turkey	The birthweight SGA rate was significantly lower (40.2 versus 31.5%, p<.001) with the INTERGROWTH-21st charts compared with the Fenton.
<u>Stampalija et al, EJOGRB,</u> 2020	Current use and performance of the different fetal growth charts in the Italian population	1426 uncomplicated pregnancies, Italy	Use of IG21 would result in underdiagnosis of SGA and overdiagnosis of LGA
<u>Lebrao et al, Matern Child</u> <u>Health J, 2020</u>	Is the Intrauterine INTERGROWTH-21 Growth Curve Better Than Fenton's for the Classification at Birth and Prediction of Postnatal Growth in Preterm Infants?	173 very preterm infants, Brazil	IG-21 and Fenton were similar for the classification of birth weight for gestational age in preterm infants
<u>Samarani et al, BMC Ped,</u> 2020	Comparative study between Fenton and intergrowth 21 charts in a sample of Lebanese premature babies	318 preterm NICU infants, Lebanon	Fenton predicted birthweight better than IG21
<u>Pimenta et al, Jornal de</u> <u>Pediatria, 2020</u>	Comparison of birth weight, length, and head circumference between the BRISA-RP and Intergrowth-21st cohorts	7702 neonates, Brazil	Newborns from Ribeirao Preto, were heavier when compared to IG21

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Reddy et al, JMFNM, 2021	Comparison of Fenton 2013 growth curves and Intergrowth-21 growth standards to assess the incidence of intrauterine growth restriction and extrauterine growth restriction in preterm neonates ≤32 weeks	603 very preterm neonates, India	NICU Infants identified as IUGR at birth by Intergrowth charts and not by Fenton growth charts had higher incidence of morbidities.
<u>Choi et al, UOG, 2021</u>	Performance of size birth-weight and estimated-fetal- weight standards for predicting adverse perinatal outcome: a 10 year nationwide population-based study	2.4M pregnancies, Australia	International standards may not be appropriate for multiethnic populations such as Australia
<u>Hocquette et al, Lancet Reg</u> <u>Health Eur, 2021</u>	International versus national growth charts for identifying small and large-for-gestational age newborns: a population-based study in 15 countries	1.4M pregnancies, France	IG21 risks underestimation of SGA births and overestimation of LGA birth, missing potential SGA linked mortality.
<u>Anand et al, Arch Dis Child</u> Fetal Neonatal Ed, 2022	Comparison of regional versus global growth charts for the classification of small-for-gestational age neonates	1367 pregnancies, India	Additional 'SGA' identified by IG21 was not at significant risk of morbidity. IG21 might over diagnose SGA in neonates from low/middle income countries
<u>Mtove et al, Malaria, 2022</u>	The choice of reference chart affects the strength of the association between malaria in pregnancy and small for gestational age: an individual participant data meta- analysis comparing the Intergrowth-21 with a Tanzanian birthweight chart	6236 neonates, Tanzania and Malawi	The prevalence of SGA may be overestimated and the impact of malaria in pregnancy underestimated when using Intergrowth-21
<u>Zhang et al, World J Pediatr,</u> 2023	Comparison of updated birth weight, length and head circumference charts by gestational age in China with the INTERGROWTH-21 st NCSS charts	24,375 uncomplicated pregnancies, China	Chinese birthweight charts were different from IG21 charts. Future adoption of IG-21 in a Chinese population could result in misclassification.
<u>Genowska et al, J Clin Med,</u> 2023	Reference Values for Birth Weight in Relation to Gestational Age in Poland and Comparison with the Global Percentile Standards	3.7M pregnancies, Poland	Polish local standards produce higher birthweights than those suggested by IG21. There should be caution when adopting IG-21 or WHO standards universally, as they may result in misclassifications of cut-off points.
Okido et al, RBGO, 2023	Prediction of Perinatal and Neurodevelopmental Outcomes in Newborns with a Birth Weight below the 3rd Percentile: Performance of Two International Curves - Prospective Cohort from a Brazilian City	967 neonates, Brazil	No significant difference found between IG21 and FMF charts
Starc et al, PLOS ONE, 2023	Extrauterine growth restriction in very low birth weight infants according to different growth charts: A retrospective 10 years observational study	228 vLBW infants, Italy	Intergrowth-21 charts identify less neonates as SGA when compared to INeS and Fenton charts