

Birth Weight Standards: How Israeli Singleton and Twin Fetuses Grow

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In this issue of *IMAJ*, Dollberg and co-workers [1] provide Israeli obstetricians, neonatologists, pediatricians and others with an invaluable resource that has previously not been available. They utilized a very large, population-based sample of live-born infants in order to construct intrauterine growth charts for Israeli infants, differentiated by gender and parity. This is an essential tool both for the assessment of intrauterine growth and as a basis for the investigation of growth disorders in childhood.

Charts of birth weight by gestational age in various populations have been published, and the differences in growth patterns between different reports are considerable, with discrepancies of over 300 g at 40 weeks [2]. In addition to these population differences, there are recognized limitations in currently available charts [3-14]. Some are hospital-based and not population-based, including, for example, infants from specific socioeconomic groups or infants born at high altitude. Others exclude infants with specific congenital problems affecting growth, and not all charts separate infants by gender and parity. Finally, some charts are rather old and may not reflect changes in the nutritional state of women of

childbearing age. For these reasons, the new Israeli charts should be used widely.

As Henry Kissinger once commented, "Each success only buys an admission ticket to a more difficult problem." The problems raised by Dollberg's study certainly warrant attention. In order to make a more complete assessment of intrauterine growth, additional anthropomorphic measurements, including supine length, head circumference and ponderal index (birth weight/length³) are required [15,16]. These measurements are particularly useful for the thorny question of defining small for gestational age in infants from multiple pregnancies. Unfortunately, these data are not collected by the Ministry of Health database and, indeed, are not universally measured in all infants. Perhaps the availability of Israeli weight charts will prove to be the catalyst for a collaborative effort to collect and analyze length and head circumference data.

Although the authors collected a robust overall sample size that provides validity, the numbers of singletons or multiples in the subgroups at 22-25 weeks are relatively small. In addition, the statutory requirement for reporting only infants of birth weight

above 500 g has artificially skewed the percentiles in these weeks. As such, it is hoped that in coming years, the authors may be able to improve the charts with a larger and more representative sample of the tiniest infants.

Israel is a world leader in the use of artificial reproductive technologies (5- to 12-fold higher than reported elsewhere) [17], and, as a result, our neonatology departments are bursting at the seams with premature infants from multiple pregnancies [18]. The new Israeli birth weight charts clearly define the differences in the pattern of intrauterine growth in singletons and multiples. Individual infant birth weights in this population diverge at around 30–31 weeks. The point of divergence has varied between studies from 28 to 36 weeks and therefore it is vital that these new charts be employed with particular vigilance in multiples [19,20].

Finally, the new charts show a peculiar distribution of weights whereby at each week, the lower percentiles are further from the mean than the upper percentiles. Previous studies have shown even distribution on both sides of the mean. This finding may suggest an increased degree of relative growth retardation in Israeli infants, although such a finding remains to be confirmed in further studies.

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