The Australasian Paediatric Endocrine Group (APEG) is the premier professional body representing paediatric endocrinology in Australasia. APEG is committed to high standards of clinical care, advocacy, education, stakeholder relationships, and research in paediatric endocrinology. It is a specialty society affiliated with the Royal Australasian College of Physicians.

1. Do not rely on random measures of circadian hormones for diagnostic purposes

Numerous hormones, such as growth hormone and testosterone, are subject to circadian rhythms. Relying on random measures of these hormones is therefore of limited diagnostic utility as their levels may peak and plateau at particular times throughout the day. Unless adjustments are made to take account of these circadian rhythms then random readings will not be sufficiently informative.

Supporting Evidence

2. Do not rely solely on bone age measurement for assessing growth in young children with short stature under 2 years of age

There is no consensus protocol on bone-age assessment of younger children and infants, particularly those under the age of two. Skeletal growth and maturation is most rapid in infants and toddlers, so accurate bone-age assessment in these children is challenging.

Of the bone-age measurement techniques available, there is a major inadequacy with one of the most used methods: the limited change in the appearance of the ossification centres of the hand/wrist change in the first months of life. A recent survey found much lower rates of confidence in the accuracy of this technique when applied to the one-to-three-year-old group. Although a recently reported and validated bone-age measurement technique based on fibular shaft length was found to outperform other methods, it still yielded significant errors when applied to infants (i.e. under one year).

Supporting Evidence
3. Do not routinely measure insulin-like growth factor binding protein 3 (IGFBP-3) for workup and diagnosis of childhood short stature

Particularly given its low sensitivity, insulin-like growth factor binding protein 3 (IGFBP-3) does not significantly contribute to the diagnosis of childhood short stature resulting from growth-hormone deficiency (GHD), which can lead to the under identification of GHD. It should therefore not be used as a routine measure for the workup and diagnosis of children with short stature. However, IGFBP-3 testing may have a role, along with IGF-1 testing, as an auxiliary diagnostic index for provocative testing.

Supporting Evidence


4. Do not initiate gonadotropin-releasing hormone (GnRH) analogue treatment in children outside of central precocious puberty, for the target outcome of delaying puberty and improving final adult height

While there is some evidence that the use of GnRH agonists can achieve improvements in height in females with early puberty, it is also associated with the development of polycystic ovary syndrome (PCOS) in adolescence and risks compromising bone health. Its use outside of clinical trials is not recommended. Given that the treatment duration must also be lengthy for its benefits to be manifested, its use is not recommended to augment height in adolescents with short stature and normally timed puberty.

Supporting evidence


5. Do not routinely prescribe aromatase inhibitors to promote growth in children with short stature

Aromatase inhibitors are used as adjuvant therapy for breast cancer. There is growing acceptance of their use to increase the adult height of children with short stature and some evidence that aromatase inhibitors can at least improve short-term growth outcomes. One recent clinical trial of aromatase inhibitors used in paediatric patients found them to be safe and effective. Even so, there is still little evidence overall that this treatment improves final adult height or is sufficiently safe. A 2015 Cochrane review found a significant proportion of pre-pubertal boys undergoing this treatment suffered mild morphological abnormalities of their vertebralae. More evidence is needed to demonstrate safety and efficacy of aromatase inhibitors before they can be routinely prescribed to promote growth in children with short stature.
Supporting evidence

- McGrath N, O’Grady MJ. Aromatase inhibitors for short stature in male children and adolescents. Cochrane Database of Systematic Reviews 2015; 10: CD010888..

How was this list created?

A working group of lead clinicians from APEG brainstormed an initial list of 11 low-value practices in paediatric endocrinology and a preliminary review of the evidence for each was undertaken. An online survey was developed based on these 11 recommendations along with a summary of the evidence for each, and circulated to APEG members for their feedback. For each recommendation, respondents were asked to assign a score from 1 to 5 (where 1 = strongly disagree and 5 = strongly agree) on two criteria: ‘The recommendation is evidence based’ and ‘The recommendation is relevant to paediatric endocrinology in Australasia’. Based on the recommendations which received the highest average total scores, and after a final in-depth review of the related evidence, the final top five were chosen and approved by APEG.