GPED Newsletter

Global Pediatric Endocrinology and Diabetes

Keeping you up to date on Global Health in Pediatric Endocrinology and Diabetes around the world

Welcome to GPED's 13th Newsletter!

Dr J von Oettingen

Welcome to our 2019 GPED fall newsletter!

Just in time before the European **Society for Pediatric Endocrinology** conference in Vienna, we are getting out this 13th issue, excited to promote the **GPED symposium** on sustainable access to affordable insulin. Join us for this informative and interactive session, followed by the **GPED annual general meeting**—see page 1 below for information on available positions.

In other news, our GPED's secretary general Jean-Pierre Chanoine spent the past few months of his sabbatical working at the World Health Organization headquarters in Geneva during. In this issue, he presents some of his work on three projects relevant to global pediatric endocrinology.

Inside this issue:

1. Growth curves: The essential "vital sign" in endocrinology, find out how you can create specific growth charts for your country, using original WHO data and formatting by Canadian colleagues (pages 2-3). **2. Congenital adrenal hyperplasia:** Join the discussion on whether and how we can adequately treat congenital adrenal hyperplasia in settings where hydrocortisone is unavailable. Do you agree? What is the practice in your country? What pro's and con's do you see? (page 4). **3. Congenital hyperinsulinism:** There's an important optimistic update for children, families and health care providers taking care of congenital hyperinsulinism: **Diazoxide will be included on the next WHO list of essential medicines**! Years of lobbying and a lengthy application to the WHO have finally paid out (page4).

Finally, our colleague Asma Deeb is pointing to current guidelines on diabetes management during Ramadan (page 5).

Enjoy the Read!!

Reminder: GPED@ESPE in Vienna

Friday September 20, 2019, 1400-1600, Room TBD

The Long Winding Road towards Sustainable Access to Affordable Insulin

Almost 100 years after its discovery, insulin remains out of reach for many children with Type 1 diabetes who live in LMICs. Join us to understand:

- Practical issues that make insulin access difficult in many countries
- What "prequalification" is and how WHO is working towards improved insulin access
- The role of national insulin manufacturers in local insulin supply in countries such as China

The symposium will include an interactive discussion where attendees can ask questions to the speakers

Positions available at GPED (Elections during AGM: Sept 20 1600-1700)

GPED is accepting nominations for the positions of:

Secretary-General, Treasurer and Secretary: send an Email to info@globalpedendo.org

WHO growth charts now available to GPED members in a new format!!
Get growth charts personalized with the name of your country
Available in English, French and Spanish

Dr JP Chanoine

Background: Growth monitoring is the single most useful tool for defining health and nutritional status in children at both the individual and population level. In 2006, the World Health Organization (WHO) released new international growth charts depicting the growth of children from birth to age five years, who had been raised in six different countries (Brazil, Ghana, India, Norway, Oman, USA). Because the infants and children included in this study were raised under optimal conditions (including exclusive breastfeeding for the first four to six months of life), these WHO growth charts represent the best description of physiological growth for children from birth to five years of age. As such, they depict the rate of growth that should serve as a goal for all healthy infants and children, regardless of ethnicity, socioeconomic status, and type of feeding. Because of their prescriptive nature, they are **growth standards**. In 2007, motivated by the global surge in childhood obesity, the WHO also released charts for monitoring the growth of older children and adolescents. These **reference curves** were constructed using updated and improved data collected by NCHS (National Center for Health Statistics) in 1977 and linked to the WHO Child Growth Standards curves.

Context: Using the original WHO data, Canada has **formatted the curves in order to obtain a design that is similar in appearance to growth charts used in many countries in the world and attractive for Canadian health professionals.** The set consists in 8 growth charts (4 for boys and 4 for girls): length and weight for age (0-2 years), weight for length and head circumference (0-2 years), height and weight for age (2-19 years), BMI for age (2-19 years).

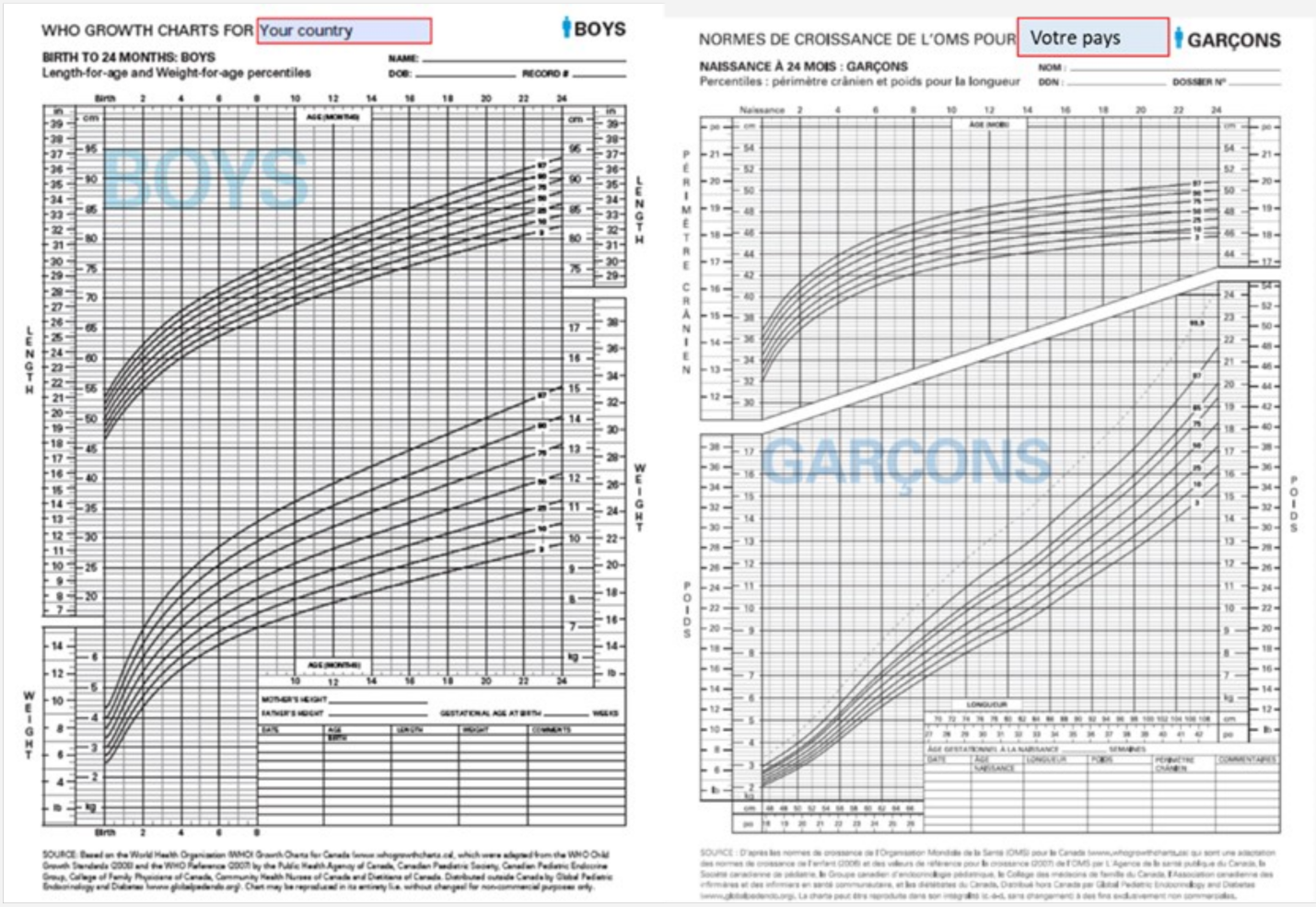
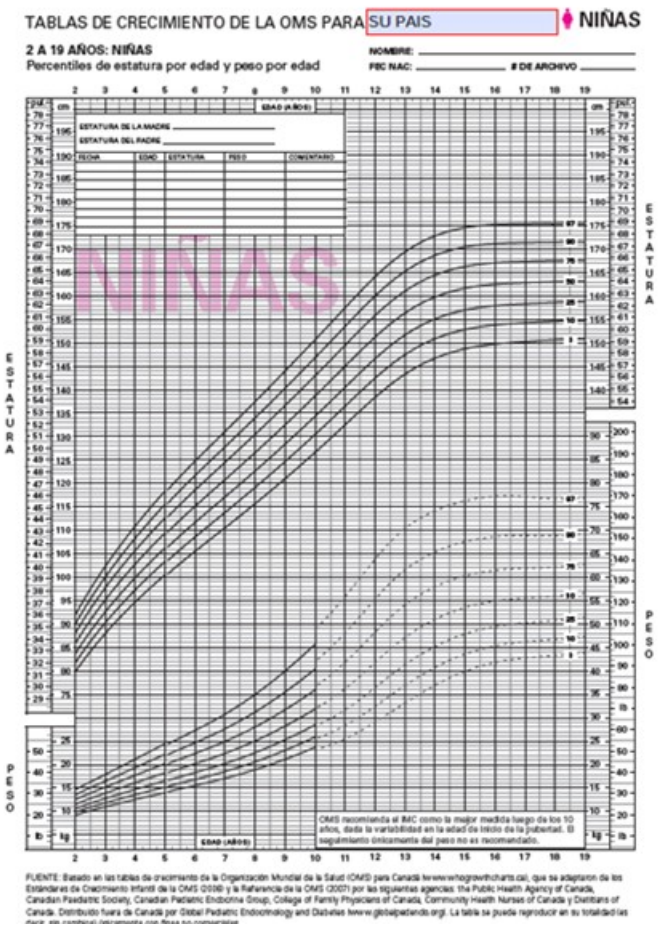


Figure 2: Length for age and weight for age chart for boys (0-2 years, English) (Left); Head circumference and length for weight chart for boys (French)



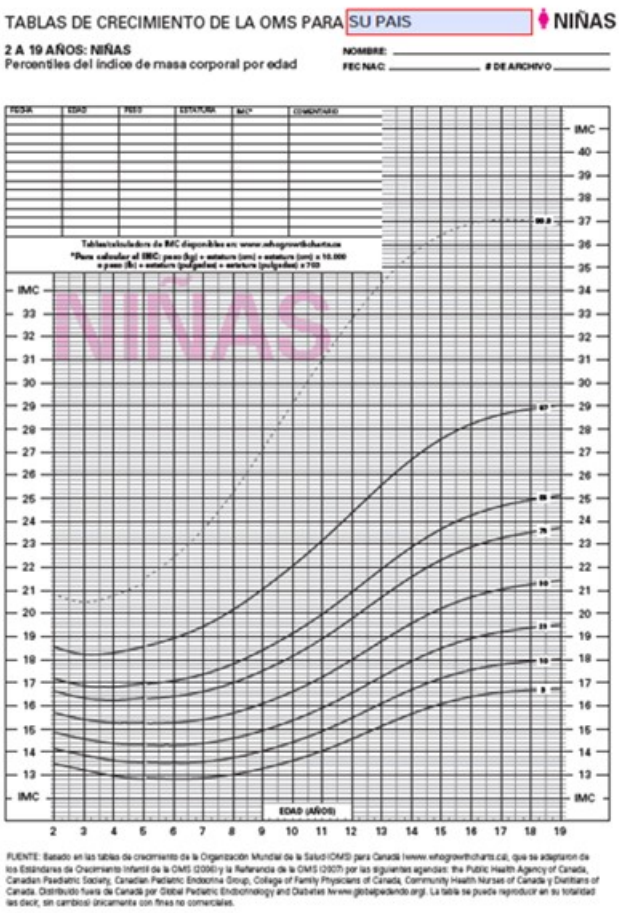


Figure 2: Height for age and weight for age chart for girls (2-19 years, Spanish) (Left); BMI for age chart for girls (2-19 years, Spanish)

The characteristics of the curves include:

- Use of percentiles
- Metric system (kg, cm) and US system (inches and pounds)
- Length/height for age and weight for age are present on the chart
- Weight for age curves are include for boys and girls older than 10 years. These data are presently not available on the charts proposed online by the WHO. Most health professionals agree that BMI is the easiest and most recognized marker to evaluate body mass, in particular during puberty, when weight changes are closely linked to pubertal development. However, many health professionals also like to have the possibility to plot weight for age in all children and adolescents. A Canadian working group has calculated and included weight percentiles on the weight for age chart for children and adolescents older than 10 years. These data are presented as a dotted line, reflecting the importance of primarily using BMI to evaluate body mass, as emphasized by the WHO.

GPED has received many requests to have these charts made widely available **under the name of the country where they would be used**. Thanks to Public Health Agency of Canada, Canadian group for Pediatric Endocrinology, Dietitians of Canada and with the permission from Dr Mercedes de Onis (WHO, who designed and performed the study for the WHO), this is now possible.

GPED is pleased to make growth charts based on WHO data available **in French, English or Spanish with the name of your country**. The figures provide examples of the chats in 3 languages and for both boys and girls.

ease contact Dr Jean-Pierre Chanoine, Secretary General, GPED at info@globalpedendo.org for more information.

Can CAH be effectively treated in children if hydrocortisone tablets are not available? Your feedback is welcome and will be published in the next newsletter

Dr JP Chanoine

The management of CAH requires administration of glucocorticoids and, when (sub)clinical salt wasting is present, fludrocortisone.
None of the synthetic glucocorticoids that are presently available mimic the physiological rhythm of endogenous cortisol (early morning peak followed by a progressive decrease over 24 hours).
Hydrocortisone is traditionally recommended as the first line treatment for glucocorticoid replacement in neonates and children. However, in many countries, hydrocortisone tablets are not available and other synthetic glucocorticoids need to be considered: prednisolone (PRDL), prednisone (PRED), dexamethasone (DEX) (1, 2, 3).
The greatest risk of using these more potent glucocorticoids is overtreatment, decreased height velocity and exogenous Cushing. However, when equivalence doses of 10 (HC) to 1 (PRED and PRDL) or 80-100 (DEX) to 1 (HC) are used, several authors have suggested that careful use of these more potent glucocorticoids can successfully achieve glucocorticoid replacement without side-effects.

	Advantages	Disadvantages
Hydrocortisone	- Mineralocorticoid effect at supraphysiological doses (useful if fludrocortisone is not available) - Less inhibition on growth	- Potential compliance issues when given 3 times a day - 10 mg tablets are usually the smallest tablets available - No commercially available oral solution - Pharmacy-made oral solution is described but stability needs to be tested locally (4)
Prednisolone/ Prednisone	- Given twice a day - Oral solution commercially available	- Negligible mineralocorticoid effect - High potency, risk of glucocorticoid overdosing
Dexamethasone	- Given once a day - Oral solution commercially available	- No mineralocorticoid effect - Very high potency, risk of glucocorticoid overdosing

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4. Manchanda A, Laracy M, Savji T, Bogner RH. Stability of an alcohol-free, dye-free hydrocortisone compounded (2 mg/ml) hydrocortisone oral solution

Diazoxide is now included in the 2019 WHO Essential Medicines List for Children

Diazoxide is a life-saving, essential medicine for the management of hypoglycemia secondary to hyperinsulinism. Pediatric endocrinologists around the world regularly report difficulties with access to diazoxide. Every 2 years, the WHO updates the WHO Model List of Essential Medicines for Adults and Children.
Following successful submission to WHO by GPED, diazoxide is now included in the 7th WHO EML for Children that was just released as an oral solution (50 mg/ml) and as tablets (50 mg). The following comment is included:

> *The Expert Committee recommended addition of diazoxide on the complementary list of the EMLc for the management of hypoglycaemia secondary to prolonged hyperinsulinism based on a positive benefit to risk ratio and for its impact on reducing the serious neurological consequences of untreated hyperinsulinism in newborns.*

What does that mean practically?

- Inclusion of diazoxide will be considered by WHO member States when they perform the next revision of their **National** List of Essential Medicines
- Although this is only one step towards access to diazoxide in your country, it will be useful to pediatric endocrinologists, patient organizations and advocates who initiate discussions with the National Ministry of Health about funding for diazoxide. This is a sign that diazoxide is now regarded by WHO as a medicine that should be considered as essential.

For information about EMLs: www.who.int/medicines/publications/essentialmedicines/en/
For support for patients with CHI, please contact Congenital Hyperinsulinism International: https://congenitalhi.org/

Management of diabetes during Ramadan

Dr Asma Deeb has worked with an international group of ISPAD (International Society for Pediatric and Adolescent Diabetes) diabetes specialists on the development of pediatric and adolescent guidelines for the management of diabetes during Ramadan. In addition, Dr Deeb is a coautor on two related sister publications. The first one summarizes the views on Ramadan fasting and examines the safety of fasting and its impact on diabetes control. The second one is a survey of the perceptions and practices related to the management of diabetes during Ramadan in children and adolescents by the members of the Arab Society for Paediatric Endocrinology and Diabetes (ASPED). Together, these three publications provide a multifaceted understanding of key aspects of the impact of Ramadan on diabetes management in Muslim children and adolescents who practice Ramadan fasting. These articles are also relevant to all pediatric endocrinologists involved in the care of Muslim children and adolescents.

Overall, a wide variation in the management of children and adolescents with diabetes during Ramadan was observed in ASPED countries emphasizing the need for guidelines. The guidelines start with an explanation of the history, importance and rationale for Ramadan in the life of a Muslim. It stresses that although observing the Ramadan fast is a key aspect of religious life, patients with chronic conditions such as diabetes are exempt from this obligation.

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Deeb A, Elbarbary N, Smart C, Beshyah SA, Habeb A, Kalra S, Al Alwan I, Babiker A, Al Amoudi R, Pulungan AB, Humayun K, Issa U, Yazid M, Sanhay R, Akanov Z, Krogvold L, de Beaufort C. ISPAD Clinical Practice Consensus Guidelines: Fasting Ramadan by young people with Diabetes. Pediatr Diabetes 2019 (in press)

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