

MALAYSIAN JOURNAL OF NUTRITION

Peer-reviewed Journal of the Nutrition Society of Malaysia
(*Persatuan & Pemakanan Malaysia*)
(<http://www.nutriweb.org.my>)

EDITOR

Khor Geok Lin, PhD
(*Professor, Universiti Putra Malaysia*)

EDITORIAL BOARD

Prof Hasanah Mohd Ghazali PhD
(*Faculty of Food Science and Biotechnology,
Universiti Putra Malaysia*)

Assoc Prof Mirnalini Kandiah PhD
(*Faculty of Medicine and Health Sciences,
Universiti Putra Malaysia*)

Assoc Prof Mustafa Ali Mohd PhD
(*Faculty of Medicine, Universiti Malaya*)

Tony Ng Kock Wai PhD
(*Cardiovascular Disease Unit,
Institute for Medical Research*)

Assoc Prof Poh Bee Koon PhD
(*Faculty of Allied Health Sciences,
Universiti Kebangsaan Malaysia*)

Prof Rabindarjeet Singh PhD
(*School of Medical Sciences,
Universiti Sains Malaysia*)

Safiah Mohd Yusof PhD
(*Family Health Development Division,
Ministry of Health Malaysia*)

Assoc Prof Sokhini Abdul Mutalib PhD
(*Faculty of Science,
International Islamic University Malaysia*)

Prof Wan Manan Wan Muda DrEd
(*School of Health Sciences,
Universiti Sains Malaysia*)

ADVISORY PANEL

Prof Barrie Margetts
(*University of Southampton, United
Kingdom*)

Prof Barry M Popkin
(*University of North Carolina,
United States*)

Prof Cecilia Florencio
(*University of the Philippines, Philippines*)

Prof Jung Hee Kim
(*Seoul Women's University, Korea*)

Prof Mark L. Wahlqvist
(*Monash University, Australia*)

Prof Mohd Ismail Noor
(*Universiti Kebangsaan Malaysia*)

Prof Datuk Dr Mohd Sham Kassim
(*Universiti Putra Malaysia*)

Assoc Prof Dr Pattanee Winichagoon
(*Mahidol University, Thailand*)

Assoc Prof Dr Widjaja Lukito
(*University of Indonesia, Indonesia*)

Prof Xiaoguang Yang
(*Chinese Academy of Preventive Medicine,
China*)

The journal

- § Serves as a forum for the sharing of research findings and information across broad areas in nutrition.
- § Publishes original research reports, topical article reviews, book reviews, case reports, short communications, invited editorials, and letters to the Editor.
- § Welcomes articles in nutrition and related fields such as dietetics, food science, biotechnology, public health and anthropology.

Subscriptions

Malaysian Journal of Nutrition is published twice a year, in March and September.

Please enter my subscription to **Malaysian Journal of Nutrition**, volume _____.

Subscription rates per year

	Malaysia	Other countries*
Individual	RM30.00	US\$30.00
Institution	RM60.00	US\$60.00

*Please add US\$5.00 per issue for airmail surcharge

Method of payment

Cheques (Malaysia only) or bank drafts should be made payable to Nutrition Society of Malaysia and addressed to:

Hon. Treasurer

Nutrition Society of Malaysia
Division of Human Nutrition
Institute for Medical Research
Jalan Pahang
50588 Kuala Lumpur, Malaysia

© Nutrition Society of Malaysia 2005

Printed by

Academe Art & Printing Services Sdn Bhd
7, Jalan Rajawali 1A
Bandar Puchong Jaya
Batu 8, Jalan Puchong
47100 Selangor DE

EDITORIAL

A new international growth reference for young children

At the 32nd Session of the Standing Committee on Nutrition (SCN) of the United Nations System in Brasilia, Brazil (14-18 March 2005), Professor Cutberto Garza, Director of the Food and Nutrition Programme, United Nations University (UNU), presented preliminary results from the World Health Organization (WHO) Multicentre Growth Reference Study (MGRS) for children up to 5 years of age.

The MGRS was part of a larger effort of the (WHO) to evaluate the interpretation and appropriate uses of anthropometric references. One significant issue that emerged from the comprehensive evaluation was that despite the well-established recognition for the nutritional and health benefits of breast-feeding, several studies reported negative deviations in growth patterns of healthy breast-fed infants when compared to the current reference (National Centre for Health Statistics (NCHS) Reference). The apparent poorer growth performance suggests that some women might be unable to produce sufficient milk to sustain the physiologic growth of their infants when they practice exclusive breastfeeding during the recommended period. This might have the undesirable consequence of encouraging premature cessation of breastfeeding and introduction of complementary foods. It is known that such a practice could have deleterious effects on the health and nutritional well-being of infants, especially in low-income families living in an environment with inadequate basic amenities.

The WHO and its principal partner the UNU designed the MGRS to provide data that describe how children should grow rather than merely describing their growth in a particular time and space. Through this prescriptive approach, the MGRS recruited children who met rigorous standards of health. They were not only free of debilitating diseases, but had to come from families that conformed to health recommendations including breastfeeding and smoking cessation.

Compared to the NCHS reference that is based on children from a single country, the MGRS involved an international group of children. Based on several considerations including survey results, epidemiological data, geographic distribution, presence of collaborative institutions, and availability of national and international funds, six countries were selected for the MGRS namely, Brazil (Pelotas), Ghana (Accra), India (New Delhi), Norway (Oslo), Oman (Muscat), and the United States (Davis). In each site, individual mothers and children were included based on pre-determined eligibility criteria of (i) no health, environment or economic constraints on growth (ii) mother willing to follow feeding recommendation (iii) term birth: gestational age ≥ 37 completed months and < 42 completed weeks (iv) single birth (v) absence of significant morbidity (vi) nonsmoking mother before and after delivery.

The references in the MGRS include not only weight-for-age, length/height-for-age and weight-for-height, but also body mass index (BMI)-for-age, mid-upper-arm circumference (MUAC), head circumference-for-age, subscapular skinfold-for-age, and triceps skinfold-for-age

As motor behaviour is an essential aspect of child development, the MGRS incorporated assessment of gross motor development as part of its longitudinal study using a standardized protocol for all the sites. Infants were followed from the age of 4 months until they could walk independently.

Four criteria were used to calculate sample size: the precision of a given centile at a particular age, the precision of the slope of the median curve over a given age range, the precision of the median curve overall and the influence of data at particular ages, and the precision of the correlation between measurements in the same subjects at different ages. When all considerations including refusals and attrition were factored in, the total MGRS sample size was about 8,500. The sample size exceeded the minimum required sample of 200 children for each sex and age group.

Implementation of the MGRS commenced with the enrollment of the first newborn in Pelota, Brazil on 1st July 1997. Data collection was completed with the last newborn enrolled in New Delhi, India by November 2003. A whole issue of the Food and Nutrition Bulletin (volume 25 supplement 1, March 2004) was devoted to the planning and implementation of the MGRS.

At the SCN meeting in Brasilia, it was shown that infants and young children grew at a similar velocity, whether from developing or developed participating countries, when given optimum care without health, economic and environmental constraints. The length/height-for-age of the children from all sites showed growth attainment curves from birth that were closely parallel to one another.

It is expected that the forthcoming WHO/MGRS growth curves will be used increasingly at least for children up to 5 years of age. Ideally, the MGRS should be expanded to include children up to 18 years old. The new international growth curve based on a prescriptive approach represents a challenging model for countries in setting achievable growth standards under optimum care conditions.

Khor Geok Lin
(Universiti Putra Malaysia)

Contents

Editorial	v
Original articles	
Postpartum Dietary Intakes and Food Taboos Among Chinese Women Attending Maternal and Child Health Clinics and Maternity Hospital, Kuala Lumpur <i>Poh Bee Koon, Wong Yuen Peng & Norimah A. Karim</i>	1
Growth and Morbidity in the First Three Months of Life Among Bangladeshi Infants Under Different Breastfeeding Regimens <i>Luthfor Ahmed, Khaleda Edib & Syed Nazmul Huda</i>	23
Dietary Fibre and Mineral Availability in Some Nigerian Fruit-Vegetable and Fruit-Legume Composite Diets <i>Olumuyiwa Sunday Falade, Oladipo Ayo Olatunbosun, Abiodun Adewale Oladipo, Ayo Tubosun & Steve Adeniyi Adewusi</i>	33
A Study of Blood Glucose Response Following Temperate and Tropical Fruit Ingestion in Healthy Adults <i>Barakatun Nisak Mohd Yusof, Ruzita Abd. Talib & Norimah A. Karim</i>	47
Serum Testosterone Levels and Body Weight Gain of Male Rabbits Fed with <i>Morinda citrifolia</i> Fruit Juice <i>Sukardi S, Yaakub H, Ganabadi S and Poon MS</i>	59
Short Communication	
Serum Micronutrient (α -tocopherol, retinol, copper, zinc) Status of Immuno-suppressed Rats <i>Sheikh Nazrul Islam, Parveen Begum and Monira Ahsan</i>	69
Supplement	
Abstracts of the 20th Scientific Conference of the Nutrition Society of Malaysia, 2005	S1
Acknowledgements	
Upcoming conferences	
Manuscript submission guidelines	

ACKNOWLEDGEMENTS

Appreciation is recorded to the following referees for their contribution towards the publication of Volume 11 Number 1 2005 of the Malaysian Journal of Nutrition

Mr Azmi Md. Yusof (Ministry of Health)
Prof Hasanah Mohd Ghazali (Universiti Putra Malaysia)
Assoc Prof Dr Jariah Masud (Universiti Putra Malaysia)
Mr Mahenderan Appukutty (Universiti Institut Teknologi MARA)
Dr Nik Mazlan Mamat (International Islamic University Malaysia)
Puan Nik Shanita Nik Safii (Universiti Kebangsaan Malaysia)
Ms Noor Safiza Mohd. Nor (Institute of Public Health)
Dr Noraini Abas (Universiti Kebangsaan Malaysia)
Dr Sharida bt Fakurazi (Universiti Putra Malaysia)
Dr Shaida Fariza Sulaiman (Universiti Sains Malaysia)
Prof Suriah Abdul Rahman (Universiti Kebangsaan Malaysia)
Ms Tan Yoke Hwa (Kuala Lumpur Hospital)
Dr Tee E Siong (Nutrition Society of Malaysia)
Prof Wan Manan Wan Muda (Universiti Sains Malaysia)

Upcoming Conferences

2005

**18th International Congress of Nutrition
Nutrition Safari for Innovative Solutions**

19-24 September, Durban, South Africa

Contact: safari@puk.ac.za

American Dietetic Association Annual Food and Nutrition Conference

22-25 Oct, St Louis, USA

Contact: www.eatright.org

ILSI 1st International Conference on Nutrigenomics - Opportunities in Asia

7-9 December, 2005, Singapore

Contact: www.ilsa.org

2006

**4th Asian Congress of Dietetics
Nutrition and Dietetics in a Borderless Society**

23-26 April, Manila, Philippines

Contact: ndap@l-next.net

6th international Conference on Dietary Assessment Methods

26-29 April, Copenhagen, Denmark

Contact: <http://www.icdam6.dk>

3rd Annual International Society of Sports Nutrition Conference and Expo

15-17 June, Las Vegas, United States

Contact: www.sportsnutritionssociety.org

10th International Congress of Obesity

3-8 September, Sydney, Australia

Contact: enquiries@ico2006.com

17th IUFost 13th World Congress of Food Science and Technology

17-21 September, Nantes, France

Contact: iufost@nantes.inra.fr

**Joint 8th IUNS-International Symposium on Clinical Nutrition and 5th Asia Pacific
Society of Clinical Nutrition Conference**

14-17 October, Hangzhou, China

Contact: <http://www.2006iccn.org>

The International Conference on Nutrigenomics and Gut Health

30 April-3 May, Auckland, New Zealand

Contact: www.nutrigenomics.org.nz