LactaWebinar

LactaWebinar in honor of World Breastfeeding Week 2022

Feeding preterm and low birth weight infants with breastmilk in diverse neonatal hospital settings

Thursday, 4 August 2022

This LactaWebinar is organized by The Global Health Network (University of Oxford) and LactaHub – A Resource for Evidence-based Breastfeeding Intelligence

THE GLOBAL HEALTH NETWORK
Enabling research by sharing knowledge

LactaHub
A resource for evidence-based breastfeeding intelligence

Technical information

Questions: If you are joining us on **Zoom**, please ask your question in the non-public Q&A section. If you are tuning in via The Global Health Network **Facebook** page, please send your question to The Global Health Network via Facebook Messenger. **We will answer as many questions as possible during the webinar Q&A.**

Technical issues: If you cannot hear or see us, please check your computer preferences, close other programs, and check your sound level. If issues persist, you might need to close and restart the Zoom meeting, or join via Facebook.

Knowledge sharing: In the spirit of open access and knowledge sharing, we are recording this meeting to make it accessible for a wider audience on LactaHub.

Video and audio: Your camera is automatically deactivated and all microphones are muted.

Today's agenda

5 min. **Welcome and housekeeping**

10 min. **Topic and expert introduction**
Professor Dr. Fook Choe Cheah

15 min. **Growth of preterm babies and the INTERGROWTH-21st Standards**
Dr. Adejumoke Idowu Ayede

15 min. **Expert conversation on human milk banking**
Gillian Weaver

15 min. **Expert conversation on training health professionals in NICU settings**
Professor Dr. Sushma Nangia

25 min. **Q&As**
Moderated by Lydia Boampong Owusu

5 min. **Closing**

This LactaWebinar is moderated by

Professor Dr. Fook Choe Cheah
Professor of Paediatrics in Neonatology, Faculty of Medicine, Universiti Kebangsaan Malaysia (UKM); Senior Consultant Neonatologist, Canselor Tuanku Muhriz Hospital (HCTM) and Children's Specialist Hospital (HPKK) of UKM in Kuala Lumpur, Malaysia; Adjunct Professor of Paediatrics in Neonatology Airlangga University, Surabaya, Indonesia

Lydia Boampong Owusu
Lecturer, Department of Nursing, Kwame Nkrumah University of Science and Technology (KNUST) Ghana; Part-time faculty at the Ghana College of Nurses and Midwives (GCNM); Registered Nurse, Specialised in Paediatric Nursing with Expertise in Newborn Care; Registered Dietitian

Topic and expert introduction

Professor Dr. Fook Choe Cheah

How can we help preterm and low birth weight infants receive breastmilk and attain healthy growth?

- Preterm and low birth weight babies in neonatal care settings benefit greatly from breastmilk …
- … yet getting breastmilk to these babies can be challenging
- Today's experts will share their specialized knowledge and practical experiences for overcoming common breastmilk feeding challenges
- We anticipate the discussion may illuminate universal knowledge gaps or areas for training – potential themes for future open access webinars

Introducing today's LactaWebinar experts

Dr. Adejumoke Idowu Ayede
Senior Lecturer and a Consultant Paediatrician in the Department of Paediatrics and Department of Epidemiology and Medical Statisitcs, College of Medicine, University College Hospital, Ibadan, Nigeria; Team Lead of the Newborn and Child Survival Research Consortium, Centre for African Newborn Health and Nutrition

Gillian Weaver
International Milk Banking Specialist and Consultant, London, UK; Co-founder of UK Association for Milk Banking and the European Milk Bank Association; Co-founder of Hearts Milk Bank and the Human Milk Foundation

Professor Dr. Sushma Nangia, MD, DM
Director Professor and Head, Department of Neonatology, Lady Hardinge Medical College and Kalawati Saran Children's Hospital, New Delhi, India

Growth of preterm babies and the INTERGROWTH-21st Standards

Dr. Adejumoke Idowu Ayede

Greetings from my institutions

Outline

- Definition of terms
- Memory lane of growth monitoring
- Growth in preterm babies
- Why growth monitoring?
- Growth assessment
- Types of growth charts
- INTERGROWTH-21st charts
- Institutional experiences
- Conclusions

Definition of terms

- Growth: a net increase in size or mass of tissues as a result of either multiplication of cells or increase in intracellular substance
- Fetal growth (fetal, placental and maternal factors)
- Postnatal growth (genetic potential, internal and external factors)
- A growth chart is a graphic design of a growth reference presented as a visual display for clinical use
- Growth reference is a statistical summary of anthropometry in a reference group of children
- Growth standard represents a health pattern of growth (ought to grow and not how they do grow)

Memory lane

- Count Philibert de Montbeillard (1720-1785) was the first to plot a child's body measurement on a chart to illustrate a pattern of growth
- George Buffon (1707-1788): the chart in his Histoire Naturelle, the first height growth curve
- Until 1970, no uniform population based and standardised charts

Growth monitoring in preterms

- **Why?**
  - Classification
  - Detect abnormal growth patterns including growth faltering
- **What?**
  - Weight
  - Length
  - Occipitofrontal circumference

Importance of growth monitoring in preterms

- **Hospital admission**
  - Rapid weight gain: fluid overload, catch up growth
  - Low gain: inadequate nutrition, illnesses
- **Neurodevelopmental effect**
- **Metabolic effect**
  - Overweight, obesity
  - Metabolic syndrome

Time schedule for monitoring

Measurement	Time frame	Frequency	No. of visits
Weight, length, head circumference	Birth	Once	1
	Weeks 2-8	Biweekly	4
	3-12 months	Monthly	10
	14-24 months	Bimonthly	6
Arm circumference, skin fold thickness	3-12 months	Monthly	10
	14-24 months	Bimonthly	6

Considerations for optimal nutrition

- Days to commence enteral feeds
- Oral immunotherapy with colostrum
- Minimal enteral nutrition
- Advancement of feeds
- Time to full enteral feeds
- Growth assessments & growth targets
- Use of parenteral nutrition
- Breastmilk banking
- Use of surrogate mothers
- Use of supplements

Growth charts

Intrauterine growth charts

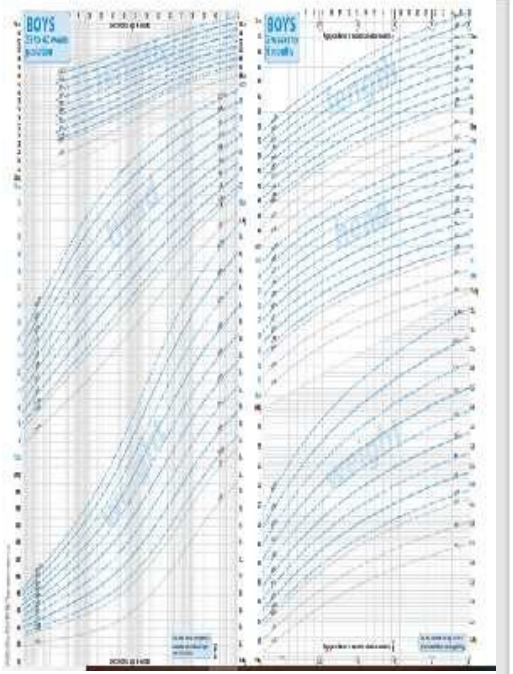
- Battaglia and Lubchenco 1967, USA
- Usher and Maclean 1969, Canada
- Babson and Benda 1976
- Fenton 2003, South Wales, Sweden, Canada
- Oslen 2010, USA
- Fenton 2013

Postnatal growth charts

- Berry 1997
- Ehrenkranz 1999
- CDC 2000
- WHO 2006
- INTERGROWTH-21st 2014

Growth charts

NICM



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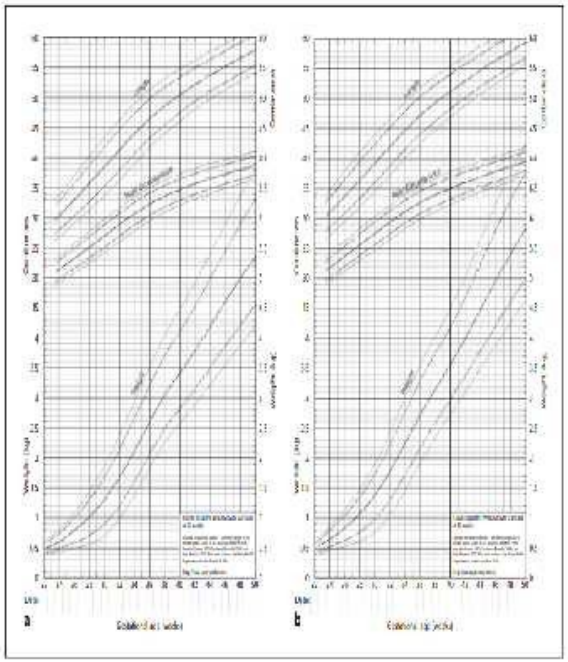

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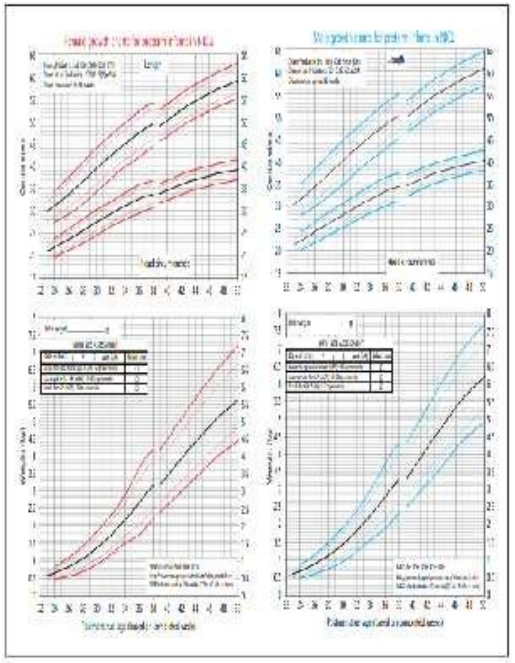
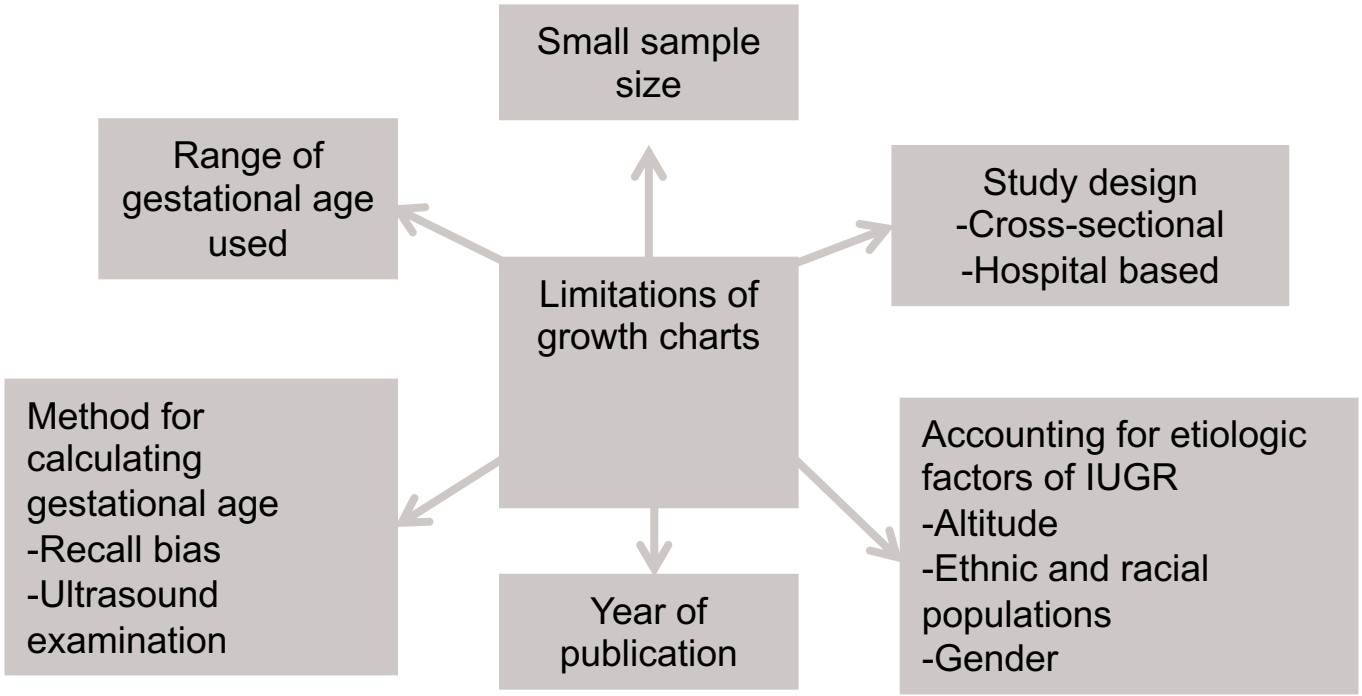


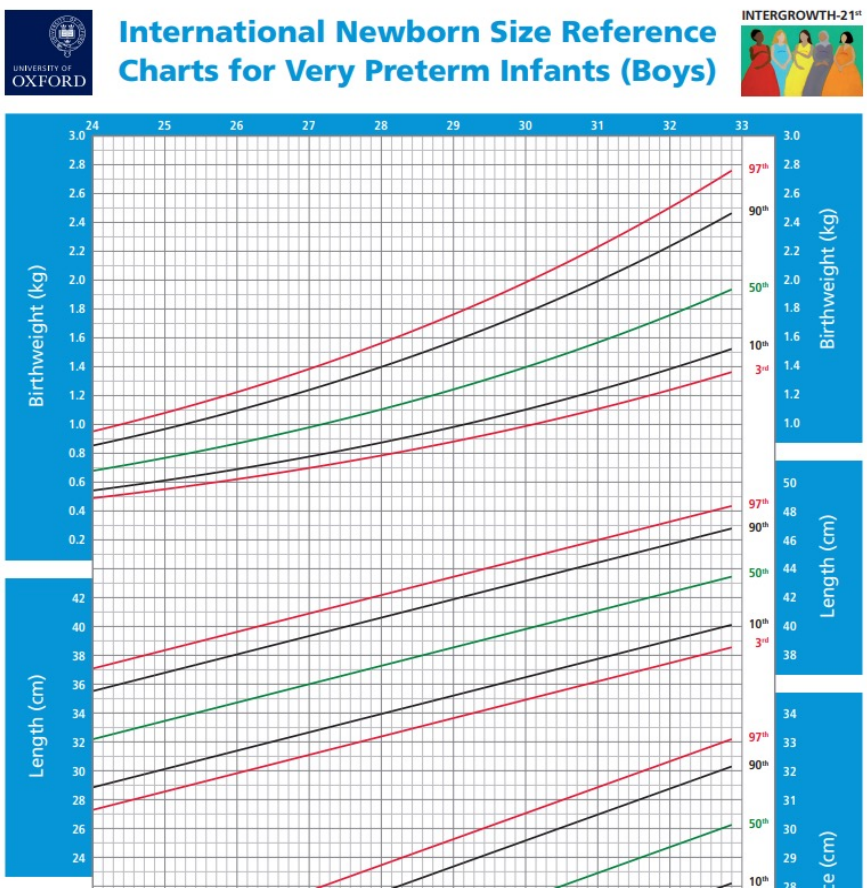
Limitations of growth charts

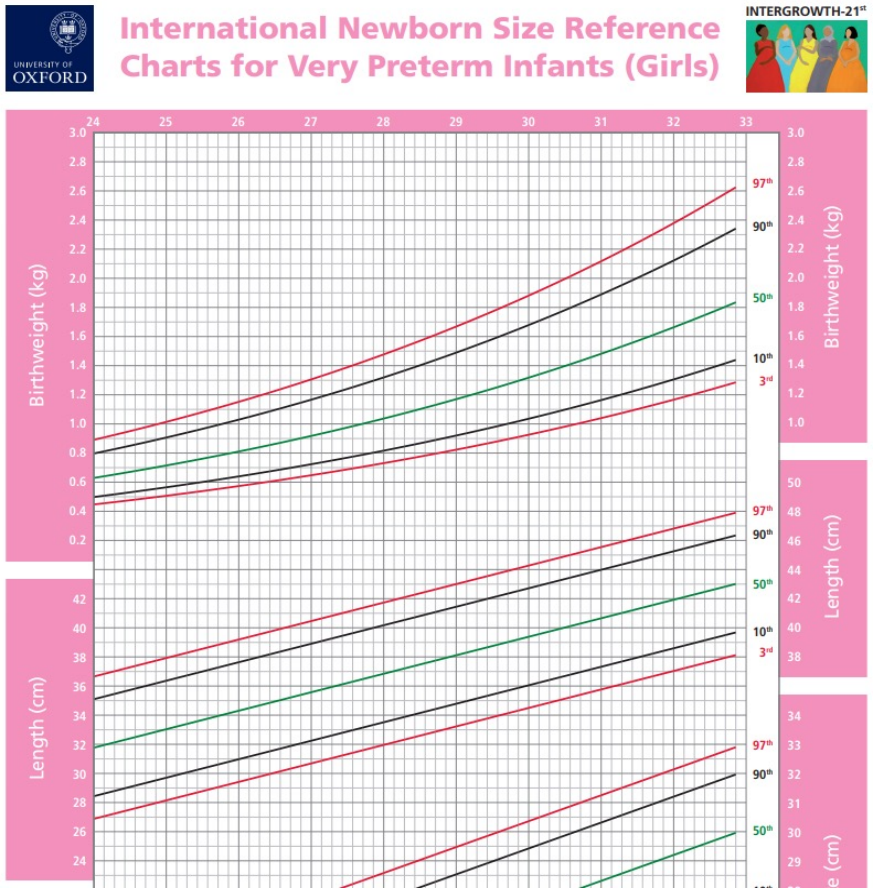


INTERGROWTH-21st Chart

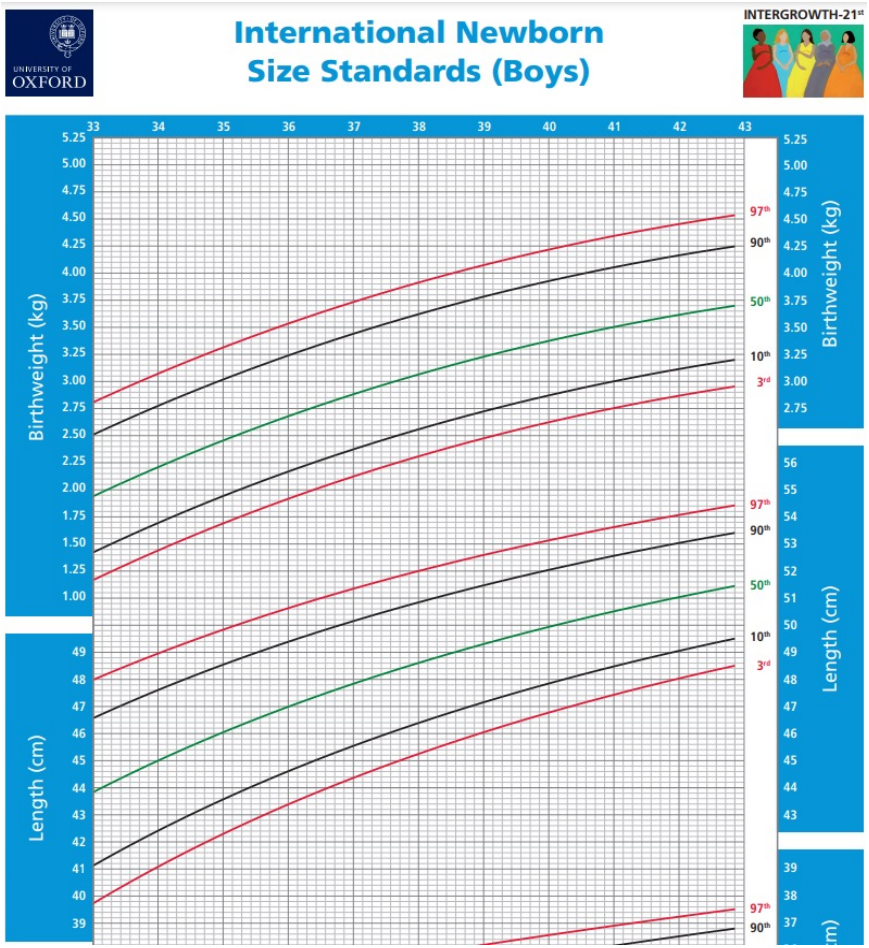
- International
- Cohort
- GA determined by USG
- Large population of 20,486 women between 14 May 2009 to 2 August 2013, 4,607 women with adequate health status and nutrition were recruited
- Clinical and population based
- Used similar instruments
- Link to WHO child growth standards

INTERGROWTH-21st chart for weight and height (very preterm infants)





INTERGROWTH-21st chart for weight and height (late preterm to term infants)



Components of INTERGROWTH study

- Preterm postnatal follow up study
- Newborn cross-sectional study
- 3rd, 10th , 50th, 90th and 97th centile for GA and sex
- An app for calculation of Z score and centiles
- Prescriptive approach
- Flows into WHO child growth standards

Limitations of INTERGROWTH-21st chart

- Few preterm despite large sample size
- Lower limit of the curve is at 33 weeks
- Too strict to be able to study preterm IUGR babies

Successes

International

- Sri Lanka was the first to adopt it
- Now over 125 countries have adopted it

National and Institutional

- Currently being used in some institutions in Nigeria
- Incorporated into routine practice since 2020 in UCH, Ibadan, Nigeria
- Consideration for inclusion into National Newborn Guidelines

Institutional experiences

- Awareness creation through 2 departmental grand rounds
- Training of nurses, paediatrics and neonatal residents
- Training of medical students
- Using INTERGROWTH-21st charts since 2020

Comments from using INTERGROWTH-21st charts

Research

- Semone Cerato et al 2020: significant reduction in the diagnosis of extra-uterine growth restriction when compared with commonly used cross-sectional charts
- Preterm postnatal growth standard proved to be consistent with WHO child charts

Direct End-Users

- Very unique methodology to define healthy babies
- GA assessment by USS
- Apps very user friendly
- A comprehensive tool
- Practical and accurate
- An improvement on previous charts

Resources for INTERGROWTH-21st charts

- INTERGROWTH-21st course on maternal, fetal and newborn growth monitoring - Global Health Training Centre
- Free access
- Free download
- Institutions can collaborate
- National coverage encouraged

Expert conversation on human milk banking

Gillian Weaver

Moderated by Professor Dr. Fook Choe Cheah

Expert conversation on training health professionals in NICU settings

Professor Dr. Sushma Nangia

Moderated by Professor Dr. Fook Choe Cheah

Q&As

Moderated by Lydia Boampong Owusu

Thank you very much!

The recording of this LactaWebinar will be available soon on:
www.LactaHub.org/LactaWebinar

We would like to thank all the expert participants for their time and dedication to bring you this free LactaWebinar.

LactaHub provides access to a wide range of valuable resources for health practitioners working in neonatal hospital settings

- **INTERGROWTH-21st** (www.lactahub.org/standards)
  The INTERGROWTH-21st Preterm Postnatal Growth Standards and Feeding Protocol, coordinated by the University of Oxford, are globally validated growth standards, feeding protocols, clinical tools and practical training materials created to improve preterm infant health outcomes globally.

- **Human Milk Banking Toolkit** (www.lactahub.org/tools)
  Compiled by a group of international experts, A Resource Toolkit for Establishing and Integrating Human Milk Banks is a compendium of standards and best practices that communities can follow to set up and operate safe, high-quality and sustainable human milk banks – a lifesaving alternative for babies that lack access to their own mothers' milk.

- **PROVIDE Training Compendium** (www.lactahub.org/nicu-training)
  This open access, evidence-based resource was produced by Rush University Medical Center to help healthcare professionals implement lifesaving mothers' own milk feeding practices for infants in intensive care worldwide. The PROVIDE Training Compendium features 7 categories and includes 34 educational videos and 23 information sheets in English and Spanish.