

The NGDS Pilot Project: Modeling Growth of the Pakistani Children

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The NGDS Pilot Project was initiated in 1998 under the directives of Governor Sindh/Chancellor, University of Karachi. It is a goodwill, public-service endeavor, conducted free of charge for the care and the development of young persons to prepare them mentally, physically and emotionally for rewarding careers in the civil and the military services. Growth of Pakistani children is modeled keeping in view the ICP (Infancy-Childhood-Puberty) model of human growth, put forward by Johan Karlberg[§] (Fig. 1). According to this model, height gain is continuous, but not smooth. Phase transitions from *infancy to childhood* and *childhood to puberty* are accompanied by abrupt changes in height velocity. There are 3 periods of rapid growth: (a) after conception, (b) start of ‘childhood curve’, (c) start of ‘puberty curve’. Children suffering from severe disease (e. g., diarrhea) during the weaning period may continue on the infancy curve a little longer, before picking up the childhood curve and, hence, end up shorter.

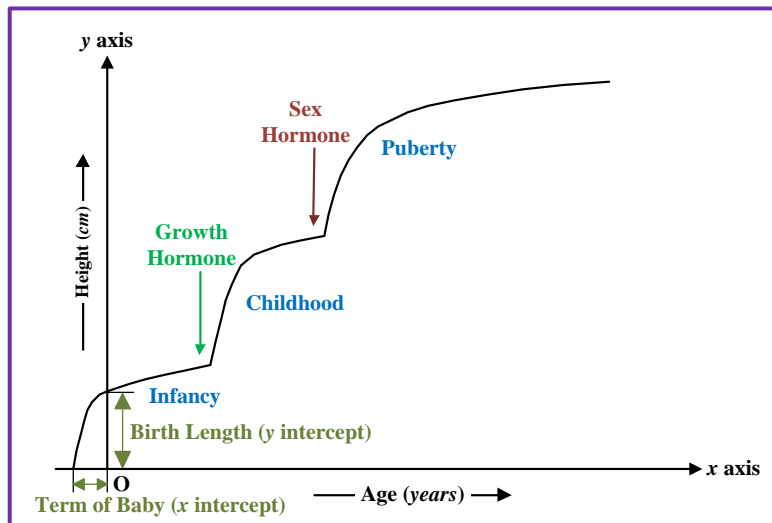


Fig.1. ICP model

Keywords: Anthropometry • Childhood • ICP model • Infancy • Puberty • Stature (Standing height) • Stunted child

Web address of this document: <https://www.ngds-ku.org/Presentations/Modeling.pdf>

[§]Karlberg was kind enough to send a copy of his thesis to SAK:

Karlberg, J. (1987). *Modeling of human growth*. PhD Dissertation, University of Göteborg, Göteborg, Sweden

A few months after this conference presentation, another paper was presented, which was compiled as full text:

Kamal, S. A., S. J. Alam and S. Firdous (2002, June 22). The NGDS Pilot Project: a software to analyze growth of a child (a telemedicine perspective). *National Telemedicine Conference Pakistan 2002*, Technology Resource Mobilization Unit (TreMU), Ministry of Science and Technology, Government of Pakistan, Islamabad, Pakistan, p. 2, full text: <https://www.ngds-ku.org/Papers/C52.pdf>

as well as a paper in peer-reviewed journal 2-year later:

Kamal, S. A., S. Firdous and S. J. Alam (2004). An investigation of growth profiles of the Pakistani children. *International Journal of Biology and Biotechnology*, **1** (4): 707-717, full text: <https://www.ngds-ku.org/Papers/J26.pdf>