

**UNIVERSITY OF NAIROBI**  
**INSTITUTE OF ANTHROPOLOGY, GENDER AND AFRICAN STUDIES**

**NAF 309: HUMAN GROWTH AND CONSTITUTION**

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**Introduction**

The study of human growth is important in elucidating the mechanisms of evolution. The evolution of morphological characters necessarily comes about through alterations in the inherited pattern of growth and development. Growth also occupies an important place in the study of the individual differences in form and function in humans. This course will examine the variation in body form and composition in the context of normal growth and evolutionary development.

**Unit 1: Introduction**

Definition

Nature of growth

Process of growth

**Unit 2: Factors influencing growth and maturation**

Prenatal period, postnatal period, puberty

Genetic and environmental controls

Socio-economic factors

Secular trend

**Unit 3: The Human growth curves**

Phases of growth: prenatal growth, postnatal growth, post-adolescent growth

Growth of tissues, growth of systems

**Unit 4: Indices of maturity**

Developmental age and the concept of physiological maturity

Skeletal/bone maturity

Dental maturity

Sexual age

Estimation of chronological age from anatomical data

**Unit 5: Analysis and classification of physique**

Classification of physique by external body form

Methods of classification: Viola, Kretschmer, Sheldon and factor analysis

Analysis of physique by tissue components: fat, muscle, skeleton

**Unit 6: Physique and relationship to function, disease and behaviour**

Function

Disease

Behaviour

**Unit 7: Body composition**

Definition

Models of body composition

Methods and application

## **Unit 8: Hominid Evolution**

The early hominids: *Australopithecines*

Intermediate hominids

Pleistocene hominid evolution

Modern humans

## **Unit 9: Anthropological genetics and people of the world**

General features of human variability

The molecular basis of variability

The 'race' concept

Africa, Europe, Asia, Australia and the Pacific, and the Americas

## **Suggested Readings**

Gilbert, S.F. (2010): *Developmental Biology*, 9th edition Sinauer Associates, Inc. Publishers

An attempt to integrate the new advances in molecular biology with cellular and organismal processes

Harrison, G.A., J.M. Tanner, D.R. Pilbeam and P.T. Baker (1988): *Human biology: an introduction to human evolution, variation, growth and adaptability*, 3<sup>rd</sup> edition. Oxford University Press, Oxford.

Preedy V.R. (ed.), *Handbook of Growth and Growth Monitoring in Health and Disease*, 73

DOI 10.1007/978-1-4419-1795-9\_5 Springer Science+Business Media, LLC 2012, **Available online through the University of Nairobi Library Website**

Roberts, K, Coen, R., Dean, C., Jones, J., Chater, K., Flavell, R., Wilkins, A. & Holder, N. (eds.): (1991) *Molecular and Cellular Basis of Pattern Formation*. The Company of Biologists Ltd. Cambridge.

Papers presented at the 9<sup>th</sup> John Innes Symposium: A joint meeting with the British Society for Developmental Biology at the University of East Anglia, September, 1990.

Reiss, M.J. (1989): *The Allometry of Growth and Reproduction*

A study of how behavioral, ecological, and evolutionary questions concerning various organisms can be addressed by a comparative analysis of their size and body weight.

Ulijaszek, S.J., F.E. Johnson and M.A. Preece (editors) (1998): *The Cambridge Encyclopedia of Human Growth and Development*. Cambridge University Press. Cambridge.

Contains various articles by various scholars on different aspects of human growth and constitution