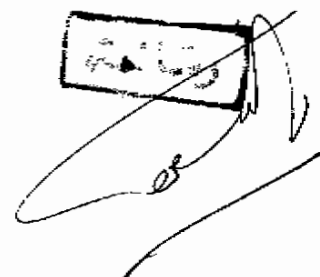


**GESTATIONAL AGE AND IT'S REFLECTION ON THE
PATTERN OF GROWTH IN CHILDREN IN THE
FIRST SIX MONTHS OF LIFE**

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W.A

BY
WAEEL ABBAS HELMI MAHMOUD
M.B.,B.Ch. (Ain Shams University)

Handwritten signature of the author.

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UNDER THE SUPERVISION OF

Prof. Dr. MAHMOUD EL-ESAWY

Lecturer Dr. MOHAMED SALAH EL-KHOLY

AND

Assistant Prof. Dr. FAROUK SHAHEN

FACULTY OF MEDICINE
AIN SHAMS UNIVERSITY

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Review of Literature

INTRODUCTION

Many studies were done in Egypt to show the growth pattern of children in their early life.

Abdou, et al. (1965) observed that children attending Maternity and child Health centers in Cairo (Egypt) showed a normal growth pattern if compared to Harvard's standards, however many showed deviation from the normal curve in the third month of life, a state which was attributed to infection and starting of weaning.

This study aims to find out the effect of gestational age on the growth pattern in the early life of infants.

GROWTH

Growth may be defined as continuous increase in total mass of an organism resulting from an increase in total number of cells and in the size of the individual cell, and reflected by gain in weight and enlargement in linear dimensions (Abbassy, et al, 1972).

Development is the maturation of organs in their quality than quantity or size. It implies learning ability, acquisition of skills and adaptability to stress (El-Behairy, et al, 1977).

Growth and development are continuous dynamic process occuring from conception to maturity and takes place in an orderly sequence that is approximately the same for all individuals. At any particular age, however wide variations among normal children reflect the responses of growing individuals to numberless hereditary and environmental factors (Kempe and silver, 1980).

Anthropometry appears to be of great value as it detect deviation from the usual growth pattern characteristic of the growing period (Jelliffe, 1971).

Growth is not uniform throughout life. There are periods of rapid and others of slowing down of the rate of growth. The influencing factors in each era differ in their nature and/or the extent of their effect.

The followings are the main eras of growth:

- (1) Intrauterine life is the major era of maternal influence on growth (Davis and Dobbing, 1974).
- (2) Infancy is the era of changing growth rate in which infants shift from growth rate that is - predominantly determined by maternal factors to one that is increasingly related to his own genetic background. Infants who are relatively small at birth but whose genetic background indicates larger size begin their correlation towards the new growth rate soon after birth. By 4-12 months they have achieved a new channel of growth (Smith, et al, 1976).
- (3) Childhood is the era of stable growth, the child grows at a fairly consistent rate of 5 - 7.5 cm/ year and there is gradual deceleration of linear growth rate and an acceleration of weight gain (Habicht, et al, 1974).

(4) Adolescence is the era of sex hormone induced shifting growth, the females mature more rapidly than males throughout childhood. Most linear growth has been achieved by the age of 18 years (Roche and Davila, 1972).

Carefully obtained measurements of height, weight and skull circumference are important for the evaluation of both normal infants and those who present with problems of growth retardation (Abbassy, et al, 1972). Brundtland,(1975) stated that weight is better indicator of acute changes but more difficult to interpret than stature, weight is easier to be measured than stature but less useful for growth assessment as it fluctuates markedly in health and in diseases.

The growth rate in height is not constant throughout childhood (Jolly, 1981). The newborn is found to be growing at a very fast rate. Although the infant is still growing very fast during his first two years, the rate is falling sharply all the time. From the age of 3 - 10 years, growth in height is comparatively slow and steady, almost reaching it's slowest period of all just before the onset of puberty. (Tanner, 1984). The adolescent growth spurt commences just before puberty. The adolescent growth spurt of

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girls occur two years earlier than that of boys. (Tanner, 1984). This rapid rate continues during puberty and is followed by a sharp deceleration, falling to Zero when adult status is reached (Jolly, 1981).

Body weight, body dimensions and the weight of the organs of digestion, respiration, circulation and excretion follow the characteristic general growth cycle or pattern. This cycle is characterised by rapid rate of growth during fetal period, moderate deceleration of the rate of growth after birth particularly after the first year, further deceleration of the rate of growth from the fourth year until adolescence and finally another period of rapid rate of growth during adolescence. (Abbassy, et al, 1972).

Other systems and organs of the body grow quite differently, most notably the brain, reproductive organs, the lymphoid tissue and the subcutaneous fat. (Tanner, 1984).

The human brain growth spurt begins in mid pregnancy and is nearly complete by the fourth year of