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Q6(c)

Discuss different factors affecting growth and development in human beings.

UPSC Civil Services Mains 2016 · Anthropology GS 1 · 15 marks · Factors affecting growth and development

Factors affecting growth and development: genetic, environmental, biochemical, nutritional, cultural and socio-economic.

Core demand of the question

- Discuss different factors affecting growth and development in human beings
- Write about 200 words for 15 marks

Revision summary

Genes and hormones set tempo and a stature range.

Nutrition and infection decide whether that range is reached.

Altitude, toxins, and workload add environmental load.

Secular trend and feeding bias are cultural-historical factors.

Tanner charts make the factors visible as velocity.

Introduction

Growth is increase in size. Development is change in proportion, maturity, and function. Both answer to genes, hormones, nutrition, disease, and the social house.

Body**Genetic and endocrine**

- Polygenic stature, sex chromosomes, and syndromes such as **Turner** set a range.
- **GH**, thyroid, and sex steroids time the infant, childhood, and adolescent spurts that **Tanner** charted.

Nutrition and disease

- Protein-energy lack, **iodine**, iron, and zinc deficits stunt. Infection and diarrhoea cut velocity.
- **Catch-up** growth can occur if the insult ends early.

Environment and culture

- Altitude, climate, and workload shape chest and muscle. Prenatal smoking and alcohol harm.
- **Secular trend**: better food and sanitation raise adult height across generations.
- Gender bias in feeding, as in some Indian households, is a cultural growth factor.
- Emotion and deprivation, as in neglected children, also flatten curves.

Method note

- Longitudinal studies separate tempo from size. One school weighing cannot.

Flow diagram

Growth development -> Genes hormones
Growth development -> Nutrition infection
Growth development -> Care gender class

Conclusion

Human growth is gene and hormone range filled or emptied by food, infection, altitude, and care. Anthropology watches the household as much as the endocrine axis.

Facts & figures

Tanner

Growth charts and adolescent spurt as the clinical-anthropological standard.

Secular trend

Rising height with public health, not a new race.

Catch-up

Accelerated growth after a finite insult.

Iodine

Deficiency impairs development of brain and stature in endemic belts.

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