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Q7(c)

What is Anthropometry? Discuss its role in assessing the nutritional status and sports capability of a person

UPSC Civil Services Mains 2021 · Anthropology GS 1 · 15 marks · Applications of Anthropology

12. Applications of Anthropology: Anthropology of sports, Nutritional anthropology, Anthropology in designing of defence and other equipments, Forensic Anthropology, Methods and principles of personal identification and reconstruction, Applied human genetics-Paternity diagnosis, genetic counselling and eugenics, DNA technology in diseases and medicine, serogenetics and cytogenetics in reproductive biology.

Core demand of the question

- Write a note on anthropometry and its role in assessing nutritional status and sports capability
- Write about 200 words for 15 marks

Revision summary

Anthropometry is standardised body measurement.

Nutrition uses height, weight, arm circumference, and z-scores.

Stunting and wasting separate chronic from acute lack.

Sport uses somatotype and proportions as one input beside physiology.

Boas's plasticity warning still forbids racial misuse.

Introduction

Anthropometry is the standardised measurement of the human body. It is a cheap, repeatable tool for nutrition and for the morphology of sport, not a return to racial typing.

Body

Method

- Height, weight, sitting height, circumferences, and skinfolds follow **Martin** landmarks and **Tanner** growth logic.
- Indices include **BMI**, waist-hip ratio, and mid-upper-arm circumference. In children, z-scores against WHO or ICMR references flag **stunting** and wasting.
- **Boas** already used anthropometry to show plasticity. That is the opposite of a fixed race chart.

Nutritional status

- **Stunting** (low height-for-age) records chronic lack. Wasting (low weight-for-height) records acute lack. Underweight mixes both.
- Skinfolds and arm muscle area estimate fat and protein stores. High **BMI** can hide micronutrient lack.
- Community surveys in India still rely on these measures because they travel to the village.

Sports capability

- Somatotypes after **Sheldon**, later Heath-Carter, sort endomorphy, mesomorphy, and ectomorphy. Sprinters and weightlifters cluster differently from distance runners.
- Limb length, sitting-height ratio, and grip or reach help selection. They do not replace VO2 max, skill, or training.
- Population means, as in some **Inuit** or high-altitude chests, are starting points, not destiny. Nutrition in childhood writes the adult athlete as much as a gene.

Ethic

- Use anthropometry for health and performance. Do not revive it as a ladder of peoples.

Flow diagram

Anthropometry -> Stunting wasting BMI

Anthropometry -> Somatotype limb ratios

Stunting wasting BMI -> WHO ICMR charts

Somatotype limb ratios -> Training skill physiology

Conclusion

Anthropometry assesses growth, undernutrition, and sport build through standardised sizes. It is a bio-cultural instrument when references and training are named, not a race science.

Facts & figures

Tanner

Growth charts and stages that made child anthropometry clinically usable.

BMI

Weight over height squared; a population screen, weak on athletes with high muscle.

Heath-Carter

Anthropometric somatotype used in sports morphology.

Stunting

Low height-for-age; a UN and Indian public-health marker of chronic undernutrition.

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