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Q5(c)

Stages of human pre-natal development

UPSC Civil Services Mains 2022 · Anthropology GS 1 · 10 marks · Factors affecting growth and development

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

Core demand of the question

- Write a note on stages of human pre-natal development
- Keep the note to a 10-mark length of about 150 words

Revision summary

Prenatal life is germinal, embryonic, then foetal.

Implantation occupies the first two weeks.

Organ formation in weeks 3-8 is the main teratogen window.

The **foetal period** is growth and maturation until birth.

Nutrition and infection in each stage leave different adult traces.

Introduction

Human prenatal life is divided by weeks into germinal, embryonic, and foetal stages. Anthropology uses the calendar to read teratogens, nutrition, and birth timing.

Body

The stages

- **Germinal (0-2 weeks):** fertilisation, zygote, morula, blastocyst, implantation. **Hertig** and later embryology mapped this in the uterus.
- **Embryonic (3-8 weeks):** gastrulation, neurulation, and organ primordia. This is the high-risk window for rubella, alcohol, and folate-sensitive neural-tube defects.
- **Foetal (9 weeks to birth):** growth, lung and brain maturation, and fat stores. **Tanner** and auxology treat this as the first growth phase.

Why it matters

- A 40-week obstetric calendar is a cultural as well as a biological fact. Prematurity and intrauterine growth restriction later show in adult stature studies.
- Prenatal stages are not a miniature adult. They are a sequence of sensitive periods.

Flow diagram

Germinal implant -> Embryo organs
Embryo organs -> Foetus growth
Embryo organs -> Teratogen window

Conclusion

Germinal, embryonic, and foetal stages are the working clock of human prenatal life. Risk and growth do not spread evenly across that clock.

Facts & figures

Embryonic period

Roughly weeks 3 to 8, when major organs are laid down and teratogenic risk peaks.

Neural tube

Closes in the embryonic period; folate status is a public-health lever.

Foetal period

From week 9, dominated by size, lung readiness, and brain growth.

Tanner

Placed prenatal growth at the start of the human growth curve used in anthropology.

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