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Q5(b)

The losses and gains of erect posture

UPSC Civil Services Mains 2021 · Anthropology GS 1 · 10 marks · Characteristics of Primates

1.5 Characteristics of Primates; Evolutionary Trend and Primate Taxonomy; Primate Adaptations; (Arboreal and Terrestrial) Primate Taxonomy; Primate Behaviour; Tertiary and Quaternary fossil primates; Living Major Primates; Comparative Anatomy of Man and Apes; Skeletal changes due to erect posture and its implications.

Core demand of the question

- Write a note on the losses and gains of erect posture
- Keep the note to a 10-mark length of about 150 words

Revision summary

Erect posture frees the hands for tools and carrying.

It favours endurance walking and a high visual field.

Costs include lumbar strain, difficult birth, and venous problems.

The **obstetric dilemma** pits a narrow pelvis against a large brain.

Selection kept the bargain because making and ranging paid.

Introduction

Bipedal erect posture is the hominin hallmark. It freed the hands and strained the spine, pelvis, and birth canal. Gains and losses are one design.

Body

Gains

- Hands free for tools, carrying, and gesture. **Washburn** and **Darwin** already tied bipedalism to culture.
- A high, scanning eye-line and endurance walking, later used by **Homo erectus** on open landscapes.
- **Thermoregulation in savanna sun is argued:** less surface to noon radiation, more sweating skin.

Losses

- Lumbar **lordosis**, slipped discs, and osteoarthritis of the lower back and knees.
- **A narrow pelvic inlet versus a large neonatal brain:** the **obstetric dilemma**, with rotational birth and risk to mother and child.
- Inguinal hernia, varicose veins, and haemorrhoids from vertical viscera and valves.
- Foot arches and fallen arches; a locked knee that saves energy but fails in injury.

Balance

- Natural selection kept the posture because foraging and making paid more than a perfect back.

Flow diagram

Bipedalism -> Hands tools endurance
Bipedalism -> Spine pelvis veins feet
Spine pelvis veins feet -> Obstetric dilemma

Conclusion

Erect posture bought tools, range, and a scanning stance. It cost backs, births, and veins. The human body is that bargain.

Facts & figures

Washburn

Linked bipedalism, tools, and hunting in the new physical anthropology.

Obstetric dilemma

Trade-off between bipedal pelvis and encephalised birth, still debated with energetics models.

Lordosis

Lumbar curve that stacks the trunk over the hips and predisposes to back pain.

Erectus

Long-legged bipedalism of Homo erectus shows the gain of range after the first hominin steps.