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**Sacral curvature and supine posture.**

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Abstract

Sacral curvature (SC), represented by the angle between the first and the last **sacral** vertebrae, is a feature that differentiates the human pelvis from that of other animals. The **sacral curvature** was measured and studied in 14 cebids, 31 cercopithecids, 17 hylobatids, 85 pongids, 23 normal human children, 15 children with orthopedic handicaps, 49 normal adult human males, and 64 normal adult human females. **Sacral curvature** was minimal to nil in monkeys (mean 11.5 +/- 6 SD degrees), and moderate in apes (hylobatids, mean 16 +/- 10 SD degrees; pongids, mean 27.2 +/- 16 SD degrees). In human newborns SC is minimal, increasing progressively until adolescence, reaching a mean of 64.7 +/- 29 SD degrees in adult humans. This study investigates the different factors contributing to the formation of the **sacral curvature**. These factors include 1) the effect of erect **posture**, which tilts the upper part of the **sacrum** dorsally and the lower part of the **sacrum** ventrally, and 2) the influence of **supine posture**, which affects the development of the lower part of the **sacrum**. In addition to **supine posture** the levator ani, which is well developed in *Homo sapiens*, also affects the lower part of the **sacrum** and coccyx and influences its ventral orientation. Variation in SC can result from differences in onset and frequency of **supine posture**. This is the first time that **supine posture** has been shown to play a role in shaping the human pelvis, although it is as characteristic of *H. sapiens* as is erect **posture**.

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