

ABSTRACT

The comparison of certain proportions of lumbar vertebral bodies and of the lumbar column as a whole between a range of primate and non-primate mammals suggests that the relatively high robusticity of the lumbar column in primates may be related to habitual trunkal erectness. A decrease in the total number of lumbar vertebrae and high robusticity of individual vertebrae may be associated with large body size and positional habits in which trunkal erectness is particularly important. In some groups of primates proportions may relate to particular back movements occurring during quadrupedal progression or to positional suspension. Allometric regressions suggest that resistance to bending may be as important a function of lumbar vertebral bodies as resistance to compression. The proportions of the immediately pre-sacral lumbar vertebral bodies help to produce the normal human lumbar lordosis, but other factors must also be involved in the formation of the lordosis.