

## **Gender Differences in Body Composition from Childhood to Old Age: An Evolutionary Point of View**

**Sylvia Kirchengast**

*Department of Anthropology, University of Vienna, Vienna, Austria*

**KEYWORDS** Sexual Dimorphism. Body Size. Body Composition. Humans

**ABSTRACT** In this cross-sectional study gender differences in body composition (relative fat mass and lean body mass adjusted by height) were analyzed among 869 girls and 780 boys aging between 6 and 18 years and 513 adult women and 412 adult men aging between 19 and 92 years. Body composition was determined by BIA method among children and adolescents and dual energy x-ray absorptiometry (DEXA) among adults. It could be shown that males and females differed significantly in body composition throughout life. Even during prepuberty, girls exhibited a significantly higher amount of body fat and a significantly lower amount of lean body mass than their male counterparts. These gender differences are found throughout life. The observed results are interpreted in a proximate and an ultimate sense. Furthermore the impact of modern life style in industrialized countries is discussed.

---

*Address for correspondence:*

Univ. Prof. Dr. Sylvia Kirchengast  
University of Vienna, Department of Anthropology,  
Althanstrasse 14, A-1090 Vienna, Austria  
*Email:* sylvia.kirchengast@univie.ac.at