BONE MINERAL STATUS OF ADULT ANGLO-CELTIC AND INDIAN MELBURNIANS

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Ethnic differences have been observed in bone mineral status. It has been reported that Asians have a lower bone mineral density and bone mineral content than whites (Russel-Aulet et al. 1993). Most studies have reported bone mineral status of Chinese and, in some studies, Japanese (Hirota et al. 1992). However, little is known about bone mineral status of South Asians of the Indian subcontinent. The present study was conducted to assess and compare bone mineral status of representative populations of Anglo-Celtic and Indian Australians in Melbourne.

The study populations were drawn from two population-based studies of apparently healthy Melburnians of Anglo-Celtic and Indian ancestry, aged 25 and over. Similar study protocols were followed for both studies. Bone mineral content (BMC) and bone mineral density (BMD) of total body were assessed in 201 Anglo-Celtic subjects (67 men, 46 premenopausal and 88 postmenopausal women) and 149 Indian subjects (80 men, 50 premenopausal and 19 postmenopausal women) using dual-energy X-ray absorptiometry (DEXA). Anthropometric measurements were performed on each subject. BMC in grams was divided by height in metres squared to correct for the differences in skeletal size. Results of bone mineral status, after adjustment for age and body mass index, are shown in Table.

Table: Adjusted bone mineral status of Anglo-Celtic and Indian subjects[a]

	Total body BMD (g/m^2)		Total body BMC[b] (g/m^2)	
	Anglo-Celtics	Indians	Anglo-Celtics	Indians
Men	1.21 ± 0.01	1.17 ± 0.01*	1023 ± 11	932 ± 10**
Premenopausal women	1.17 ± 0.01	1.15 ± 0.01	995 ± 13	903 ± 12**
Postmenopausal women	1.08 ± 0.01	1.01 ± 0.02*	907 ± 10	796 ± 23**

[a] Mean ± SEM. Adjusted for age and body mass index. [b] Corrected for height.
Significantly different from the Anglo-Celtic group: * $P<0.01$; ** $P<0.0001$.

It was found that, after adjustment for age and body mass index, Anglo-Celtic subjects had a significantly higher total body BMD and BMC, corrected for height, than Indian counterparts. However, no significant difference was observed in total body BMD between Anglo-Celtic and Indian premenopausal women. It is concluded that there are differences in bone mineral status between Anglo-Celtic and Indian subjects. Results of this study confirm a high bone mineral content in the whites.

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