

## METHODS OF DIETARY CALCIUM ASSESSMENT IN FEMALES

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Dietary calcium is important in development of peak bone mass in early life and maintenance of bone density (BD) in later life. Convenient methods of dietary calcium assessment could be used to determine calcium intakes of different age groups.

Four methods of dietary calcium assessment were completed by three groups of female twins recruited to a study to assess changes in BD: adolescents aged 11-17(AD), young adults aged 18-25(YA), and older women aged 45-55(OW). Calcium intake was assessed by short food frequency questionnaire (SFFQ)(Angus and Eisman 1988), longer food frequency questionnaire (LFFQ), milk scale chart (MSC), calcium calculated from SFFQ milk items only (SFFQM) and adjusted total calcium calculated from MSC assuming that 60% of dietary calcium is derived from milk (MSCA).

	SFFQ	LFFQ	Calcium (mg/day, mean±SD)		MSCA
			MSC	SFFQM	
AD	643±437	906±493	589±429	419±324	982±714
YA	513±312	735±343	462±330	336±271	769±549
OW	536±371	685±368	443±355	321±275	739±592

There was significant correlation between all dietary assessment methods, ranging from  $R^2$  0.3 to 0.7,  $P < 0.01$ . Paired t-tests showed significant differences between all methods except between MSCA and LFFQ. Plotting the differences against the means for two different methods indicated that there was less agreement at higher intakes of calcium (Bland and Altman 1986).

The results suggest that questionnaire assessment of dietary calcium is more consistent in those on lower calcium intakes and that food questionnaires may not provide a reliable indicator of dietary calcium in those on higher intakes. Mean calcium intakes assessed by these methods differed, but questionnaire assessment may be used to classify the calcium intake of groups to within approximately  $\pm 450$  mg/day.

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