LSAW Body Composition and Anthropometry

Description	Variable	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2010	2013
		B/L	12 mo	24 mo	36 mo	48 mo	60 mo	72 mo	84 mo	96 mo	114 mo	120 mo	144 mo	180 mo
Anthropometry	**Height, weight and BMI**	1498	1374	1317	1276	1159	1136		989			823	583	231
	Tricep skin fold	1496					1186		989			826	586	
	Upper arm girth	1499					1184		988			828	586	
	Grip strength	1488					1179		988			778	559	
	Waist to hip ratio	120					1158		983			823	585	
	Timed Up and Go	1497					1176					785	566	
DXA Whole body	**Body composition fat lean by anatomical site**	419	339	105	95	101	908		751			600	380	
	Visceral fat													

Overview

Participants

The participants involved in this study were recruited in 1998 to a 5-year, randomized, controlled trial of oral calcium supplements to prevent osteoporotic fractures as described previously (12). Briefly, women were recruited from the Western Australian general population of women aged over 70 years by mail using the electoral roll a requirement of citizenship. Over 99% of Australians of this age are registered on the roll. Of the 5,586 women who responded to a letter inviting participation 1,510 women were willing and eligible and of these 1,460 women were recruited for the study. Participants were ambulant and did not have any medical conditions likely to influence 5-year survival. They were excluded if they were receiving bone-active agent, including hormone replacement therapy. Participants were similar in terms of disease burden and pharmaceutical consumption to whole populations of this age but they were more likely to be from higher socio-economic groups (13). In the 5 years of the trial, participants received 1.2 g of elemental calcium as calcium carbonate daily or a matched placebo.

Overview of CAIFOS randomized controlled trial

Patients received calcium carbonate tablets, 0.6g twice per day (with morning and evening meals), or identical placebo tablets (Wyeth Consumer Healthcare, Baulkham Hills, Australia). The randomization list was produced by generating 146 blocks of 10 numbers. In each block, 5 positions representing placebo and 5 positions representing calcium treatment were ordered using a letter code according to a random number generator. The numbered blocks were ordered according to randomly generated numbers, and an identification number was assigned in order to each letter code in the randomized list. The Pharmacy Department of the Sir Charles Gairdner Hospital, Nedlands, Australia, assigned a treatment to the letter code and assigned the appropriate medications to the patient according to this list. The randomization was stratified by allocating patients to blocks according to whether a prevalent non-traumatic fracture had occurred after age 50 years, ensuring that an equal number of patients with and without a prevalent fracture received placebo or calcium. Medication compliance was checked at the completion of the study by counting returned tablets at each 12-month review and was calculated as a percentage of the optimum. Average yearly compliance of less than 80% was classified as non-compliant.

Ethics statement

The Human Ethics Committee of the University of Western Australia approved the study and written informed consents were obtained from all participants.

Anthropometry
Body weight (kg) was assessed using digital scales with participants wearing light clothes and no shoes. Height (cm) was assessed by using a stadiometer, and body mass index (BMI) was calculated as weight in kilograms divided by the square of height in meters. A tape (lufkin, executive thinline, W606PM) was used to measure waist and hip girth to the nearest 0.1 cm. The sum of 8 skinfolds in millimeters was calculated from the sum of the skinfolds of the triceps, subscapular, biceps, iliac crest, supraspinale, abdominal, front thigh, and medial-calf sites.

Body composition
Body composition was measured in a randomly selected subgroups of participants by whole body Dual energy X-ray absorptiometry (DXA), using a Hologic 4500A bone densitometer (Hologic Corp., Waltham, MA) with CVs under 2% in our laboratory. All data and analyses presented exclude the head. Lean body mass refers to bone-free lean mass. The lean mass of the arms and legs were summed to provide the appendicular skeletal muscle mass.