

Bone Loss after Stopping Estrogen or Alendronate Therapy

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The full report is titled “Significant Differential Effects of Alendronate, Estrogen, or Combination Therapy on the Rate of Bone Loss after Discontinuation of Treatment of Postmenopausal Osteoporosis. A Randomized, Double-Blind, Placebo-Controlled Trial.” It is in the 3 December 2002 issue of *Annals of Internal Medicine* (volume 137, pages 875-883). The authors are SL Greenspan, RD Emkey, HG Bone III, SR Weiss, NH Bell, RW Downs Jr., C McKeever, SS Miller, M Davidson, MA Bolognese, AL Mulloy, N Heyden, M Wu, A Kaur, and A Lombardi.

What is the problem and what is known about it so far?

Less dense and more fragile bones (osteoporosis) occur as people age. This is a big problem because bone fractures after falls or injuries happen more easily in older people with osteoporosis. There are several ways to help prevent fragile bones and fractures from osteoporosis. Adequate calcium and vitamin D intake, exercise, and avoidance of alcohol and tobacco prevent bone loss. Doctors also give drugs, such as estrogen or bisphosphonates, to prevent more bone loss in people who already have osteoporosis. Many people have difficulty taking the drugs for long periods. They may stop taking them after 1 or 2 years. The harms of stopping the drugs are not well known. For instance, does bone loss speed up after stopping either type of drug?

Why did the researchers do this particular study?

To study the rate of bone loss after stopping Premarin (an estrogen), alendronate (a bisphosphonate), and combination therapy with both drugs.

Who was studied?

244 postmenopausal women who had had their uterus removed (hysterectomy) and who had low bone mass.

How was the study done?

All of the women had participated in a 2-year trial that had compared benefits of placebo (dummy pills), Premarin, alendronate, and combination therapy. At the end of the trial, they were given the opportunity to participate in a 1-year study of stopping therapy. Those who agreed were divided into five groups. The groups switched to placebo from 1) alendronate, 2) Premarin or 3) combination therapy, or they continued 4) placebo or 5) combination therapy. The women had bone mass measurements with special x-rays at 6-month intervals. The researchers then compared bone mass between groups.

What did the researchers find?

Women receiving alendronate or combination therapy who switched to placebo did not lose bone mass. Women who switched from Premarin to placebo lost bone mass at greater rates than women who continued placebo. Women who continued taking combination therapy gained bone mass.

What were the limitations of the study?

The study was small and could not tell whether fractures would be more common in women stopping Premarin than in women stopping alendronate.

What are the implications of the study?

Bone loss speeds up after stopping Premarin but not after stopping alendronate or combination therapy with Premarin and alendronate.