

# POSITIVE EFFECT OF CAEDTA IN OSTEOPOROSIS

## Technology Overview

The invention is the use of a Zinc chelator to help stop the damage to tissue bone mineral density due to Osteoporosis. Osteoporosis is typically treated with calcium supplements and estrogen therapies, but these methods have not been very effective.

Zinc has been known to inhibit conversion of testosterone to estrogen. Also, Zinc competes with estrogen by binding to the sex hormone binding globulin receptor. Estrogen is under the extensive first-pass metabolism which dramatically reduces the bioavailability of administered estrogen. By dosing the Zinc chelator CaEDTA along with traditional calcium and estrogen supplements the bioavailability of active estrogen was increased and the mineralization of bone tissue was improved.

## Potential Fields of Use

The main application for this invention is an adjunctive therapy for Osteoporosis. Osteoporosis affects an estimated 75 million people in Europe, USA, and Japan. Globally, one in three women over 50 will experience osteoporotic fractures, as well as one in five men. Each year, this equates to roughly 297,000 hip fractures, 547,000 vertebral fractures, 397,000 wrist fractures, 135,000 pelvic fractures, and 675,000 fractures at other sites. In 2005, Osteoporotic-caused-fractures were responsible for \$19 billion in costs, and by the year 2025, these costs will rise to approximately \$25.3 billion.

## Benefit Analysis

The proposed drug has some advantages to help treat loss of tissue bone mineral density due to Osteoporosis:

- Establishing the use of a Zinc chelator as a essential key to bone growth and mineralization.
- Increasing the effectiveness of conventional hormone treatments.
- Reducing the unwanted side effects or risk of cancers associated with the hormone treatments
- Reducing healthcare costs of complications arising from loss of tissue bone mineral density.

## Stage of Development

The treatment has been tested in vivo in osteoporosis model. The study showed that CaEDTA increased the efficacy of estrogen injections, thus improving tissue bone mineral density.

## Future Development

The technology would require additional research and experimental validation before it becomes available for commercial use.

## Licensing Opportunities

A patent application for this technology has been filed. Licensing opportunities are available.

A. Normal  
B. Osteoporosis model  
C. Osteoporosis + Estrogen  
D. Osteoporosis + Zinc Chelator  
E. Osteoporosis + Estrogen + Zinc Chelator



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