

# The Cost-Effectiveness of Implementing an Exercise Program for Fall and Fracture Prevention in Adults Aged 65 and Older on Proton Pump Inhibitor Therapy

Presenter:

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## Background:

- Adults over age 65 have a **30%** risk of falling annually
- In **2013**, there were **7 million Americans over the age of 65 taking PPIs**
- PPI use increases risk of falling and fracture (**OR 1.2-3.77**)
- Exercise programs can decrease the risk of falls and fractures in the elderly by at least 30% annually

## Methods:

- We developed a model to predict outcomes and financial implications of a fall in elderly PPI users (figure 1)
- We then compared the cost of 3 different exercise programs to the predicted annual cost of fall and fracture in elderly PPI users as compared to non-PPI users (figure 2).
- Lastly, we performed sensitivity analysis using different OR's (1.2-3.77) between PPI use and Fall/Fracture Risk

# Exercise is a financially effective method of preventing falls and fractures in elderly PPI users

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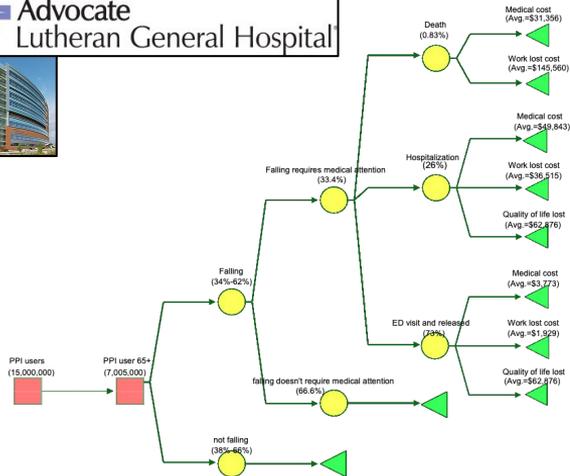


Figure 1

Figure 2

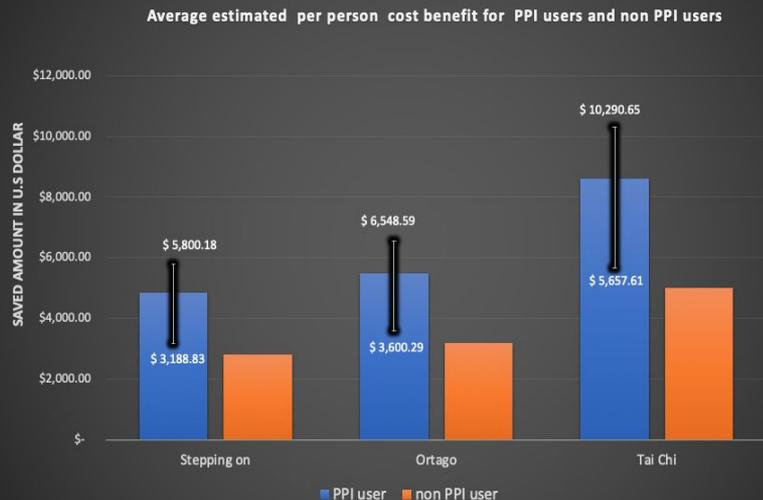


Figure 1: Financial model developed to predict the financial implications of a fall.

Figure 2: Average annual predicted financial benefit of implementing exercise programs to reduce fall and fracture risk in elderly patients in comparison between PPI users in blue and non-PPI users in orange.



## Results:

- With modest fall reduction of at least 5%, there is a financial benefit to employing an exercise program in the prevention of falls and fractures amongst elderly PPI users.
- Potential Individual savings of **\$3,183.83 to \$10,290.65 annually** from fall prevention
- Potential US savings of **\$18-85 billion annually**

## Conclusions:

- Formal exercise programs like Tai Chi, Otago, and Stepping On represent an effective method of reducing the financial impact of falls and fractures in elderly patients on PPI therapy
- Based on sensitivity analysis, the potential financial benefit of implementing an exercise program for fall and fracture prevention in elderly PPI users is independent of the variable ORs between PPI use and falls/fractures

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