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## Fracture Fact:

Because medications that help you sleep, or that cause drowsiness, may also increase your risk of falls, take these only at the recommendation of your doctor (Vancouver Coastal Health).

**Remember: You can live well with osteoporosis!**

## Secondary Osteoporosis – Drugs and Diseases that can Cause Bone Loss, Falls and/or Fractures (Part 2)

### Part 2: MEDICATIONS

*In this issue we continue the discussion of medications that can cause bone loss, falls and/or fractures.*

#### Anti-seizure and Mood-altering Drugs

The anti-seizure drugs carbamazepine (Tegretol®) and phenytoin (Dilantin®) have been associated with a reduction in bone density and this is believed to be due to low vitamin D and decreased intestinal absorption of calcium. Drugs that act on the central nervous system can cause falls by causing drowsiness, confusion, a drop in blood pressure, abnormal heart rhythms or a change in the normal functioning of the nerves and/or muscles of the body. Examples are some antidepressants, some types of sleep aids such as benzodiazepines and some antipsychotic medications. The risk of falling increases as more of these medications are taken, particularly during the start or the sudden discontinuation of these drugs. Antidepressants and sleep aids have also been associated with an increased risk of hip fractures during the first few weeks of starting these drugs.

#### Blood Pressure Medication

Recent studies have shown that some of the common drugs used to treat high blood pressure can increase the risk of falls and fractures in older adults. This occurs during the first few weeks of treatment because of a drop in blood pressure. Some of these drugs have also been associated with an increased risk of hip fracture when the drug is started. These drugs are important for reducing the risk of heart attack and stroke, but in order to prevent falls, caution should be taken when first starting them.

#### Diuretics

Diuretics, such as furosemide (Lasix®), are commonly used to treat the fluid retention and swelling caused by heart failure. They work by increasing urination and they also promote calcium excretion from the kidneys. As a result, they have been associated with reduced bone mineral density at the hip. They have also been associated with an increased risk of hip fracture within the first 7 days of starting treatment in older adults, which is likely due to an increase in falls.

#### Prostate Drugs

Alpha adrenergic blockers such as tamsulosin (Flomax®) are commonly used for the treatment of benign prostatic hyperplasia (enlarged prostate or BPH) in men. Older adults are more susceptible to the side effects of these drugs, which may

include dizziness, weakness, changes in blood pressure and falling. As a result, older men are at increased risk of hip fracture in the first month after starting an alpha adrenergic blocker.

### Other Drugs

There are other drugs that have limited scientific evidence for affecting fracture risk. These include:

1. The use of *acetaminophen* (e.g. Tylenol®) for a period of at least 3 years (dose uncertain) compared to non-users has been associated with an increased risk of fracture.
2. *Narcotic* and *opioid* medications used for pain, such as morphine, have been associated with an increased risk of fracture secondary to falling due to the effects on the central nervous system, which may lead to dizziness or changes in balance.
3. *Aluminum-containing antacids* such as Maalox®, Mylanta®, Amphogel®, Gelusil® and Roloids® are often taken for the treatment of heartburn. These over-the-counter medications may inhibit phosphate absorption from the intestine, which may reduce bone mineral density. In patients with impaired renal function, the aluminum may impair bone mineralization and this may be associated with fractures.
4. *Thiazolidinediones* such as rosiglitazone (Avandia®) and pioglitazone (Actos®) are drugs used to treat type 2 diabetes. In men and women aged 40 years and older who were started on these drugs, there was an increased risk of fracture and this risk increased with longer duration of thiazolidinedione use (4 years or more).
5. *Antirejection/immunosuppressive therapy* such as cyclosporine (Neoral®) and tacrolimus (Prograf®) used after organ transplant may increase bone loss.
6. *Heparin* is a blood thinner. When used for a short period of time the effect on the skeleton is minimal, but with long-term use it may reduce bone density.
7. Some *cancer chemotherapy* drugs may cause ovarian failure in women, resulting in premature menopause, or testicular failure in men, resulting in low testosterone levels, both of which lead to bone loss. In addition, some cancer treatments include

glucocorticoid therapy that may further increase bone loss.

## How to Minimize the Harmful Effects of Medications on Bone

### Talk to Your Doctor

These two issues of *COPING* may not include all medications that can contribute to fractures. If you are taking any medications that may increase bone loss or the risk of falls, talk to your doctor and request a *fracture risk assessment*, which is a more in-depth assessment of your bone health. To do this your doctor may suggest you have a bone mineral density (BMD) test. This is a painless test that can help to predict your likelihood of fracture. Your doctor will also need to consider other risk factors including your age, sex, fracture history, parental history of hip fracture and glucocorticoid use.

### Calcium, Protein and Vitamin D

The Osteoporosis Canada (OC) fact sheet [Nutrition: Healthy Eating for Healthy Bones](#) can help you determine if you are getting enough calcium and vitamin D. OC recommends that as much as possible, calcium intake should be from food, and calcium supplements should only be taken if one cannot consume sufficient calcium from the diet. On the other hand, there are few food sources of vitamin D and the sun is an unreliable source. Therefore, OC recommends daily vitamin D supplementation all year round for all Canadian adults. A well balanced diet, following *Canada's Food Guide*, will ensure that you get sufficient protein and other nutrients essential for bone health.

### Regular Exercise

Exercise helps build and maintain strong muscles and bones. The OC fact sheet [Exercise for Healthy Bones](#) and [COPN's own 8-part newsletter series on exercise](#), both provide good general guidelines for choosing an exercise program that is right for you.

### Smoking and Alcohol

Any type and amount of smoking contributes to bone loss and increases the risk of osteoporosis in both men and women. Drinking an average of three or more alcoholic beverages per day may also increase bone loss and fracture risk. OC recommends no smoking and no more than an

average of two alcoholic drinks daily.

In the next two issues, December 6 and 20, 2013, we will look at medical conditions that can cause bone loss, falls and/or fractures.

## FUNNY BONE:

The shortest distance between two points is under construction.

### The Potential Link Between BioSil™ (Orthosilicic Acid) and Bone Health

In 2008 the results of a small study were published reporting on the use of choline stabilized orthosilicic acid a form of silicon, or placebo in 184 women with low bone density. The women also received 1,000 mg of calcium in addition to vitamin D3 supplements. At 12 months 136 women had completed the study. There was wide variation in the markers of bone repair and renewal, a trend for higher markers of bone formation in the group receiving the orthosilicic acid. There was no significant change in the bone density at 12 months between the placebo group and the orthosilicic acid group.

There may be a potential benefit with this compound and it may warrant further research. However, at this time the research data available is extremely limited and has not confirmed that this product is of value in improving bone health and reducing the risk of fracture. Individuals with osteoporosis or low bone density should consult their physician regarding the best treatment options for them.

## What a spectacular day to Nordic Walk in Wine Country for Osteoporosis Canada!

Returning to Niagara-on-the-Lake for a second year was Osteoporosis Canada's *Nordic Walking in Wine Country*. On Saturday, October 5, 2013 over 250 supporters descended on historic Fort George with smiles on their faces ready to tackle a 10 km, 5km or 2km Nordic Walking route regardless of the soggy and muddy conditions! With the event held in wine country, a celebration post-event took place at Jackson-Triggs Winery with participants reconnecting with old friends, making new friends and relaxing by the vineyards while enjoying the barbecue.

These 250+ dedicated individuals trained and fundraised in the weeks leading up to the event and it was thrilling to have participants attend from all over the Greater Toronto Area, Peterborough, Wasaga Beach, Marathon, Hamilton, St. Catharines, Vineland and even from across the border from Massachusetts!

As a result of the generosity and tenacity of our participants, volunteers, corporate sponsors and partners *Nordic Walking in Wine Country* has raised \$95,000 to date for Osteoporosis Canada!



We wish to recognize our top fundraisers:

### Top 10 Fundraisers

1. Kimberley Swift - \$4,595.00
2. Ted Parkinson - \$1,925.00
3. Sacha Thomas - \$1,630.00
4. Suzanne Brunelle - \$1,552.00
5. Sheila Donohue - \$1,400.00
6. Emily Bartens - \$1,325.00
7. Rosa Lorusso - \$1,270.00
8. Annette Hamm - \$1,000.00
9. Andrew Alexeichenko - \$860.00
10. Heather Sullivan - \$840.00

### Top 5 Fundraising Teams

1. Wasaga Walkie Talkies - \$7,170.00
2. The Markers - \$4,238.00
3. Hammer Girls - \$2,600.00
4. POP Team - \$2,125.00
5. Milton Mittens - \$1,065.00

We also wish to identify the dedicated and committed sponsors who continue to support the initiatives and work of Osteoporosis Canada: Dairy Farmers of Canada, KPMG, AMGEN and Italtasta. Thanks also go to the Government of Canada for providing the New Horizons for Seniors grant and to our corporate partners: Kellogg's, Krinos Foods Limited, Give & Go and ESKA Water.

***Thank you to everyone who made the commitment to train, walk, fundraise, donate, sponsor and volunteer for Nordic Walking in Wine Country! You helped to make it a great day for Osteoporosis Canada!***

To view photos of the event, please visit our Facebook and Flickr pages which can easily be reached through the [Osteoporosis Canada](#) homepage.

### After the Fracture: A Dynamic New Addition to the OC Website

Osteoporosis Canada is pleased and proud to announce the introduction of a new section on our website dedicated to those who have fractured. The result of months of work by members of the Scientific Advisory Council, OC staff, and volunteers, many of whom have experienced broken bones from osteoporosis, **After the Fracture** is designed to provide practical information for fracture patients.

**After the Fracture** will help readers to understand the pain they are experiencing and the stages of healing. They will learn what to expect from wrist, shoulder, hip and spine fractures. They will encounter self-help guidelines for basic movements like standing, walking, sitting and bending, as well as helpful hints for how to perform common daily activities such as tying your shoes or getting up from a chair. A series of short videos on how to safely do everyday activities provides live demonstrations of some of these activities. While this information may be helpful to anyone who has broken a bone, it is intended especially for those who have had a fragility fracture from osteoporosis.

After  
the Fracture

Broken Bone?  
Click here!

For information about pain and practical tips about movement visit  
[www.osteoporosis.ca/AfterTheFracture](http://www.osteoporosis.ca/AfterTheFracture)



## A Recipe from our Sponsor

### Delicious Salmon Vegetable Chowder

This easy satisfying soup is chockfull of healthy ingredients - including vitamin D. Plus, salmon is rich in heart-healthy, disease-fighting omega-3s.

Course: *Main Dishes*

Preparation Time: *15 mins*

Cooking Time: *20 mins*

Yields: *4 servings*

*3/4 milk product serving(s) per person*



#### Preparation

1 tbsp (15 ml) butter  
1/2 cup (125 ml) chopped onion  
1 clove garlic, minced  
1/4 tsp (1 ml) each thyme and basil  
10 oz (284 ml) can condensed chicken broth  
1 cup (250 ml) peeled, diced potatoes  
1/2 cup (125 ml) corn niblets  
1/2 cup (125 ml) diced zucchini  
1/2 cup (125 ml) carrots  
2 cups (500 ml) **milk**  
8 oz (225 g) uncooked salmon filet in small chunks  
1/2 cup (125 ml) grated **Canadian Cheddar cheese**

#### Instructions

In heavy saucepan, sauté onions, garlic and herbs in butter 5 min until still transparent. Add broth and all vegetables. Simmer, uncovered, until vegetables are cooked 15 to 20 min.

Add **milk** and salmon. Simmer, until salmon is opaque, 5 to 7 min. Do not boil. Season to taste.

Divide into 4 bowls, sprinkle with **cheese** and enjoy.

#### For more information about this recipe:

<http://www.dairygoodness.ca/getenough/recipes/delicious-salmon-vegetable-chowder>

NOTICE: Every issue of COPING is vetted by members of Osteoporosis Canada's Scientific Advisory Council to ensure accuracy and timeliness of content. These newsletters are not intended to promote or endorse any particular product. Product references, if they appear, are for illustration only.

These newsletters are not intended to replace individualized medical advice. Readers are advised to discuss their specific circumstances with their healthcare provider.

**This issue of COPING is sponsored by Dairy Farmers of Canada**



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[getenough.ca](http://getenough.ca)