



In this issue

- Secondary Osteoporosis – Part 3
- Fracture Fact
- Funny Bone
- A recipe from our sponsor

Fracture Fact:

Supplementation with adequate amounts of vitamin D helps improve muscle strength and reduces the risk of falls and fractures.

Remember: You can live well with osteoporosis!

Secondary Osteoporosis – Drugs and Diseases that can Cause Bone Loss, Falls and/or Fractures (Part 3)

Part 3: MEDICAL CONDITIONS

In the previous two issues of COPING we discussed medications that can cause bone loss, falls and/or fractures. In this issue and the next, we discuss some of the more common medical conditions or diseases that can have the same effect.

Rheumatoid Arthritis and Other Rheumatological Conditions

An inflammatory disease of the joints, rheumatoid arthritis is often treated with glucocorticoids, usually prednisone. Pain and loss of joint function can lead to inactivity, which can further contribute to bone loss. Research suggests that osteoclast (a bone removing cell) activity and bone resorption is increased at the affected sites. In addition to rheumatoid arthritis, ankylosing spondylitis has been associated with bone loss. Several other rheumatological conditions may affect the joints, resulting in poor balance and increased risk of falls, including lupus, psoriatic arthritis and severe osteoarthritis of the hip or knee.

Malabsorption Syndromes

Malabsorption can result from bowel diseases such as Crohn's disease, ulcerative colitis and celiac disease, and other conditions that affect the bowel such as weight loss surgery. These conditions reduce the absorption of nutrients from the intestine including dietary calcium and vitamin D. The result is lower levels of calcium and vitamin D, which can increase bone loss and falls risk, leading to fractures.

Sex Hormone Deficiency (Hypogonadism)

In women this generally results in the early stoppage of menstrual periods (amenorrhea). Common causes include premature menopause (before the age of 45), eating disorders such as anorexia nervosa, exercise-induced amenorrhea (typically seen in high performance athletes and dancers), pituitary disease, chemotherapy and chronic illness. Some of these conditions can be treated with hormone therapy.

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Primary Hyperparathyroidism

The parathyroid glands produce parathyroid hormone, which controls blood calcium levels. In primary hyperparathyroidism a tumour (generally benign) in one or more of these glands causes the production of more parathyroid hormone than is needed. This causes an increase in bone turnover, which results in excess calcium release from bone and a rise in the level of calcium in the blood. As a result, the risk of osteoporosis and fractures also increases.

Chronic Kidney Disease

Many patients with chronic kidney disease are treated with glucocorticoids such as prednisone, which puts them at risk for developing osteoporosis. In addition, chronic kidney disease may cause several different metabolic bone diseases (called renal osteodystrophy) that are associated with reduced bone formation, hyperparathyroidism, and vitamin D deficiency. In renal osteodystrophy bone quality is poor, and this increases the risk of fracture.

Chronic Liver Disease

Chronic liver disease is associated with reduced bone formation, vitamin D deficiency and low sex hormones, all of which may result in bone loss. In addition, some forms of liver disease may be treated with glucocorticoids such as prednisone, which may cause even greater bone loss. Up to 50% of patients with chronic liver disease develop osteoporosis.

Diabetes

There is evidence to suggest that both men and women with type 1 diabetes are at higher risk for low bone density and for osteoporotic fractures. Poorly controlled type I and type II diabetes are often associated with hypoglycemic episodes (low blood sugar) and/or neuropathy (poor sensation) in the feet. Both of these complications of diabetes can increase the risk of falls and fractures.

How to Minimize the Harmful Effects of Other Medical Conditions on Bone

Talk to Your Doctor

These next two issues of *COPING* may not include all medical conditions that can contribute to fractures. If you suffer from any medical conditions 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, 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 issue, December 20, 2013, we will continue this discussion of which medical conditions can contribute to bone loss, falls, and/or fractures.

FUNNY BONE:

How can you avoid that terrible curse of the elderly wrinkles? Take off your glasses.

A Recipe from our Sponsor

Honey Peach Panna Cotta

The floral flavour of honey is a perfect pairing for peaches. This is a simple dessert to make with pantry ingredients, yet it's very impressive on the plate.

Course: *Desserts & Sweets*

Preparation Time: *10 mins*

Cooking Time: *3 mins*

Refrigeration Time: *3 hrs*

Yields: *4 servings*

1/2 milk product serving(s) per person



Preparation

1 pkg (7 g) unflavoured gelatin
2 cups (500 ml) **milk**, divided
Pinch of salt
2 tbsp (30 ml) liquid honey
1 tsp (5 ml) vanilla extract
1 can (398 ml) sliced peaches in juice
Ground cinnamon

For more information about this recipe:

<http://www.dairygoodness.ca/getenough/recipes/honey-peach-panna-cotta>

Instructions

In a measuring cup or bowl, sprinkle gelatin over 1/2 cup (125 mL) of the milk; let stand for 5 minutes to soften. In a small saucepan, heat remaining milk over medium heat, stirring often, just until steaming. Add gelatin mixture, reduce heat to low and heat, stirring, for about 1 minute, or until gelatin is dissolved. Pour into a large measuring cup or bowl; stir in salt, honey and vanilla and let cool to room temperature.

Meanwhile, drain peaches, reserving 1 tbsp (15 mL) of the juice. Measure 3/4 cup (175 mL) of the peach slices; cover and refrigerate remaining peaches for garnish. In a tall cup using an immersion blender or in an upright blender, purée 3/4 cup (175 mL) peaches and reserved juice until smooth (you should have about 2/3 cup/150 mL purée). Stir into cooled milk mixture.

Pour into four 3/4-cup (175 mL) ramekins or other bowls. Cover ramekins and refrigerate for at least 3 hours, until set, or for up to 2 days.

Just before serving, cut reserved peaches into thinner slices. Set ramekins in a shallow dish half-filled with hot water for 1 to 2 minutes. Wipe dishes dry, run a knife around the edge of panna cotta and invert onto serving plates to unmold. Garnish with sliced peaches and sprinkle with cinnamon.

Tips

This recipe works best with canned peaches; fresh peaches will cause the milk to split.

You can get creative with the dishes you use to mold the panna cottas. Try tall, narrow cups, flared or fluted bowls or tea cups for interesting shapes; just make sure they fit at least a 3/4 cup (175 mL) volume (you can check the volume with water before pouring in the milk mixture).

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

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