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## Fracture Fact:

Regular physical activity benefits older adults who have gone through depression and anxiety. Symptoms are more likely to decrease with physical activity. Self-confidence improves. Regular exercise is good for the brain: it helps thinking, memory & concentration.

## COPN: Proudly Celebrating our 10<sup>th</sup> Anniversary

### Depression, Antidepressants and Osteoporosis

How They Interact to Increase the Risk of a Broken Bone

#### Depression

With nearly one out of six people developing depression during their lifetime, depression is a chronic medical condition and a major health problem. It is predicted to become the second leading cause of disability worldwide by 2020 after cardiovascular disease.

Depression is very different from the day-to-day mood changes and the short emotional reactions we often experience in response to daily stresses. Major depression, also called major depressive disorder or clinical depression, affects how you feel, think and behave, and can cause a variety of emotional and physical symptoms. These include prolonged sadness or unhappiness, loss of interest or pleasure in normal activities, difficulty sleeping, changes in appetite and weight, restlessness, feelings of worthlessness, loss of energy, feeling tired even with small tasks, poor concentration, unexplained physical problems such as headaches or back pain and recurring thoughts of suicide. To be diagnosed with major depression, you must have five or more of these symptoms over a minimum of two weeks, and one of the symptoms must be a depressed mood or a loss of interest or pleasure. Research suggests that almost twice as many women suffer from depression than men, but this may be because women are more likely than men to seek treatment for their depression.

#### Depression and Osteoporosis

There are certain **lifestyle factors** associated with depression that may reduce bone mass and increase the risk of developing osteoporosis and broken bones. These include:

- smoking
- alcohol abuse
- poor nutrition resulting in lower calcium intake
- weight loss that leads to low body weight (< 60 kg or 132 lb)
- a sedentary lifestyle with reduced physical activity leading to muscle weakness and an increased risk for falls.

In addition, there are certain **biological changes** that occur during depression that may also reduce bone mineral density and increase fracture risk such as high blood levels of a stress hormone (cortisol) and low levels of sex hormones.

Depression affects people differently and symptoms can be mild, moderate or severe. If you think you may be suffering from depression, we encourage you to

see a healthcare professional such as a family physician, psychiatrist or psychologist as soon as possible. There are many effective treatments for depression including a variety of antidepressant medications and different forms of psychological counselling. Depression can be treated using any combination of these treatment options depending on the individual.

### **Antidepressants and Their Effect on Bone**

Antidepressant medications (most commonly SSRIs) are often prescribed to treat the symptoms of moderate to severe depression, usually in combination with some form of counselling. While antidepressants are very important for the treatment of moderate to severe depression, more research is needed to better understand how antidepressants affect bone. The table below summarizes the different classes of antidepressant drugs and our current knowledge on their effect on bone.

<b>Antidepressant</b>	<b>Classes</b>	<b>May Decrease Bone Density</b>	<b>May Increase Fracture Risk</b>	<b>Comment on Fracture Risk</b>
Citalopram (Celexa®)	SSRI	Yes	Yes	Increases as dose increases
Escitalopram (Cipralex®)	SSRI	Yes	Yes	
Fluoxetine (Prozac®)	SSRI	Yes	Yes	Increases as dose increases
Fluvoxamine (Luvox®)	SSRI	Yes	Yes	
Paroxetine (Paxil®)	SSRI	Yes	Yes	No effect at low doses but may have an impact at higher doses
Sertraline (Zoloft®)	SSRI	Yes	Yes	No effect at low doses but may have an impact at higher doses
Desvenlafaxine (Pristiq®)	SNRI	?	?	Insufficient evidence
Duloxetine (Cymbalta®)	SNRI	?	?	Insufficient evidence
Mirtazapine (Remeron®)	SNRI	?	?	Insufficient evidence
Venlafaxine (Effexor®, Effexor XR®)	SNRI	?	?	Insufficient evidence
Amitriptyline (Elavil®)	TCA	?	Yes	Increases as dose increases
Clomipramine (Anafranil®)	TCA	?	?	Insufficient evidence
Doxepin (Sinequan®)	TCA	?	?	Insufficient evidence

Imipramine (Tofranil®)	TCA	?	Yes	No effect at low doses but may have an impact at higher doses
Nortriptyline (Aventyl®)	TCA	?	Yes	No effect at low doses but may have an impact at higher doses
Trimipramine (Surmontil®)	TCA	?	?	Insufficient evidence
Isocarboxazid (Marplan®)	MAOI	?	?	Insufficient evidence
Moclobemide (Manerix®)	MAOI	?	?	Insufficient evidence

### Classes of Antidepressants

SSRIs = Selective Serotonin Reuptake Inhibitors

SNRIs = Serotonin and Norepinephrine Reuptake Inhibitors

TCA = Tricyclic Antidepressants

MAOIs = Monoamine Oxidase Inhibitors

Depending on the dose, both SSRIs and TCAs can double an individual's risk of breaking a bone (fracturing) compared to those not taking these antidepressants. The increase in fracture risk when taking these drugs depends on both the specific drug used and the dose taken. There is insufficient evidence to determine if there is any increase in fracture risk with the other classes of antidepressants.

Stopping an antidepressant suddenly may result in dizziness and poor balance leading to fall-related injuries such as broken bones. For these reasons, it is important to consult with your healthcare provider (including your pharmacist) whenever *starting* or *stopping* antidepressant medication. If these drugs are started and stopped *gradually*, over a period of several weeks and under the guidance of a healthcare professional, unpleasant symptoms leading to falls or broken bones can often be avoided.

### What Does This Mean For You?

Although there is an association between depression, antidepressant medications and increased fracture risk, more research is still needed to better understand this area. For this reason, Osteoporosis Canada does not currently recommend bone mineral density testing just because someone is suffering from depression and/or taking antidepressant medication.

If you suffer from depression or are taking an antidepressant drug, you should continue taking your medication as prescribed. If you are uncertain about taking your antidepressant medication please check with your healthcare professional **first** before making any changes to your treatment. You should also see your doctor for a fracture risk assessment and to find out if you need a bone mineral density test. (See fact sheet on [Diagnosis](#) by clicking [here](#) or by calling 1-800-463-6842 to request a copy). Always remember to follow a healthy lifestyle for good bone health such as regular exercise, a diet rich in calcium, adequate vitamin D supplementation, avoiding smoking and limiting alcohol intake. All of these healthy lifestyle factors will not only reduce bone loss and your risk of fracture; they may also help improve your symptoms of depression.

*With thanks to Dr. Debra A. Butt MD, MSc, CCFP, FCFP, Dr. Irene Polidoulis MD, CCFP, FCFP, and Dr. Rowena Ridout MD, FRCP(C). Also thanks to Dr. David Goltzman MD, FRCP(C) whose article, "Depression and Bone Loss", published in COPING July 8, 2011, inspired this reconsideration of an important topic.*

# FUNNY BONE:

Don't let aging get you down. It's too hard to get back up!

## A Recipe from our Sponsor

### Vegetable, Chicken and Cheddar Casserole



Course: *Main Dishes*      Preparation Time: *45 mins*  
Cooking Time: *40 mins*      Yields: *6 to 8 servings*  
*3/4 milk product serving(s) per person*

#### Ingredients

4 cups (1 L) cauliflower, coarsely chopped  
2 1/2 cups (625 mL) potatoes, peeled and diced  
2 tbsp (30 mL) butter, divided  
3 tbsp (45 mL) fresh chives, chopped  
1 tsp (5 mL) paprika  
1 1/2 lb (675 g) chicken breasts, cut into cubes  
1 onion, chopped  
2 cloves garlic, chopped  
2 stalks of celery, thinly sliced  
2 carrots, peeled and cut into coins  
2 cups (500 mL) acorn or butternut squash, peeled and diced  
1 1/2 cups (375 mL) wax beans, cut into 1" (2.5 cm) pieces  
1 cup (250 mL) snow peas, trimmed and halved  
2 cups (500 mL) béchamel sauce, homemade or store-bought  
2 cups (500 mL) **Canadian Aged Cheddar**, grated and divided

#### Preparation

In a saucepan, cook cauliflower and potatoes in salted boiling water for 15 minutes or until tender.

Drain cauliflower and potatoes and mash together. Blend in 1 tbsp (30 ml) butter, chives and paprika and set aside.

Preheat oven to 375°F (190°C).

Meanwhile, melt remaining butter in a Dutch oven over high heat and brown chicken.

Add remaining vegetables and continue cooking another 5 minutes.

Add béchamel sauce and 1 cup (250 ml) Cheddar and stir until cheese melts. Season to taste with salt and pepper.

Spread cauliflower and potato mixture on top, add remaining Cheddar and cook in the oven for 20 minutes. Serve hot.

**For more information about this recipe:**  
<http://www.dairygoodness.ca/getenough/recipes/vegetable-chicken-and-cheddar-casserole>

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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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