



Osteoporosis Canada

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COPING

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Remember: You can live well with osteoporosis!

Testosterone Deficiency, Male Sexuality, and Osteoporosis, pt.1

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We all know that a testosterone deficiency may cause problems in the bedroom, but did you know it can also be linked to an increased risk of osteoporosis? This two-part article explores the role that testosterone plays in bone health, how you can recognize the signs of testosterone deficiency and outlines the options for treatment. It is adapted from "Testosterone deficiency: myth facts and controversy," written by Miner, Barkin and Rosenberg in *The Canadian Journal of Urology*TM; 21 (Supplement 2); June 2014, p. 39-54.

What is Testosterone and Testosterone Deficiency?

Testosterone is one of the sex hormones. It is found in both men and women, but levels are much higher in men. Testosterone deficiency (TD), also called male hypogonadism, is a condition where both (a) testosterone levels are low *and* (b) there are symptoms associated with low levels of the hormone. This can occur either because the testes fail to produce adequate testosterone (primary testosterone deficiency) or because the regulation of testicular production of testosterone by the pituitary gland is disrupted (secondary testosterone deficiency).

How Does Testosterone Affect Bone?

Bone grows both in length and density during youth but the most rapid growth occurs during the teen years. Even after adult height is reached, bone density continues to increase, and in men, peak bone mass is attained at the age of 20-25. Then, bone slowly starts to lose density or strength. Throughout life, bone density is affected by heredity, diet, sex hormones (testosterone and estrogen), physical activity, lifestyle choices, diseases and the use of certain medications.

Osteoporosis develops less often in men than in women for a number of reasons. Men have larger skeletons, their bone loss starts later and progresses more slowly and, unlike women, men do not experience rapid hormonal changes. Testosterone is metabolized (broken down) by the body to create other substances, including estrogen. Both testosterone and estrogen play an important role in the maintenance of the male skeleton by decreasing bone resorption and stimulating bone formation. As a result, osteoporosis is one of the problems that may be caused by testosterone deficiency.

Fracture Fact:

"By 2031 almost a quarter of our population will be seniors, as compared to 15% in 2011."

Testosterone deficiency (TD) is an important cause of osteoporosis in men. Low levels of testosterone are found in approximately 12% of men in their 50s, increasing with age to approximately 49% of men in their 80s, although only 6-12% of men over the age of 50 have symptoms of hypogonadism. In a study of nursing home patients, up to 20% of men with spine fractures and 50% of men with hip fractures were found to have low testosterone levels.

Signs and Symptoms of Testosterone Deficiency

The most common symptoms of testosterone deficiency (TD) are erectile dysfunction (the inability to achieve or maintain an erection), including a lack of morning erections, and reduced libido (sex drive). However, these symptoms can also be due to other causes, such as some forms of surgery, certain medications and diseases that affect the nervous system or the cardiovascular system. The topic of erectile dysfunction is beyond the scope of this newsletter article, but men with new or worsening erectile dysfunction need to see their healthcare provider for a thorough physical examination including a heart check-up to rule out underlying cardiovascular disease.

In addition to erectile dysfunction, lack of morning erections and reduced sex drive, a number of other symptoms are also very suggestive of TD in men. These include:

- Osteoporosis or low bone mineral density
- Reduced orgasm and genital sensation
- Low sperm count or absent sperm
- Very small or shrinking testes
- Hot flushes, sweats
- Breast discomfort or enlarged breasts
- Loss of pubic (genital) hair or axillary (armpit) hair, reduced shaving

Other signs and symptoms that may be due to TD but are often caused by other conditions include:

- Reduced energy/vitality, increased fatigue
- Depressed mood
- Reduced muscle mass and strength
- Poor memory and concentration
- Increased sleepiness
- Mild anemia
- Increased body fat and BMI (body mass index)
- Diminished physical and work performance

We hope you enjoyed reading about the role of testosterone and the signs and symptoms of testosterone deficiency. Part 2 will cover laboratory testing for testosterone deficiency, how it can be prevented and the options for treatment, so stay tuned...

SAVE THE DATES!

Upcoming *Bone Matters*:

- Wednesday, February 11, 2015 – *Nutrition and Osteoporosis*
- Thursday, April 9, 2015 – *Travelling with Osteoporosis*

For more information, click [here](#).

FUNNY BONE:

TEACHER: John, why are you doing your math multiplication on the floor?

JOHN: You told me to do it without using tables.

A Recipe from our Sponsor

Margherita Penne

Course: *Main Dishes*

Preparation Time: *10 mins*

Cooking Time: *13 mins*

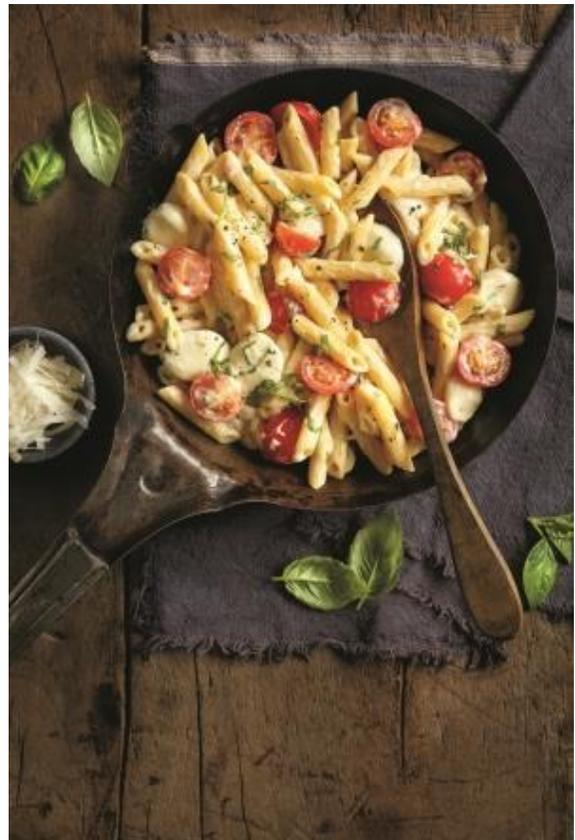
Yields: *4 to 6 servings*

1 milk product serving(s) per person

Calcium: 28% DV/ 307 mg

For more information about this recipe:

<http://www.dairygoodness.ca/getenough/recipes/margherita-penne>



Ingredients

12 oz (375 g) penne pasta
2 tbsp (30 mL) **butter**
4 cloves garlic, minced
1 1/2 tsp (7 mL) dried thyme
1/2 tsp (2 mL) salt
1/4 tsp (1 mL) hot pepper flakes
2 tbsp (30 mL) all-purpose flour
2 1/2 cups (625 mL) **Milk**
2 cups (500 mL) cherry tomatoes, cut in half
1/2 cup (125 mL) grated **Canadian Parmesan**
12 1-inch (2.5 cm) mini **Canadian Bocconcini**
1/2 cup (125 mL) fresh basil leaves, thinly sliced
Canadian Parmesan, for serving

Preparation

In a large pot of boiling salted water, cook pasta for about 11 min or until al dente, or according to package directions.

Meanwhile, in a large pot, melt butter over medium heat. Add garlic, thyme, salt and hot pepper flakes. Cook 1 min. Sprinkle with flour; cook, whisking for 1 min. Gradually whisk in milk. Bring to a boil and reduce heat. Whisk for 3 to 5 min or until smooth and thickened. Stir in tomatoes and Parmesan.

Drain pasta and return to pot. Pour in sauce; toss, stirring 1 to 2 min over medium heat to coat pasta. Stir in Bocconcini, basil and salt to taste, if needed. Serve with grated Parmesan.

Tips

Bocconcini come in different sizes, so if you need to cut the balls, the pieces should be about ¾-inch (2 cm) in size.

Try cubes of Mozzarella instead of Bocconcini.

Add some of your favourite pizza toppings to the sauce, such as pepperoni, olives or sun-dried tomatoes. Or use your favourite short pasta in place of penne.

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