

Nutrition and Bone Health for Men receiving Hormone Therapy (ADT) for Prostate Cancer

Healthy eating and lifestyle can help keep your bones strong. Adequate calcium, vitamin D, and protein are needed for bone health. This is important for men receiving long-term androgen deprivation therapy (ADT), which is also called hormone therapy. Long-term hormone therapy (more than 6 months) can cause bone loss. With time, this could turn into osteoporosis or weak bones. Healthy lifestyle habits that include weight-bearing and muscle-strengthening exercise, as well as avoiding tobacco products and excessive amounts of alcohol, can also help reduce the risk for breaking bones.

These nutrition recommendations are for men receiving hormone therapy (ADT).

Recommendations

Get enough, but not too much, calcium every day.

Calcium is needed for strong bones. Aim to meet the daily calcium recommendation as closely as possible without regularly exceeding it.

- Men receiving ADT are recommended to aim for 1200 milligrams (mg) calcium daily.
- Keep daily calcium intake from food and supplement combined below:
 - 2500 mg daily for men 19-50 years
 - 2000 mg daily for men over 50 years

Try to meet your calcium needs with food and beverages. Food gives your body many other nutrients to support your health.

Use a supplement to meet your needs if you are unable to meet your calcium needs with food and beverages. Take the smallest amount of supplemental calcium to meet your needs. To decide how much supplemental calcium to take:

- Keep a food journal for 2-3 days to track your food intake. Use the list on page 3 to calculate how much calcium you are getting.
- Include any calcium you get from other supplements such as multivitamin and mineral supplements or other products. Read labels carefully.
- Supplement with the amount of calcium needed to meet your daily calcium needs.
- You can also talk to your dietitian, primary health care provider or pharmacist about how much calcium is right for you.

Notes about calcium supplements:

- The most common types of calcium supplements are calcium carbonate and calcium citrate.
 - Calcium citrate can be taken at any time.
 - Calcium carbonate is often the least expensive and should be taken with food to be well absorbed.

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- Calcium absorption is best at doses of 500 mg elemental calcium or less at one time. If you need a calcium supplement of more than 500 mg elemental calcium, take a smaller dose more than once a day.
- Calcium can interact with some medicines or other supplements. Talk with a pharmacist when you start a new supplement or medicine.
- **If you have a history of kidneys stones speak with a doctor before taking calcium supplements**

Ideas to put into action

Eat or drink sources of calcium every day. These may include:

- Yogurt, soy yogurt or cottage cheese for a snack. Try yogurt topped with muesli, chopped nuts or fruit.
 - When choosing milk products, choose low fat (2% or less M.F.) most often
- Oatmeal with black strap molasses and milk or fortified plant-based beverage.
- A glass of milk or fortified soy or other plant-based beverage.
- A smoothie with calcium-rich ingredients such as: kale, milk, fortified plant-based beverage, kefir, calcium-rich tofu, yogurt, milk powder, white beans, or tahini (sesame seed butter)
- Tofu, chick peas, or baked beans as a calcium rich plant-based protein for lunch or dinner
- Calcium rich snacks, such as: almonds, orange, sardines, or almond butter spread on apple slices or whole grain toast.
- Side dishes such as spinach, kale or broccoli. Try roasted broccoli topped with sliced almonds.
- Salad topped with calcium rich foods such as chickpeas, feta cheese, sliced almonds, or white beans. Try a tahini based salad dressing for extra calcium.

Calcium Content of Some Common Foods

Food	Portion Size	Calcium (mg)
Cheese (Swiss)	50 g (1½ oz)	400
Cheese (cheddar)	50 g (1½ oz)	340
Milk (buttermilk, skim, 1% MF, 2% MF or whole)	250 ml (1 cup)	300
Fortified non-dairy beverages (ex. Almond, soy, rice)	250 ml (1 cup)	300
Tofu, firm, prepared with calcium	150 g (¾ cup)	300
Cheese (mozzarella)	50 g (1 ½ oz)	290
Sardines, with edible bones	75 g (3 oz)	285
Yogurt, low fat, plain	175 g (¾ cup)	275
Cheese, feta	50 g (1½ oz)	250
Milk powder, dry, skim	60 mL (¼ cup)	220
Salmon, canned with edible bones	75g (3oz)	190
Blackstrap molasses	15 ml (1 Tbsp)	180
Cheese, cottage 2% MF	125 mL (½ cup)	135
Spinach, boiled	125 ml (½ cup)	130
Beans, white, boiled	175 ml (¾ cup)	120
Sesame seeds, whole (unhulled)	15 ml (1 Tbsp)	95
Almonds	60 ml (¼ cup)	95
Tahini (sesame seed butter)	15 ml (1 Tbsp)	65
Almond butter	15mL (1Tbsp)	55
Figs, dried	4	55
Parmesan cheese, grated	15 ml (1 Tbsp)	55
Chickpeas, canned	175 ml (¾ cup)	50
Orange, raw	1 medium	50
Kale, boiled	125 ml (½ cup)	50
Broccoli, boiled	125 ml (½ cup)	20

Source: Health Canada, Canadian Nutrient File, 2015 version.

mg = milligrams

Get enough vitamin D every day.

Vitamin D is important for overall health and helps your body absorb calcium and keep your bones strong. Vitamin D is in very few foods.

- Men receiving ADT are recommended to take a daily supplement of 1000 International Units (IU), and to stay below 4000 IU of vitamin D from food and supplements daily.
- Some men will need higher amounts of vitamin D. Talk to your primary healthcare provider about how much vitamin D is right for you.

Vitamin D content of some common foods

Food	Portion Size	Vitamin D (IU)
Fish, salmon, sockeye, cooked	75 g (3 oz)	395
Trout, rainbow, cooked	75 g (3 oz)	200
Fish, halibut	75 g (3 oz)	145
Whole Buttermilk <small>(reduced fat buttermilk has very little vitamin D)</small>	250 ml (1 cup)	135
Milk (skim, 1% MF, 2% MF and whole)	250 ml (1 cup)	100
Fortified plant-based beverages <small>(For example, almond, soy, rice)</small>	250 ml (1 cup)	100
Fish, sardines, canned in oil	75 g (3 oz)	70
Fish, tuna, light, canned in oil or water	75 g (3 oz)	35
Egg yolk	1 large	30
Morel mushroom	1	25

Source: Health Canada, Canadian Nutrient File, 2015 version.

IU=International Units

Are multivitamin mineral supplements helpful?

If you can't get enough calcium or vitamin D with food and beverages alone, a standard multivitamin and mineral supplement might provide enough extra calcium and vitamin D to meet your needs. They provide approximately 175 mg of calcium and 400-1000 IU of vitamin D and other nutrients. Check the label to confirm what each supplement provides.

Get enough protein.

Protein is also needed for good bone health. You can get enough protein by eating a balanced plant-based diet that includes a protein-rich food each meal. Protein rich foods include: meat, fish, shellfish, poultry, beans, lentils, tofu, fortified soy beverage, nuts, eggs, milk, yogurt, kefir, and cheese.

Ideas to put into action

- Include protein-rich foods with each meal.
- Use your plate as a guide. Fill half your plate with vegetables and fruit, one-quarter of your plate with whole grains, and one-quarter of your plate with protein rich foods.

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For more information:

- HealthLink BC – dietitian and other health information for British Columbians telephone 8-1-1 or www.healthlinkbc.ca
- Osteoporosis Canada – information about osteoporosis and treatment telephone Toll-free 1-800-463-6842 (English), 1-800-977-1778 (French) or www.osteoporosis.ca
- BC Guidelines: *Vitamin D Patient Guide* for information on vitamin D intake and *Osteoporosis and Fracture Prevention: A Guide for Patients*. Both found at: www.bcguidelines.ca
- BC Dairy Foundation Calcium Calculator - <http://bcdairyfoundation.ca/interactive/calcium-calculator>

Call to register for the **Prostate Cancer Supportive Care (PCSC) Program's** Nutrition and Exercise modules (Modules 3N and 3E). To find a PCSC Program near you, please visit: www.pcscprogram.ca.



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