



Trans Care

Medical issues

Trans people and osteoporosis

What is Osteoporosis?

Osteo means “bone,” and *porosis* means “porous” or “sponge-like.” Osteoporosis refers to bones becoming less dense and more spongy.

Throughout life, new bone is constantly being laid down (by bone cells called osteoblasts), and old bone is being broken down (by bone cells called osteoclasts). The balance between the process of new bone being created and old bone being taken apart is what allows bones to change shape as kids grow, and for the body to repair bones when they get broken. As a natural part of aging bone is broken down more quickly than it’s laid down, but in people with osteoporosis this is happening so quickly that the bones are fragile and vulnerable to breaking.

Osteoporosis can happen at any age but usually affects older adults. Among Canadians over the age of fifty, 25% of people born female and 13% of people born male – a total of 1.4 million Canadians – have osteoporosis. Often there are no symptoms until a bone fractures or breaks. Any bone can be affected by osteoporosis, but fractures most commonly happen in the bones of the wrist, hip, or spine. According to Osteoporosis Canada, of the 17,500 Canadians who had hip fractures

related to osteoporosis in 1993, 20% died within the year after the fracture.

While there are many factors known to contribute to osteoporosis, in most cases there is no clear single cause (*primary osteoporosis*). In *secondary osteoporosis* the disease happens because of another health problem. For example, some medical conditions affect the body's ability to absorb nutrients necessary for healthy bones, and some medications and medical conditions affect the hormones that are important in regulating osteoclasts and osteoblasts.

Are Trans People at Increased Risk?

The risks of getting osteoporosis depends on a number of factors, including age, bone density in early life, family history, calcium intake, how thin you are, ethnicity (people of Asian or European ancestry are at increased risk), physical activity, and levels of hormones that regulate bone density. Caffeine, alcohol, and smoking are believed to increase the risk of osteoporosis.

Not enough trans health research has been done to know whether trans people get osteoporosis more than non-trans people. **But:**

- estrogen and testosterone play a major role in maintaining healthy bones
- after removal of the testicles/ovaries it is not clear what dose of hormones is needed to protect bones
- it is unclear how well testosterone protects FTMs' bones (even if ovaries aren't removed)
- the trans community has a number of general risk factors, including smoking, alcohol use, barriers to physical activity, and lack of access to medical care (for prevention/screening)

Hormone use

Estrogen and testosterone are important regulators of bone metabolism. They influence the balance between osteoblasts and osteoclasts, helping increase the lifespan of osteoblasts while decreasing the lifespan of osteoclasts. Studies of non-trans people have shown that women with low estrogen and men with low testosterone are at increased risk for osteoporosis.

Trans people who are taking hormones are changing the balance of estrogen and testosterone in their bodies. Removal of the ovaries/testicles, the organs that produce most of the body's estrogen and testosterone, also changes hormone levels. There have been a few studies done on trans people (both MTF and FTM) to see what impact this has on bone density. Most of the studies only looked at the short-term impact (1–2 years), so there are still questions about the long-term effects.

MTF:

- For MTFs who have had their testicles removed, the body's natural levels of testosterone are too low to protect bone density. Stopping estrogen, taking too low a dose, or stopping and restarting can negatively affect bone density.
- Studies of MTFs who were taking estrogen found no negative changes to bone density. Researchers concluded that taking estrogen compensated for the decrease in testosterone.
- It is not clear whether just taking an anti-androgen (e.g., spironolactone) without estrogen is safe in terms of bone density. Non-trans men who have low testosterone have higher risk of osteoporosis. Decreasing the body's testosterone without increasing the estrogen could cause similar problems in MTFs.

FTM:

- FTMs taking testosterone for long periods of time may be at increased risk for osteoporosis. In some studies of FTMs, bone density decreased after starting testosterone.
- Some FTMs who can't take testosterone use Depo-Provera™ to stop their periods. Studies of non-trans women have shown that when used for a long period of time Depo-Provera™ negatively affects bone density.
- For FTMs who have had their ovaries removed, the body's natural levels of estrogen are too low to protect bone density. Stopping testosterone, taking too low a dose, or repeatedly going on and off testosterone may negatively affect bone density.

Do not stop taking testosterone/estrogen after your ovaries or testicles are removed, and only change the dose with the assistance of a trans-experienced nurse or doctor.

Other risk factors

Many trans people use smoking to cope with the stress of living in a transphobic world. Additionally, professional drag queens/kings and female/male impersonators who work in smoky bars are exposed to secondhand smoke. This is a concern as smoking negatively affects bones in a number of ways. Smoking reduces the amount of calcium absorbed by the bones and is toxic to osteoblasts (the bone-forming cells). Osteoporosis risk is 2.5 times greater for smokers than non-smokers, and smokers have 2–4 times more risk for hip fracture related to osteoporosis compared to non-smokers.

Alcohol is also a concern, as trans people have high rates of substance use and experience barriers to accessing addiction programs. Alcohol can deplete the body's calcium reserves and prevent absorption of calcium from food, change the levels of several hormones involved in bone formation, and be toxic to some kinds of bone cells.

Exercise mechanically stimulates bones to stay strong. Physical activity increases the load on the bones, and the bones respond by increasing in mass so the load can be spread over a larger amount of bone. As discussed in the booklet *Fit or Fatphobic?* (available from the Transgender Health Program), there are many barriers that make it hard for trans people to be physically active.

Prevention

You can reduce your risks for osteoporosis by:

- Taking estrogen or testosterone as they have been prescribed – not missing doses, cutting down, or stopping without first talking to a trans-experienced nurse or doctor.
- Eating a healthy and balanced diet.
- Cutting down or stopping smoking; avoiding secondhand smoke.

- Doing physical activities that involve being on your feet (“weight-bearing”), as well as those that increase strength, balance, flexibility, and coordination.
- Limiting your alcohol and caffeine intake.
- Getting regular health check-ups by a nurse or doctor.
- Talking with your doctor about medical options to prevent bone loss (e.g., calcium and Vitamin D supplements, medication) if you are in a high-risk group.

Everyone loses bone mass as they age. As you get older, it's important to take steps to prevent fractures as well as trying to minimize the amount of bone lost. Fractures most commonly happen from a fall. To prevent falls:

- Improve muscle tone and balance (exercise, yoga, Tai Chi, etc.).
- Avoid using alcohol, tranquilizers, sleeping pills, or other drugs that affect your balance.
- Have your vision checked regularly and wear glasses if needed.
- If you have balance problems, talk with a medical professional about using a cane or walker.
- MTFs/drag queens: don't wear high heels if you're unsteady on your feet.

Screening

Screening involves looking for disease before a person has any symptoms. In the early stages of osteoporosis most people do not have symptoms.

Canadian guidelines recommend that “all postmenopausal women, and men over 50” be screened for possible risk factors of osteoporosis. If there are two or more risk factors, a bone density scan is recommended to get a picture of bone density. It is uncertain whether FTMs who have had their periods stop because they are taking testosterone or had their ovaries removed, or MTFs who have estrogen levels similar to non-trans women after menopause, should be considered at the same risk as “postmenopausal women.” The Transgender Health Program recommends that the following groups be considered for bone density scans:

MTF:

- Taking estrogen on a regular basis: only get tested if there are other risk factors.
- Taking anti-androgens alone (without estrogen) for > 5 years: get tested after age 60.
- Testicles removed, not taking estrogen (or taking it occasionally): get tested after age 60.

FTM:

- No testosterone, ovaries not removed: get tested after age 60 (sooner if other risks).
- Taking testosterone for > 5 years: get tested after age 50 (sooner if other risk factors).
- Ovaries removed, not taking testosterone at all or only taking it occasionally: get tested, no matter what your age.

The most common bone density scan is called DEXA (Dual Energy X-ray Absorptiometry). The test involves lying on a table while a small x-ray detector scans your spine, one hip, or both. No injections are used and it is not painful. According to Osteoporosis Canada, the amount of radiation you're exposed to in a DEXA test is very small – the same amount as taking a plane from Toronto to Vancouver. If your DEXA scan is normal, repeat scanning in 2–3 years is recommended.

Treatment

Treatment for osteoporosis includes dietary changes (to increase your calcium intake) and gentle exercise to strengthen your bones and prevent falls. Your doctor or nurse may recommend calcium and Vitamin D supplements or medication. Bone scans every 1–2 years will likely be used to see how successful the treatment is.

Local Osteoporosis Resources

Osteoporosis Canada – BC Division

Office: 2075 West 37th Avenue, Vancouver, BC V6M 1N7

Phone: 604-731-4997 or 1-800-363-1933 (toll-free)

Email: osteobc@shawbiz.ca

Web: <http://www.osteoporosis.ca>

Osteoporosis Canada is a non-profit community organization that works to educate, empower, and support individuals and communities to prevent and treat osteoporosis. Services for the general public include free publications, a bilingual toll-free information line, education programs, and referrals to community resources. Information is also provided for health professionals.

Questions? Contact the Transgender Health Program:

Office: #301-1290 Hornby Street, Vancouver, BC V6Z 1W2

Phone/TTY/TDD: 604-734-1514 or 1-866-999-1514 (toll-free in BC)

Email: transhealth@vch.ca

Web: <http://www.vch.ca/transhealth>

The Transgender Health Program is an anonymous and confidential free service for anyone in BC who has a trans health question or concern. Services for trans people and loved ones include:

- information about trans advocacy, medical care, hormones, speech change, and surgery
- help finding health/social services, and help navigating the trans health system
- non-judgmental peer counselling and support
- information about trans community organizations and peer support groups



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For more copies, email the Transgender Health Program at trans.health@vch.ca or call/TTY 1-866-999-1514 (toll-free in BC) and quote Catalogue No. GA.100.Os7.