



Vitamin D and Calcium Intake

Results from the Older Adults Falls Prevention Survey, 2012

Purpose

In 2012, Ottawa Public Health (OPH) conducted the Older Adults Falls Prevention Survey to meet a need for local data on older adults' falls prevention behaviours. It surveyed 1,050 non-institutionalized Ottawa adults aged 65 years and older by telephone.⁽¹⁾ This fact sheet summarizes results on the extent to which Ottawa seniors do the following falls prevention behaviours recommended by OPH:^(2,3)

- **Eat at least three servings of calcium rich foods daily;**⁽⁴⁾ **and**
- **Take a vitamin D supplement daily.**⁽⁴⁾

A description of OPH, partner and community falls prevention services are provided at the end of the fact sheet. The results are intended to help service providers who work with older adults to tailor awareness and education campaigns on preventing falls, to support client education, and to inform program priorities and policy development.

Highlights of survey results

- Almost half (46%) of seniors take a vitamin D supplement daily.
 - Females and older seniors are more likely to take a vitamin D supplement daily.
- Approximately 27% of older adults in Ottawa are getting enough calcium.
 - Food is the preferred source to get the recommended daily calcium. Only 14% of seniors consume the recommended minimum of 3 servings of calcium rich foods daily.
 - If we consider those who reported taking a calcium supplement daily and consuming 2 servings of calcium rich foods daily, an additional 13% of seniors meet the recommended calcium requirement.

Background

Vitamin D and calcium are important for bone strength and to reduce the risk of osteoporosis, falls, and fractures in older adults.⁽⁴⁾

Canadians over the age of 50 should take a daily vitamin D supplement of 400 IU.⁽⁴⁾ Milk and some vitamin D enriched yogurt are good sources of vitamin D, and all margarine must be fortified with vitamin D in Canada.

To improve the likelihood that older adults get recommended amounts of calcium, Canada's Food Guide recommends that adults over the age of 50 consume at least 3 servings of calcium rich foods daily, namely milk products (e.g. milk, yogurt, hard cheese) and alternatives (such as calcium fortified soy, almond, or rice beverages).⁽⁴⁾ Fish with soft bones that are eaten such as sardines or canned salmon are good sources of calcium. Dark green vegetables such as kale, spinach, and cabbage provide some calcium as well. Calcium and vitamin D-fortified orange juices and some ready-to-eat cereals may also assist seniors in getting recommended amounts of calcium and vitamin D.⁽⁴⁾

Calcium supplementation is not recommended for all older adults because it is not as well absorbed as food-derived calcium and because it increases the risk of chronically exceeding the daily tolerable upper intake level, potentially leading to adverse health effects, such as kidney stones.⁽⁴⁾ Older adults should consult their health care professional to find out if calcium supplementation is right for them.

As reported in the *Perception of Falls Risk and Protective Behaviours Among Older Adults* fact sheet,⁽⁵⁾ two thirds (67%) of seniors think that eating three or more servings of calcium rich foods daily reduces their risk of falling. Just over half of seniors (53%) think that taking a vitamin D supplement daily reduces their risk of falls.

Results

Vitamin D intake

Table 1: Seniors' intake of vitamin D by social determinants of health, Ottawa, 2012

Population breakdown	Intake of vitamin D (%)
Ottawa Seniors	45.9% (42.7%, 49.1%) of seniors reported taking a vitamin D supplement every day in the past month.

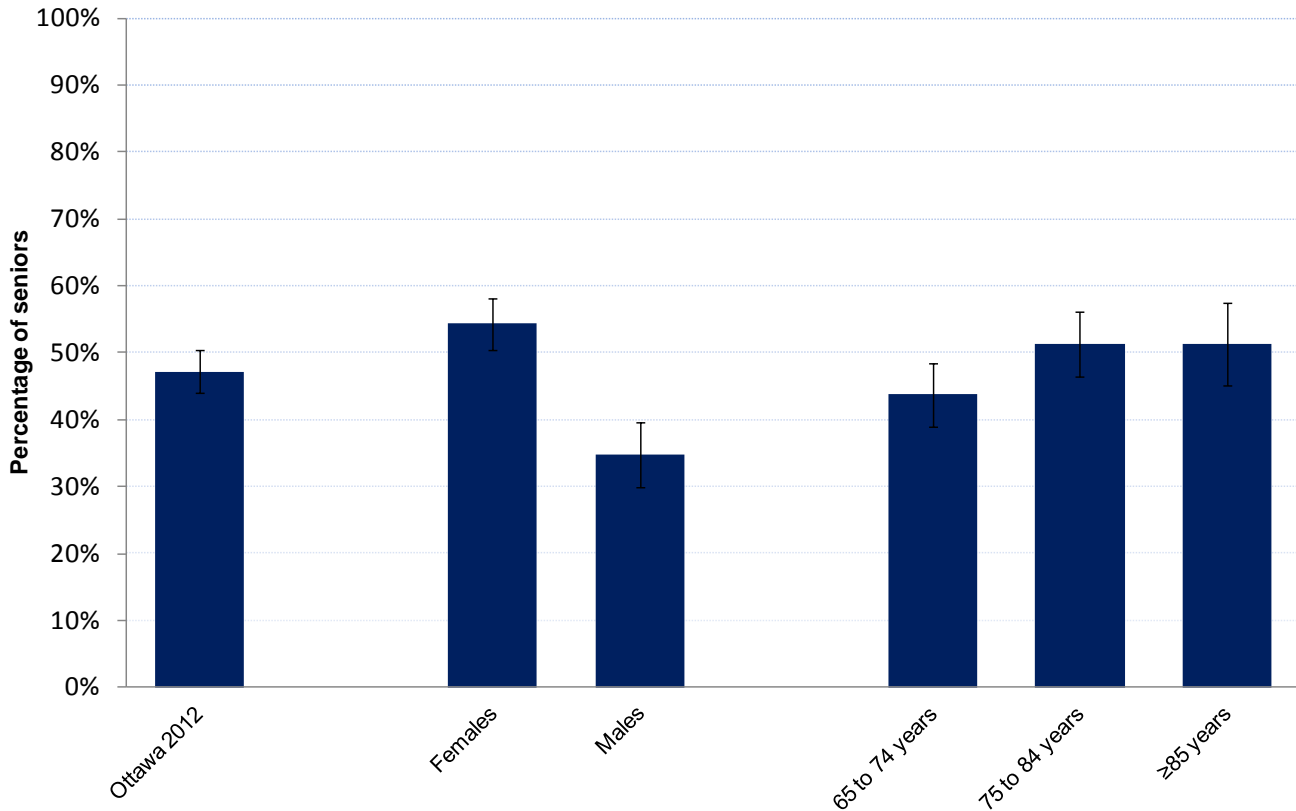
Social Determinants of Health

Population breakdown	Intake of vitamin D (%)
Sex	Females were more likely than males to report taking a vitamin D supplement everyday in the past month: Females (54.3% (50.4%, 58.2%)); Males (34.8% (29.9%, 40.1%)).
Age	Younger seniors were less likely to report taking a vitamin D supplement everyday in the past month: 65 to 74 years (41.4% (36.6%, 46.3%)); 75 to 84 years (50.9% (46.0%, 55.9%)); 85 years and older (51.3% (45.1%, 57.5%)).
Other	There was no difference in taking vitamin D supplements by education, income, mother tongue language or immigration status.

Data source: Older Adults Falls Prevention Survey, Ottawa Public Health 2012.



Figure 1: Percentage of seniors taking a vitamin D supplement daily, 2012



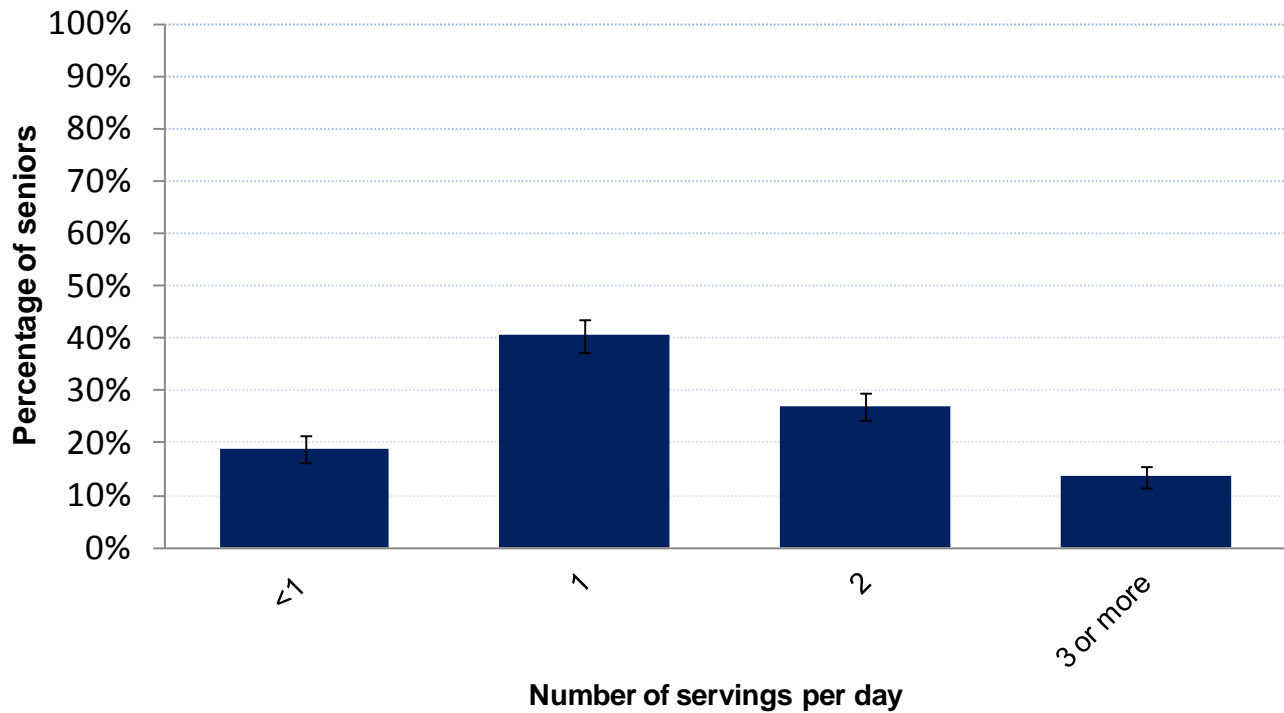
Data source: Older Adults Falls Prevention Survey, Ottawa Public Health 2012.

Data note: Only social determinants of health that showed a significant difference between categories are displayed in the figure. There was no difference by income, education, mother tongue language or immigration status.

Calcium intake

- 13.6% (11.6%, 15.9%) of seniors are meeting calcium recommendations and eating 3 or more servings of calcium rich milk products or alternatives daily (Figure 2).
- 18.8% (16.3%, 21.5%) of seniors reported consuming less than one serving per day of a calcium rich milk product or alternative.
- 40.6% (37.5%, 43.8%) of seniors reported consuming one serving per day, and 27.0% (24.3%, 29.9%) reported consuming 2 servings per day.
- There was no difference in calcium intake by sex, age, education, income, mother tongue language or immigration status.

Figure 2. Percentage of seniors consuming various servings of calcium rich milk products or alternatives per day, 2012



Data source: Older Adults Falls Prevention Survey, Ottawa Public Health 2012.

Most common calcium rich foods

- Milk, either in a glass, small carton/container or in a bowl of cereal was the most common type of calcium rich food consumed – 53.5% (50.2%, 56.7%) of seniors drank milk every day.
- 26.7% (24.0%, 29.6%) of seniors ate yogurt at least once a day and 17.9% (15.6%, 20.5%) ate hard cheese at least once per day.

Other sources of calcium

- 15.4% (13.2%, 18.0%) of seniors drank calcium-fortified orange juice once a day or more.
- 19.2% (16.8%, 21.9%) of seniors ate canned fish with bones twice a week or more.
- 47.2% (44.0%, 50.5%) of seniors reported taking a calcium supplement every day, either on its own or as a part of a multi-vitamin.
- A higher proportion of female seniors (54.1% (50.1%, 58.0%)) than male seniors (38.3% (33.2%, 43.6%)) took a calcium supplement every day.

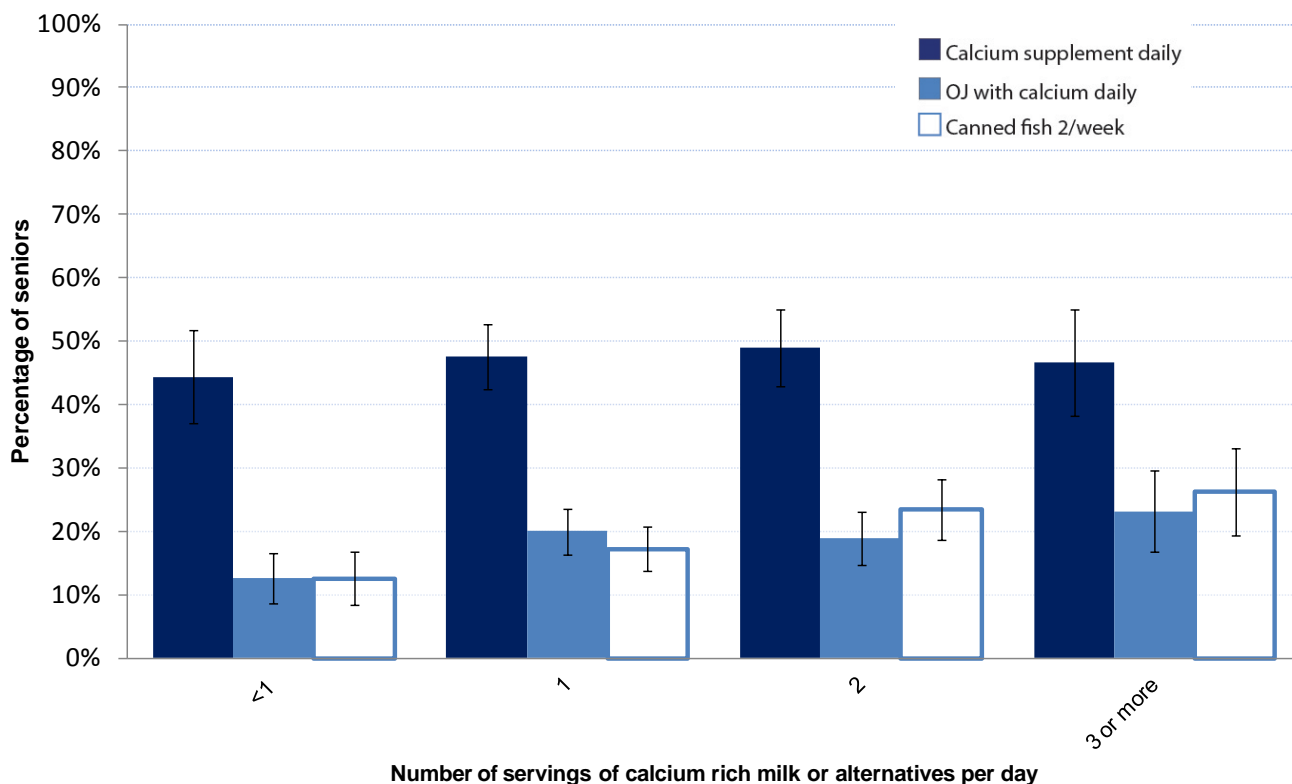
Others sources of calcium, in relation to calcium rich food intake

- Because the type and amount of calcium varies between supplements and calcium from supplements is not as well absorbed as food-derived calcium, it is hard to say if a supplement alone would provide enough calcium for an older adult to meet requirements.
- Among those who consumed 2 servings of calcium rich milk or alternatives per day, close to half (49.0% (42.9%, 55.0%)) reported taking a calcium supplement daily (Figure 3). This would make them likely to be meeting the recommended 1000-1200 mg of calcium per day.⁽⁷⁾ This represents an additional 13.2% (11.3%, 15.5%) of seniors who likely meet the recommended calcium

requirement on top of the 13.6% who reported consuming 3 or more servings of calcium rich foods per day, for a total of 26.8% (24.1%, 29.7%).

- Given that the tolerable upper intake level (UL) for calcium is 2000 mg per day among adults above 50 years old, it should be considered that those eating 3 or more servings of calcium rich products a day and taking a supplement may be at risk of exceeding the UL depending on the type and amount of calcium in the supplement, and other dietary sources of calcium. A calcium supplement would not typically be recommended for individuals already consuming 3 or more daily servings of calcium-rich foods.

Figure 3: Percentage of seniors who consume other sources of calcium by number of calcium rich milk products or alternatives consumed per day, 2012.



Data source: Older Adults Falls Prevention Survey, Ottawa Public Health 2012.

Implications for programs and practice

Everyone can play an active role in preventing falls, from the clinician and service provider to the planner and policy maker. For example, we can:

- Educate patients on the benefits of vitamin D supplements;
- Review menus and recipes to ensure adequacy of calcium rich foods (food services in retirement homes, hospitals, meals on wheels); and
- Develop programming for low-income older adults to access calcium rich foods and vitamin D supplements.

What Ottawa Public Health does

Ottawa Public Health (OPH) carries out individual, group and community-level interventions to engage and support older adults in reducing their falls risks and adopting healthy living practices. OPH efforts in addressing seniors' issues are enhanced by our relationships with community agencies and other city departments, for example, the Aging in Place Project in Ottawa Community Housing buildings.

Some of OPH's key activities include:

- The "Taking Care of My Health" Campaign and Community Awareness. Using a multimedia approach, the campaign includes articles in local newspapers, interstitials and messages on social media – information and tips posted on OPH website and Tweets.
- Education. Falls prevention messages, tips and demonstrations are also integrated into ongoing group education sessions and community events. These activities are carried out at seniors' apartment buildings, churches, seniors' centres and in other settings where seniors congregate.
- Screening Clinics and Referrals. Public Health Nurses organize and conduct screening clinics targeting older adults. The screening includes:
 - history of falls
 - gait and balance testing
 - postural hypotension

Older adults identified at risk for fall are referred to appropriate community resources for further assessment.

- The Friendly Corner is a health information and activity centre for seniors, managed in partnership with St. Laurent Shopping Centre, Ottawa Public Health, and a group of dedicated volunteers. A public health nurse and volunteers coordinate activities that promote healthy living enhance safety and independence for participants. For information call: 613-580-9620.
- Supportive Environments. Ottawa Public Health participates in key regional and citywide coalitions and committees to support the development of programs and policies that help reduce falls risks and improve overall health of older adults in Ottawa.

OPH's key messages for seniors regarding Falls Prevention:

Have an annual checkup:

- Have a regular health exam with your doctor or nurse practitioner every year and report any falls
- Review your medications with your doctor or pharmacist every year
- Have your eyes checked every year for changes in their health and vision

Be active:

- Take part in at least 150 minutes (2.5 hours) of aerobic physical activity every week
- Minutes count-be active in blocks of 10 minutes at a time
- Do strength and balance activities like lifting weights and Tai chi at least twice a week

Eat for healthy bones:

- Eat at least 3 servings of foods high in calcium every day
- Take a daily vitamin D supplement of 400 IU if you are over 50

Make your home safe:

- Keep your home well lit and free of trip hazards
- Remove scatter rugs and loose carpets
- Add secure grab bars in bathroom
- Install sturdy handrails that extend to the bottom on both sides of your stairs

For more information on healthy aging programs offered by Ottawa Public Health, to book a group education session and to find out about screening clinic locations near you call:

613-580-6744

1-866-426-8885

TTY: 613-580-9656

www.ottawa.ca/health

Community resources

There are also many resources within our community that encourage older adults to adopt fall prevention behaviours.

Falls Prevention resources:

West End Integrated Falls Prevention Program

- Works with seniors, health service and community agencies to reduce the number of falls and their impact on seniors, their caregivers and the health care system through: assessment and intervention for high risk seniors, education, information and health promotion, and best practices education for practitioners. <http://www.pqchc.com/seniors/falls-prevention/>

Regional Geriatric Program of Eastern Ontario

- The program is a coordinated network of specialized assessment, treatment and rehabilitation services for elderly persons whose well being, independence, or functional ability is threatened by multiple health or social problems. <http://www.rgpeo.com/en.aspx>

Community Care Access Center

- The program coordinates professional health and treatment program in residents' home. <http://www.ccac-ont.ca/>

Reference documents and supplementary resources can be found on:

- <http://www.champlainhin.on.ca/> Integrated Provincial Falls Prevention Framework & Toolkit
- <http://www.canadianfallprevention.ca/>
- <http://www.oninjuryresources.ca/>
- <http://www.findingbalancealberta.ca/>
- <http://www.preventfalls.ca/>
- <http://www.phac-aspc.gc.ca/seniors-aines/>

Nutrition resources for seniors:

- To make healthy food choices <http://www.eatrightontario.ca/> or call 1-877-510-510-2 to speak to a registered dietitian
- <http://www.dietitians.ca/>
- <http://www.hc-sc.gc.ca/fn-an/nutrition/vitamin/vita-d-eng.php>

Visit www.champlainhealthline.ca for more information on additional community resources and programs.

Survey methods and data analysis

In this fact sheet, older adults or seniors are defined as adults aged 65 years and older.

Ninety-five percent confidence intervals (95% CI) are presented following the population estimates in smaller font and within brackets (e.g., 75.5% (72.4%, 78.3%)). 95% CI are used to describe the precision of the population estimate.

Only statistically significant findings are included for demographic breakdowns (sex, age, education, income, immigration, and mother tongue). 95% CI were not used to test for statistically significant differences; Chi-square tests ($p < 0.05$) were used first, followed by a Bonferroni correction ($p < 0.05$) to adjust for multiple comparisons.

The asterisk (*) indicates a high sampling variability in the responses from seniors to this category and the findings should be interpreted with caution.

See the Older Adults Falls Prevention Survey Methods Fact Sheet for more information.

Acknowledgements

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