

HIGHLIGHTS

Do Canadians get enough sunlight to obtain the recommended vitamin D level?

Several guidelines recommend 1000 IU as the standard daily dose of vitamin D in adults, which can be obtained from dietary sources or synthesized endogenously from sun exposure. However, given the Canadian climate, geographic factors and sun protection recommendations, the authors of this study wondered if it was possible for Canadians to use only sunlight exposure to obtain the recommended level of vitamin D. They obtained ultraviolet index data for 13 sites from Environment Canada, and calculated sun exposure times required to synthesize 1000 IU of vitamin D in fair-skinned (type II) and dark-skinned (type V) people who exposed either one-quarter or one-eighth of their body surface area to the sun for each hour of the year (Table 1). These times were also classified as to whether the ultraviolet index was 3 or more (when sun protection is advised) or less than 3. During the fall and winter months and in more northern sites, ultraviolet radiation levels were too low for all skin types (types II and V) to use sun exposure alone to obtain enough vitamin D with one hour of exposure. In particular, people with darker skin (type V) who adhere to sun protection guidelines may not be able to synthesize 1000 IU during any month of the year at any site in Canada. Although sun exposure is an important source of

vitamin D, Canadians should look to other safe sources of vitamin D, such as dietary supplements and food rich in vitamin D to meet requirements, say the authors. *CMAJ Open* 2015;3:E258-263

Table 1: Minimal erythral dose (MED) for different skin types using the Fitzpatrick scale

| Type | Skin colour | MED, J/m ² | Description |
|------|------------------------------|-----------------------|--------------------------------------|
| I | White or very pale | 200 | Always burns, never tans |
| II | Pale white with beige tint | 250 | Always burns, sometimes tans |
| III | Beige to light brown (olive) | 300 | Sometimes burns, always tans |
| IV | Light to moderate brown | 450 | Rarely burns, always tans |
| V | Medium to dark brown | 600 | Rarely burns, tans more than average |
| VI | Dark brown to black | 1000 | Never burns |

Is autism spectrum disorder becoming more common?

Although the cause of autism spectrum disorders is unknown, it appears to be multifactorial. Both environmental and genetic components seem to play a role. The prevalence of the condition appears to be increasing in some geographic locations. The population of the Avalon Peninsula in Newfoundland and Labrador, accounting for over 50% of the provincial population, has a unique genetic make-up related to its founder population, with higher rates of certain conditions with genetic causes. The authors of this study looked at the incidence and prevalence of autism spectrum disorders in the Avalon Peninsula, using data from the one regional centre that provides comprehensive diagnoses for these conditions. From 2006 to 2010, the incidence of new cases increased from 10.1 to 16.7 cases per 1000 per year (an average of 54 new cases per year) (Table 2). By the end of 2013, the prevalence among children born in 2006 was 215.77 per 10 000, among the highest ever reported for a population in Canada, with a cohort prevalence of 1 in 46 for boys and 1 in 431 for girls. The authors conclude that this high rate of diagnosis supports

the need for a provincial autism spectrum disorder registry and further research on these disorders within this population. *CMAJ Open* 2015;3:E276-280

Table 2: Number of new autism spectrum disorder diagnoses in patients aged 0–14 yr in the Avalon Peninsula, Newfoundland and Labrador

| Year | No. of cases <i>n</i> = 272 | Incidence per 10 000 population (95% confidence interval) |
|------|--------------------------------|---|
| 2006 | 40 | 10.1 (7.2–13.7) |
| 2007 | 50 | 12.7 (9.4–16.7) |
| 2008 | 54 | 13.7 (10.3–17.8) |
| 2009 | 62 | 15.7 (12.0–20.1) |
| 2010 | 66 | 16.7 (12.9–21.3) |

Note: Denominator = 39 498 (average of census populations in 2006 and 2011).