

Vitamin D and Calcium: Tips for Dancers

Adequate Vitamin D and calcium are crucial to maintain proper bone health. In the last decade, Vitamin D deficiency throughout the world has risen dramatically.

- 77% of the population in the United States lack adequate levels of Vitamin D.
- In 2010, a study of dancers from Israel found that 94% had low Vitamin D levels.

Vitamin D enables calcium to be absorbed in the gut, rather than the body taking the calcium from the bones, which in turn prevents osteopenia or osteoporosis.

The primary source (90%) of vitamin D is from UVB rays from sun exposure. The amount of Vitamin D formation from the sun depends on the season, latitude, and skin color. Living closest to the equator allows for year-round Vitamin D production from the sun. However, as one progresses further from the equator, the UVB exposure diminishes during the winter months. Additionally, melanin blocks UVB light which diminishes Vitamin D production, so dancers with darker skin need longer sun exposure (up to 10 times as much) for adequate Vitamin D production. Furthermore, sun block or sunscreen with SPF greater than 8 also blocks UVB light preventing Vitamin D formation.

Ideally, if skin cancer is not a risk and sun exposure is not contraindicated by a physician, it is recommended to obtain 20 minutes of sun exposure on the arms and legs from 10 am – 3pm in lighter skinned dancers when UVB exposure is adequate. Beyond this short duration of sun exposure, safe sun guidelines recommend not going out in the sun without skin protection.

During the winter months, for those dancers living at latitudes greater than 42 degrees, dietary supplementation is likely essential.

The only natural food sources of vitamin D are:

- fatty fish (salmon, canned mackerel or tuna),
- cod liver oil
- egg yolks
- mushrooms that have been treated with UVB light
- some dairy products and cereals are fortified with Vitamin D, but this varies by country so be sure to check the labels.

Vitamin D levels are measured in the laboratory by checking the 25-hydroxyvitamin D level in the blood.

In the US, current guidelines define:

- **Deficiency** as a level <20 ng/ml
- *Insufficiency* as 20 – 30 ng/ml
- Normal as 30 – 80 ng/ml

In 2010, the Institute of Medicine increased the Vitamin D adequate intake levels (Table 1). Ideally, supplementation should be in the form of **Vitamin D3**.

Table 1: 2010 Institute of Medicine Daily Adequate Intake of **Vitamin D**

Age	Vitamin D (IU)
0 – 1	600
1 – 70	600
> 70	800
Pregnancy	600

Source: *The Institute of Medicine*

- Peak bone mass is reached between the ages of 18 – 30 years.
- Adequate calcium intake is essential for the formation of bone.
- The Institute of Medicine recommends the daily adequate intake of calcium based on age (Table 2).
- Calcium can be found in a variety of food sources such as dairy products, sardines, broccoli, and spinach to name a few.
- If, adequate calcium cannot be obtained from the diet, then a supplement should be taken.
- Calcium carbonate tablets should be taken with meals and are best absorbed when taken in doses of 500mg or less. Calcium citrate can be taken without food and is generally more easily digested

Table 2: Institute of Medicine Daily Adequate Intake of **Calcium**

Age	Calcium (mg/day)
9 – 18	1300
19 – 50	1000
51 – 70	1200
> 70	1200
Osteoporosis	1500

Source: *The Institute of Medicine*

Disclaimer:

The information on calcium and vitamin D tips listed above are to help guide and inform the dancer, it is not meant to take the place of the advice of a medical professional. This information is provided by Dance/USA Task Force on Dancer Health.