

Vitamin D

Vitamin D is one of the fat soluble vitamins, alongside A and E, and most recognised for its role in the strengthening of bones. Vitamin D also carries a powerful antioxidant effect. As an adult, low vitamin D status can progress to 'osteomalacia' - a weakening of the bones associated with bone pain and muscular fatigue. Dietary intake may not be sufficient alone to prevent risk factors associated with deficiency and some athletes may benefit from supplementation.

Vitamin D can be found in organ meats such as liver and kidneys, cheese, egg yolks and is used to fortify breakfast cereals. Vitamin D can also be found in fatty fish or fish oil supplements but you should avoid cod liver oil if you are pregnant since it also contains high amounts of vitamin A that can be damaging to a developing foetus.

Although vitamin D may be obtained from dietary sources; the vast majority of your vitamin D is produced inside your own body as the skin reacts to UV rays from the sun. The Scientific Advisory Committee on Nutrition (SACN) released a report stating that the amount we consume from food isn't enough to maintain adequate function - instead we need 20 minutes of exposure to sunlight with tee shirt sleeves and uncovered faces EVERY DAY to generate our own stores or you can take the advised 10mcg as a supplement. 10mcg is considered the minimum to maintain healthy stores but where there is chronic underexposure to sunlight - see 'everyone in the West of Scotland' - larger volumes may be required.



From a training perspective, adequate stores of vitamin D will allow adaptive change in the skeleton to occur in response to training. As you lift weight or apply impact stresses to the bones you create microscopic fractures in their structure. The body responds in accordance with Wolff's Law: rebuilding the bones, denser and possibly thicker, making them more robust to future stresses. Vitamin D also acts to regulate immune function, cell growth inflammation and protein synthesis.

On a basic level, this means that the bones, and therefore you as an athlete, can support more load and get stronger. It reduces the risk of stress fractures and 'avulsion' fractures (where the muscle tears the ligament or tendon out of the bone) during training and helps all athletes to lay down additional bone mass.

Females are particularly susceptible to losing bone mass as they get older and it is therefore important to build as much bone mass as possible throughout the 20s and 30s and then to maintain that mass and the activity associated with building and preserving mass for as long as possible in order create a hedge against osteoporosis in later life.

Older athletes are particularly susceptible to deficiency of vitamin D and studies demonstrate improvements to muscle strength and performance in vitamin D deficient athletes in their 70s after supplementation (Verhaar et al. 2000).

The CrossFit Glasgow Store stocks Puori tablets which give a dosage of 62mcg, they are contained in a dark capsule to prevent spoiling and bound in coconut oil that helps with storage, absorption and flavour (if you bite them). These can be taken every day and will help you to maintain bone health and develop greater bone density with concurrent strength training.



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References:

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