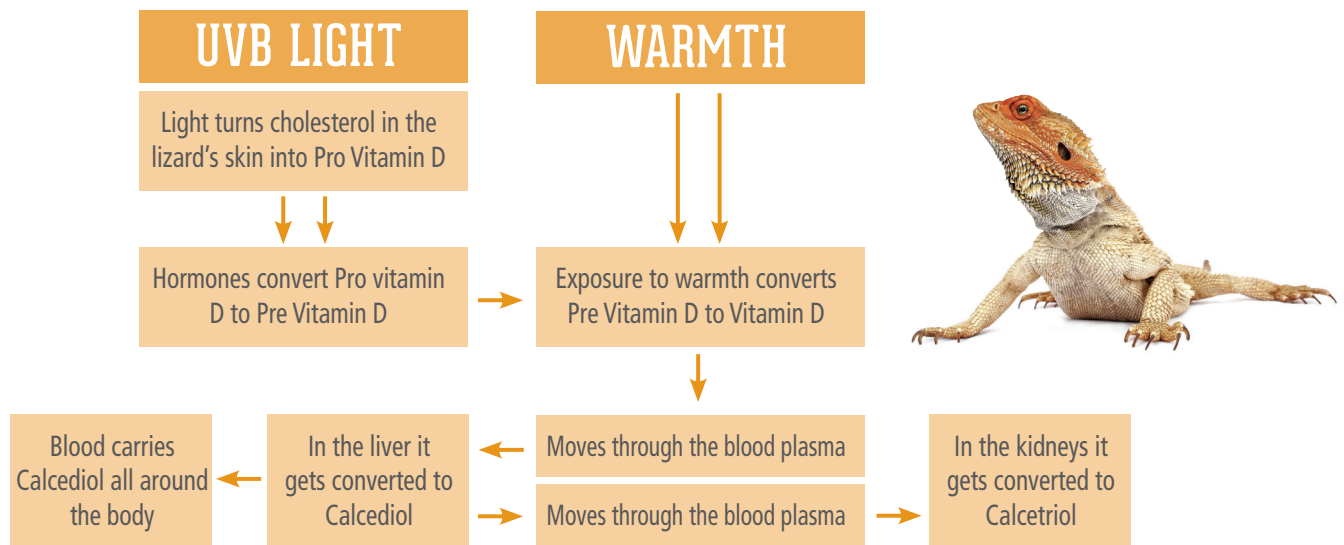


THE D3 CYCLE

www.arcadia-reptile.com/the-d3-cycle



The D3 Cycle is a chemical and hormonal change in the body of an animal, which goes on to produce vitamin D3. This is a biological process that is dependent on many external factors including access to natural light, heat, cool and rest. It is worth noting that although vital to the well being of reptiles, UV exposure plays many more roles in the body than just the D3 cycle. Impacts on sight, breeding and mental well being are all documented and are undergoing continued research.

This amazing process begins when a cholesterol called pro vitamin D(7DHC) is produced in the animal's skin (it is a natural process in humans too). When this cholesterol is exposed to natural light (including light in the UVB wavelength (290-315nm)), this cholesterol is turned in the skin membrane into pre vitamin D.

After exposure to warmth, this newly manufactured pre vitamin D is converted (in the skin membrane) into vitamin D3. It is essential to have this heating up period alongside UV radiation. Vitamin D3 is then sent out into the blood plasma and is bound with a vitamin D binding protein. This is then carried to the liver where this part of this vitamin is converted to a hormone called calcidiol (25-hydroxy vitamin D3).

The blood carries this calcidiol all around the body and into the kidneys where some of the hormone is turned into another hormone, called calcitriol. This compound then plays an essential role in calcium metabolism and controls the levels of calcium in the blood. Calcitriol also plays a huge role in the immune system and the cardiovascular system. It has been shown to lower the risk of cancers in the body and skin.

So we can see that exposure to natural sunlight is only the start of this amazing ability in reptiles and humans alike, to turn sunlight into life saving vitamins. This D3 cycle is dependent on the completion of the D3 cycle. If part of the cycle is missed out then the cycle cannot be completed properly. Changes and reactions would also be unable to be completed properly. This would result in an under provision of essential vitamins and hormones, and if supplementation were not used, a calcium crash could happen.

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Taken from "GUIDE TO MBD AND ITS ELIMINATION IN CAPTIVITY."