

Cyanocobalamin, cyanide and apple seeds

There are lots of idiots on the Interwebs saying that cyanocobalamin is dangerous because it releases cyanide. It does release cyanide, but in insignificant amounts.

The molecular weight of cyanocobalamin is 1355. That of cyanide is 27. And one molecule of cyanocobalamin can produce one molecule of cyanide.

So 1355 mcg of cyanocobalamin will produce 27 mcg of cyanide. And 1000 mcg of cyanocobalamin will produce 20 mcg of cyanide.

The lethal dose for an average human is 1500 mcg per kg of body weight. So a total lethal dose will be about 105,000 mcg – **about 5,000 more than that from a single injection of cyanocobalamin.**

Apple seeds contain a compound called amygdalin, which can also produce cyanide. Amygdalin has a molecular weight of just 427 so 1000 mcg of amygdalin can produce about 63 mcg of cyanide.

[1g of apple seeds contains about 2 mg \(2000 mcg\) of amygdalin](#) – so 1 g of apple seeds can produce about 118 mcg of cyanide.

[One apple seed weighs about 0.027 g.](#)

So one apple seed can produce $0.027 \times 118 = 3$ mcg of cyanide.

Or, a 1000 mcg dose of cyanocobalamin can produce the same amount of cyanide as 7 apple seeds.