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## **Why adding Vitamin C to your dog's diet is not always a wise thing to do...**

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### **The dog's internal production of Vitamin C (Ascorbic Acid)**

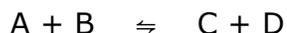
In their bodies, dogs produce about 40 milligrams of this vitamin per kilogram bodyweight - or 18 milligrams per pound. A 40-pound dog thus produces the equivalent of about two big tablets (500 milligrams) per day! A dog the size of a human would produce about 6-8 of those big 500-mg tablets per day - a huge dose, even compared to what a human needs!

Research has shown that, for dogs as well as for people, a large overdose of Vitamin C can significantly boost the immune system and help the body to a fast healing of many injuries.

Form there, it makes sense to conclude that extra Vitamin C is good for people. But it does not make sense to make the same conclusion for dogs...

### **Some fundamental body chemistry**

In order to understand this, you need to understand some fundamentals of chemistry. Let consider two chemicals, A and B, who react with each other to produce the products C and D. Let's assume we have a nice equilibrium with A and B in balance with C and D:



This means that every time a molecule of A meets a molecule of B, they may combine and produce C and D - or depart again as A and B. Same thing with C and D. When two representatives of them meet, they may react with each other and regenerate A and B. But they could also remain C and D. We have equilibrium when we cannot measure any changes of the total concentrations of any of the four chemicals. That equilibrium is maintained through a constant chemical activity through two reactions that exactly oppose each other.

When we have achieved equilibrium, we can watch what happens when we add more of A to the mixture of the four: This will greatly increase the chances of a B molecule meeting an A molecule, so we will have a greater likelihood of B molecules reacting with A molecules. The result of this will be that our addition of A will consume a big chunk of what was left of B - and produce more of C and D!

But if we instead add a large amount of C, then the process will "run the other way",

and the excess amount of C will react with a big portion of D to generate more of both A and B.

So, in essence, *when we add C*, the result in the body is *a reduction of D!*

### **The problem with supplementing...**

The bad news is that we do not know in detail the specific chemical reactions in the dog's body that produce Ascorbic Acid, which could be chemical C in our example above. We also do not know what other chemicals are generated along with Ascorbic Acid in the process - the D's are unknown. Some of them could be very important for the dog's metabolism, though - we don't know!

But we do know that, whatever those D's are, they will cease to be produced when we add significant amounts of Vitamin C to our dog's diet! And we do know that when we constantly supply Vitamin C to a dog, it will shut down its own ability to generate this vitamin, maybe permanently.

### **Getting the perspective right**

Now, 18 milligrams per pound body weight is quite a lot... You cannot feed enough fresh fruits to ever reach more than about few percent of that! So, feeding fresh fruit will *not* cause a shutdown of the body's internal productions.

However, there are many people who have seen great effects of using Vitamin C supplementation in large doses to deal with a specific problem, like an infection or injury, and they then conclude that it is great to continue doing it...

On a temporary basis, this can be OK. But the chemical laws involved in this are as fundamental as gravity - there are NO EXCEPTIONS! The danger, of course, is that you may not see the effects of the shutdown immediately - in fact, you might not see it until many months or years later, and then you will have no clue about connecting the problem to your supplementing an unnecessary ingredient.

The bottom line is that you should NOT add vitamin C to a dog's diet at all, unless you have a very specific acute target (infection, injury) as the reason. In those cases, please help your dog fight the infections faster by giving it some huge amounts of Vitamin C over the few days it takes to get well - and then stop the supplementing again! Use it as you would take antibiotics for yourself.

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