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Avoiding health risks – or living with them?

It is natural to want to avoid risk, especially when it comes to health. However, few people realize that for every one risk you avoid, you incur another one. You cannot eliminate risk. All you can do is trade one risk for another. By doing this wisely, however, you can dramatically reduce the overall risk of health problems – and increase the chances of a good life in great health!

What is “risk”?

Risk is always a combination of two factors:

1. An unfortunate and possible **consequence** of an action or omission.
2. The **likelihood** of the unfortunate event happening.

The first factor is “the price we might have to pay”, and we can often express it in financial terms, but when we talk about health, the price is most often some kind of suffering – or death.

The second factor is also a prediction – and it should be based on statistics. Likelihood is always a number between 0 and 1. “Zero” means that the event will never take place. “One” means that it will take place with complete certainty.

You should note that the overall **risk is always the product of those two factors**, so the likelihood will, in effect, *reduce* the ultimate price.

Examples of general risks we all know...

You can get killed in a car accident – without being at fault at all. All it takes is that you meet an idiot that hits you head-on. This *could* be the price you might end up paying for driving downtown to get a burger, yet you probably still drive your car...

The reason is that we do not consider the likelihood very big. Statistics show that you have a chance of about 500 parts per million (=0.000,500 or 0.05%) of being involved in a car accident every year (the number covers Europe, North America, and Australia, not third-world countries that typically have a much higher risk...). And about 20% of those accidents have fatal consequences. So the likelihood of getting killed in traffic is about 0.000,100 (or 100 ppm). Small enough for most of us to accept it – because the benefits of being able to move freely are just too great!

Another risk than has a much greater likelihood is *being killed in war...* The stats from USA’s engagement in Vietnam show that, when the action was on its highest, a total of 500,000 Americans were in Vietnam. Every year, about 10,000 got killed. That gives an average likelihood of $10,000/500,000 = 0.02 = 2\%$ of not returning

alive from a "visit" to Vietnam that would last a year, and 4% if it were to last two years. However, the number of deaths in Vietnam, however scary, is still *smaller* than the number of people in the USA that get killed every year by all kinds of *other* accidents, including traffic and work related accidents....

Now let us go to another extreme – with a very small risk: cigarette smoking. From statistics, we know that smoking one cigarette gives you a death risk of only 0.5 ppm – just a tenth of the risk of getting killed in traffic! But that risk adds up.... When you smoke, say, 20 cigarettes per day, then your risk of dying from your addiction increases to $0.0000005 * 20 * 365$ per year = $0.00365 = 0.365\%$. Now, this is still only a fraction of the risk of getting killed in the Vietnam war – but soldiers generally did not stay there for more than one or two years – so if you smoke for about 10 years, you have the same risk of dying from that as a US soldier in Vietnam had for getting killed! In fact, the number of people in the USA that every year die from smoking and the diseases that are directly caused by it is still much higher than the total number of casualties in the entire Vietnam war!

The common daily dog killer

Let's first discuss the risk of poisoning. It is very similar in its nature to smoking. Smoking is actually a continuous poisoning of the body. So is eating kibble....

The preservation chemicals in kibble are in fact much worse for a dog to ingest than the poisons in tobacco smoke for a human! Those preservation chemicals are generally *illegal* to add to human food for that same reason! There are studies that show that dogs fed even the "best" of kibble will have an overall life expectancy of only 65-70% of the life expectancy of a dog that is fed a raw natural, well-balanced diet.... This is cutting 15 years down to 10. It gives us a death risk of about 3% per year – or close to 0.01% per day.

Kibble eating is in the same order of magnitude of risk as being a soldier in Vietnam!

Protecting against deadly diseases

We know that vaccination is risky. (The vaccine manufacturers actually do have statistics that show what the risk is, although your vet does not want to tell you...) However, we also know that if the dog gets infected with Distemper, it will have a death risk of 50-85%. Most dogs simply do not make it through that disease....

So, what is the likelihood of getting it? Well, it could be significant – but it also could be totally negligible! If you do live in an area (or you go to visit such an area) where Distemper is around, then the risk of contracting it can be high, simply because it is a virus that travels by air. There was an example in Switzerland in 1984 that involved some 500 cases of Distemper – out of a total population of some 5 million dogs in the country. Now, this looks as if it gives us a fairly low risk of about 100 ppm – but that assumption is wrong. We should only count the dogs that had *not* been vaccinated, as it is well documented that the vaccine, when given alone and not repeated, is very effective. So, that reduces the number of dogs to only 2% of the 5,000,000. This gives us an estimated risk of $500/(2\% \text{ of } 5,000,000)$

5,000,000) = 0.02 = 2% per year. Just about the same likelihood as the chance of getting killed in the Vietnam War!

Let's compare that to the risk of vaccination. Out of 5,000,000 dogs vaccinated in Switzerland that year, only 20 came down with a deadly form of Distemper. That's very good news, as it brings the likelihood down to around 100 ppm. This makes the risk of getting killed by *Distemper vaccine* comparable to the risk of getting killed in traffic. So vaccinating against Distemper, compared to *not* vaccinating, is equivalent to trading service as soldier in Vietnam with average driving of a car in North America, in terms of the risk involved.

However, two complications that are worth also noticing here: In the Swiss case of about 500 cases of distemper, about 300 of those were *vaccinated*! But they were vaccinated with "combi-shots" that contain more than one vaccine.... At that time, this was quite new in Switzerland – the total number of dogs that had this kind of vaccination would not have been more than about 2% of the dog population, or less. But that reduces the level of protection you get from a "combi-shot" very dramatically – it actually renders the dog *worse off* than by not being vaccinated!!! (The total number of unvaccinated dogs was about the same as the number of dogs that had "combi-shots", yet the number of casualties among the dogs that got the "combi-shots" was greater!)

Another vaccine example: Lyme disease. This disease is a bacterial infection in the nerves, transferred through a special tick, and it can lead to chronic nerve damage if not treated. However, if treated in its early stages (which are quite easy to diagnose and easy for the owner to discover), it is *fully curable*. So, what's the point in vaccinating? The dog's life is not at risk unless the owner is negligent – the only serious risk here is the owner's wallet, as the treatment does cost some money in veterinary fees...

But, if vaccination had an extremely low risk, it might be reasonable to vaccinate. However, the Lyme disease vaccine is known to have caused more damage to dogs than actual cases of the disease! The vaccine is very far from safe, and comparing to the fact of the disease itself being very rare, using such a vaccine makes no sense, unless you live in an area that is heavily infested....

In order to find out if Lyme disease truly is a threat to your dog, you need to do your own research, as your vet will not very likely know (or want to tell you). In the year 2000, you could see signs at the entrance to all parks in the area of Vancouver, BC warning dog owners about Lyme disease: the tick that carries the disease had been spotted in the parks! Similar warnings were displayed in all veterinary clinics. Right – but no words about those ticks actually being *infected* with the disease... In fact, they were not. Not a single example of Lyme disease had been known in Canada, west of Ontario, more than 2,000 km away, for the past decade!

To guard or not to guard for heartworm...

Heartworm prevention is another example where you have to be careful about assessing your risk by doing it, compared to your risk by not doing it. Heartworm is certainly a nasty parasite – and there are many examples of dogs being killed by

those beasts. On top of that, if your dog gets heavily infected, the cure is very dangerous, killing about 5% of the patients. However, this is only for heavy cases. If you get the diagnosis made early, the cure is not life threatening per se – but it does toll on the body. The medicine is a poison that kills the worm or the larvae, and that poison also does significant damage to the dog's body, particularly the liver. Like smoking or eating kibble, the damage from a single treatment is not big (although much bigger than both of those!) – but when you *repeat* it, for instance by using the prevention medication on a regular basis, the damage is very significant – and it will cause severe likelihood of shutdown of primary body functions in a matter of 3-5 years. In reality, heartworm prevention can often cut your dog's life expectancy in half...

There are alternatives that are far less risky. The best one is to take a blood sample a couple of months after a possible exposure and then treat the possible worms that might be there. That treatment is just about tolling the same on the dog's body as the prevention does, so there is no point in keeping the dog on constant prevention, particularly not when you know that the heartworm mosquitoes (from which the dog gets the infestation) cannot hatch unless they have a least 30 days in a row where the temperature never drops below 16 degrees Celsius (60 degrees Fahrenheit), *nights included!* There are many parts of North America where this simply never happens! And also many parts where it happens only in August!

An example: Ontario is the only province in Canada where heartworm cases exceed 10 per year. (Click [here](#) for the official report from the Canadian government). In this province, there were 354 heartworm cases reported in 2002 from 1154 veterinary hospitals – out of 317,182 tests done! That leaves us with only 0.1% of all tests showing infestation. If you calculate the likelihood on the correct basis of the about 7 million dogs, and take into account that the number of clinics were only about half the total in the Province, then it is down at $354 / (7,000,000 / 2) = 0.000,100 = 0.010\%$ – or about twice the risk of having a traffic accident... Further, about 5 of the dogs that tested positive for heartworm had been on heartworm prevention! The total number of dogs on prevention (among the clients of those 1154 hospitals) is estimated to be around 50,000, so this too gives a likelihood of 0.010% of getting heartworm, *regardless* the preventive medication!!! Now, because of the very small number of cases, this number has a significant uncertainty – but it remains a fact from these numbers that the effect of the prevention is dubious, at best, no matter what your vet wants to tell you...

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