

## Vaccines and arthritis: should we worry?

Yearly vaccinations have long been recommended as part of responsible dog ownership. While we know that vaccines have risks, a quick google search on the topic of vaccines and arthritis might make you rethink your yearly booster appointment.

Here, we look at the controversy. Is it justified? Should you worry? Should you cancel your appointment?

### What does google say?

The highest-ranking searches are from people who believe that vaccination causes arthritis.

Their theory goes that when vaccination stimulates the immune system, the body reacts by attacking itself, resulting in long term damage to the joints. And, furthermore, they ask, why did we not see as much arthritis before routine vaccinations were introduced?

To address this, we first need to explain what exactly we're all talking about.

### So what actually is arthritis?

*Arthritis* literally means 'inflammation of the joint'. There are several forms of arthritis but the ones relevant to this debate are osteoarthritis and immune-mediated polyarthritis (read about the other forms of arthritis [here](#)).

*Osteoarthritis* - also called 'degenerative joint disease' and often referred to simply as 'arthritis' - is an inflammatory condition affecting the joint cartilage. It usually occurs as a result of wear and tear.

*Immune-mediated polyarthritis* (IMPA) - sometimes called just 'polyarthritis', meaning inflammation of multiple joints - is a condition, where the immune system overreacts to a stimulus and targets the body's own cells, causing damage to the joints.

### What is vaccination?

[Vaccination](#) is the introduction into the body of a small amount of material that resembles a disease-causing organism. The immune system attacks the material and then “remembers” it in order to rapidly recognise and fight the organism in the future. Think of boosters as regular “reminders” to the immune system.

## **How frequently do we vaccinate dogs? And what do we vaccinate against?**

It varies depending on the location and lifestyle of the dog. As a general rule, 8-week old puppies are given a combined vaccination of canine distemper virus, canine adenovirus (hepatitis) and parvovirus. The vaccination is repeated 2-4 weeks later, and again one year after that. These are called the ‘core’ vaccinations, which are those recommended for all dogs. Boosters of the ‘core’ vaccinations are then given every 3 years.

Leptospirosis is a ‘non-core’ vaccination but, as the disease is common in the UK, it is usually recommended. After the initial 2 puppy vaccinations, the leptospirosis booster needs to be given every year because it has a shorter duration of action. Other ‘non-core’ vaccinations include kennel cough and rabies, for example, and are given as required.

## **What is the link between vaccination and arthritis?**

There are no studies linking osteoarthritis to vaccination. There have, however, been several studies looking at an association between vaccination and IMPA. Because IMPA is uncommon, all studies were limited by small numbers of cases and all recognised the need for larger studies.

A 2003 [study](#) found 27 dogs with IMPA (out of tens of thousands of possible cases over a three-year period), 4 of which were suspected of being associated with vaccination. Subsequent studies, however, did not find an association; a 2004 [study](#), looking at 39 cases over 5 years (again, out of a potential population of tens of thousands) was unable to confirm any involvement of vaccination in the development of IMPA, and a 2018 [study](#) comparing the vaccine history of 39 dogs with IMPA with a control group of 78 dogs with other conditions, found no link between the timing of vaccination and type 1 IMPA.

After extensive use, four of the 5 UK vaccine suppliers have no reports of IMPA following vaccination. One supplier has reports of immune-mediated disease, which includes IMPA along with haemolytic anaemia and thrombocytopenia, in fewer than 1 in 10,000 dogs.

### **Is it possible that there is an association between vaccination and IMPA but we just haven't confirmed it yet?**

Yes, and that is why larger studies are needed. But, remember, IMPA is rare and vaccination is extremely common so an association should not be too difficult to confirm.

### **Let's say, for the sake of argument, that vaccination is associated with IMPA, does IMPA lead to osteoarthritis?**

Maybe. It would be difficult to prove because there are so many contributing factors in the development of osteoarthritis.

It makes sense that something affecting a joint in the short term could affect it in the long term. And we know that untreated or unresponsive IMPA will lead to joint damage but what we don't know is whether self-limiting or treated IMPA causes any joint damage. The research in this area is sparse, however.

What we do know is that approximately 20% of all adult dogs are affected by osteoarthritis. The low numbers of IMPA (see above) could not possibly account for that number of cases.

### **So does vaccination cause osteoarthritis?**

There is no evidence to support this claim.

Ironically, part of the reason osteoarthritis is so common today is that our pets are living longer as a result of the protective effects of vaccination against life-threatening diseases.

We all know that vaccines have risks, however low, but, as far as the evidence shows, osteoarthritis is not one of them.

## **Should I cancel my appointment?**

The amount of contact you have with your vet is entirely your decision but annual check-ups are about more than just vaccination. They are general health checks where the vet can detect distressing conditions like osteoarthritis early and help slow the progression.

It's a chance for you to discuss any concerns you have and to put your mind at rest about unsubstantiated claims.

In today's polarised climate, it is important to remember that vets love dogs; in fact, we *all* love dogs - vets, breeders, owners - and we all want what's best for them. So if you are worried about anything, talk to your vet, dog-lover to dog-lover.