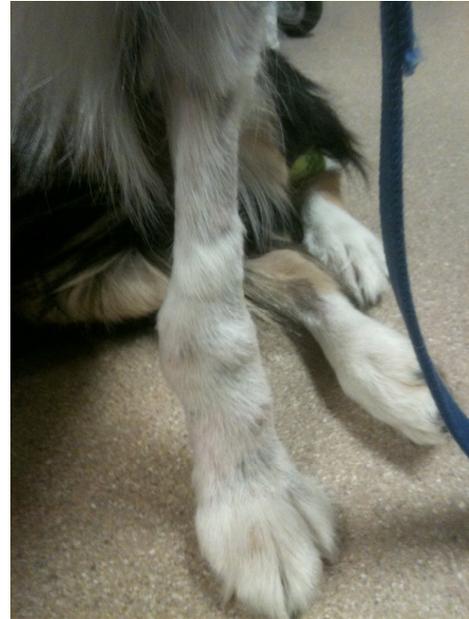


# Polyarthrititis



Cotton: immune-mediated polyarthrititis



Swollen carpus (wrist) due to polyarthrititis

## What is polyarthrititis?

Polyarthrititis (PA) is the simultaneous inflammation of multiple joints in the body (arthrititis is inflammation of a joint). PA is caused by the excessive influx of inflammatory cells into the tissues of the joint as well as the influx of inflammatory cells into the joint (synovial) fluid. The inflammatory cells disrupt the normal architecture of the synovial (joint) lining as well as the composition of the synovial (joint). This causes the release of substances within the joint that create significant inflammation, swelling, and joint discomfort or pain. The clinical signs that each animal displays may vary from patient to patient and is dependent upon the severity of the inflammatory process as well as the number of joints involved. In most dogs and cats, the joints most likely to be affected include the carpi (wrists), tarsi (hocks), and then to a lesser extent the elbows, stifles (knees), and other joints.

## What causes polyarthrititis (PA)?

The answer to this question is a bit complex in that there are several different forms of polyarthrititis and numerous possible causes. Laboratory testing, joint taps, and other diagnostics are needed to identify the given cause(s) in an individual. In general, there are three major forms of polyarthrititis in the dog and cat:

### 1. Degenerative polyarthrititis

Degenerative causes of PA usually occur secondary to ageing changes of the joints and are more common in the physically active as well as older dogs and cats. This form of arthritis is usually milder and not accompanied by severe fluid accumulation in the joints. Degenerative PA can usually be managed with dietary measures, nutraceutical (nutritional) supplements, joint supplements, and pain medications.

## 2. Erosive polyarthritis

This form of PA is characterized by significant loss of bone within the joint (detectable on x-rays of the joints). Erosive PA is less common than other forms, and is most likely to occur in small breeds of dogs as well as cats.

## 3. Non-erosive polyarthritis

This form of PA is associated with significant inflammation within the joints with no loss of bone. Non-erosive PA is the most common type diagnosed in the dog. Possible causes include infection (viral, bacterial, rickettsial, protozoal, fungal and other organisms), primary immune-mediated disease (such as systemic lupus erythematosus), secondary immune-mediated disease (triggered by drugs, vaccines, or disease of other organ systems), and idiopathic immune-mediated disease (where despite extensive testing, no triggering cause of the immune-mediated disease is found).

**Immune-mediated** disease means the body's immune system suddenly sees parts of the normal body as "foreign" and launches a "self-attack". In the case of immune-mediated PA (IMPA), this "self-attack" is launched against the normal tissues of the joints. This is associated with the infiltration of inflammatory cells into the joints, increased joint fluid production, inflammation, and pain. In some patients, it is theorized that underlying triggers (such as those mentioned under secondary above) serve to alter the normal appearance of the joint cells such that they now appear as "foreign." In other cases, no triggering cause is found despite a thorough history and diagnostics. In these cases, the IMPA is called "idiopathic". Idiopathic IMPA accounts for a large percentage of cases of PA diagnosed in the dog and cat.



Upper joints: (green arrows) affected less often than lower joints: (pink arrows) with polyarthritis

### What are common clinical signs?

Clinical signs of PA are quite diverse. They depend in part on the severity of the inflammation within the joints, the severity of associated joint effusion (fluid accumulation), and the number and type of joints affected, and other concurrent problems (ie, obesity, degenerative joint disease, previous surgeries, etc.). Each animal is individual in regards to the signs and discomfort they show with this disease. Clinical signs generally fall into two categories:

1. Non-specific signs of discomfort: loss of appetite, weight loss, depression, decreased activity, and less interaction with family members.
2. Signs related to inflammation of the joints: intermittent lameness of one or more legs, hunched body posture, reluctance to go for walks, stiff "walking on eggshells" gait, tiring more easily, reluctance to jump up or down on furniture, and reluctance to go up or down stairs. In some cases, these clinical signs may "wax and wane" with a tendency to get better for periods of time and then to relapse again with more severe signs.

### How is polyarthritis diagnosed?

The diagnosis of PA involves a series of steps - first to confirm that polyarthritis is present (based on history as well as thorough exam - including orthopedic and neurologic exam). Secondary labwork testing is then performed (encompassing blood and urine samples) to establish if other organ systems are involved. More specific lab tests are then pursued to look for underlying triggers of PA (infectious tests, immune system tests, chest x-rays and abdominal ultrasound). Lastly, joint taps are performed which involve taking a small amount of fluid from multiple joints. The fluid obtained is observed under a microscope for analysis (cytology) as well as cultured (to look for infection). This procedure requires heavy sedation to general anesthesia and is crucial in making the definitive diagnosis.



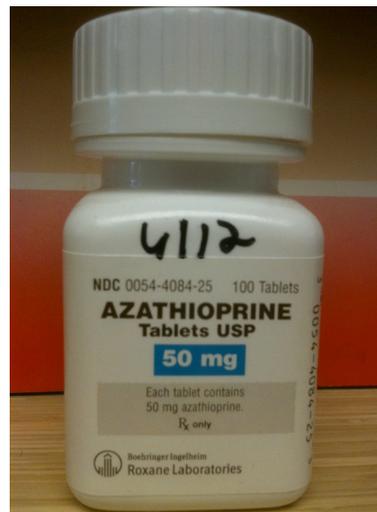
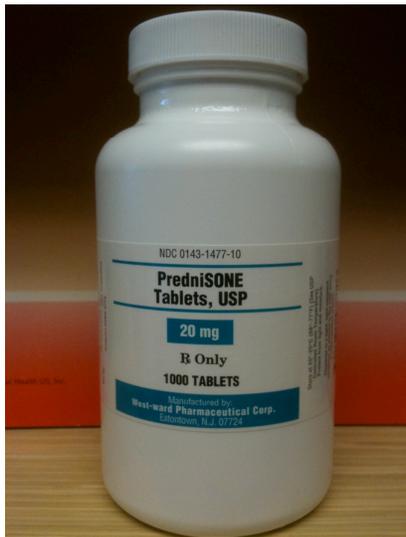
### How is polyarthritis treated?

Treatment is dependent on both (degenerative, erosive, non-erosive) and the cause of PA. In the case of IMPA, medication for both the underlying trigger (infection or other) as well as immunosuppressive therapy is initiated (to suppress the effects of "self-attack"). In cases of idiopathic IMPA (the most common form), medication to suppress the immune system as well as other supportive medications are usually given. In general, therapy typically falls into the following categories (some or all of these medications may be used depending on the patient):

#### **1. Immunosuppressive (medication to suppress the immune system)**

The most common drugs used in the dog include prednisone, azathioprine, and cyclosporine. However, other immunosuppressive drug choices may also be used. It is most typical for a minimum

of two of these drugs to be used together. Side effects of drug therapy are common and regular monitoring is important. The most common side effects that may be seen with prednisone include increased appetite, increased drinking, increased urination, panting, abdominal distension and sometimes stomach upset. The most common side effects that may be seen with azathioprine include transitory loss of appetite, occasional vomiting, bone marrow suppression, and in a very small percentage of dogs, liver or pancreatic disease. The most common side effects of cyclosporine include transitory loss of appetite, vomiting and diarrhea. Immunosuppressive medications are typically continued for a long period of time (6-12 months) with higher dosages initially, followed by gradual tapering over many months. In most patients, medications can be slowly discontinued and eventually stopped, but in some patients, lifelong low dose therapy is needed to control signs or prevent relapse.



**2. Stomach protectants:** Famotidine (pepcid), or other medications may be prescribed in the earlier phases of treatment when prednisone dose is higher to help minimize stomach irritation.

**3. Antibiotics:** trial courses of antibiotics (particularly Doxycycline) may be recommended while pending test results to treat the most likely infectious causes of PA.

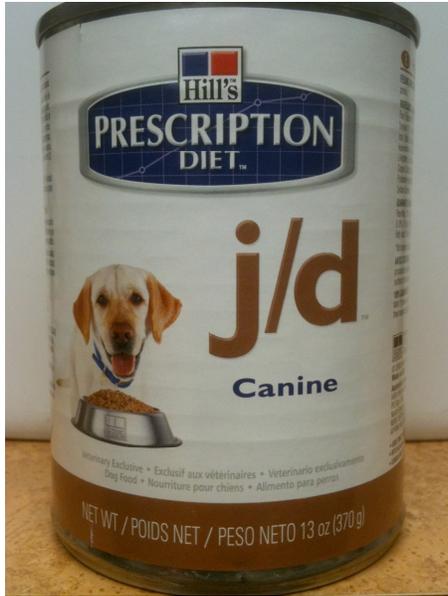
**4. Pain medications:** Tramadol, gabapentin, amantadine, and/or other pain medications may be recommended during the initial 1 -3 weeks of therapy as it can take this long for other medications to become completely effective. In patients with concurrent degenerative (old age) joint disease, these medications may be continued indefinitely.

**5. Joint supplements and omega-3 fatty acid supplements:** these medications are helpful in alleviating joint inflammation as well as promoting overall good joint health.

**6. Diet:** In some cases, prescription diets (ie: Hill's j/d diet for joint health or weight loss diets) may be recommended based on the individual patient's needs.

#### **What recheck evaluations are recommended?**

Initial recheck evaluation (repeat exam and labwork testing) is generally done within 1-2 weeks of instituting therapy. Further blood testing is then recommended at regular intervals (initially every 2 weeks, then monthly, then every 3 to 4 months). It is very important to have rechecks done to monitor for side effects of medications as well as response to therapy. As drug therapy is tapered, rechecks are important to monitor for relapse.



Hill's j/d Diet for joint health



Joint supplement

**What is the prognosis for dogs and cats diagnosed with polyarthritis?**

Each patient is somewhat unique in their response, but most patients have an excellent response to medication with resolution of pain, discomfort, and lameness. In a small percentage of cases, additional medications may be necessary to get a complete response. With cautious tapering of medication, many patients may not experience further episodes of PA. In other patients, relapses occur, and lifelong medication is necessary to keep clinical signs in remission. As relapse has been suspected to be linked to stimulation of the immune system in some patients, it is recommended to avoid further vaccinations as well as antibiotic therapy (if possible).



Cotton - feeling much better and ready enjoying life on 4 working legs

Wendy Yaphe, DVM, Dipl ACVIM

Aspen Meadow Veterinary Specialists