



# Medication overview

>>> Medications commonly used to treat Juvenile Idiopathic Arthritis

## This information is about the types of medication used to treat JIA

- What they are used for
- How they work
- Some of their possible side effects
- How they are given

This is brief information. You can get detailed information about individual drugs from our information sheets or from the manufacturer's information that comes with your child's medication. If you have any questions about your child's medications, ask your child's rheumatologist, or rheumatology nurse, or pharmacist.

## Several types of medications are used to treat JIA

1. Non Steroidal Anti-Inflammatory Drugs (NSAIDs)
2. Pain Relievers
3. Corticosteroids
4. Disease Modifying Anti-Rheumatic Drugs (DMARDs)
5. Biologic Agents (bDMARDs)

## Why use medication?

Medication is used to control inflammation and reduce pain in the joints. If medications are started early, normal movement of the joint can be better preserved, and joint damage avoided.

While there are many medications that can help the pain and inflammation of JIA, at present there is no cure. What can be hoped for is remission: when your child has no signs of the condition, is free of pain and inflammation, and has good function of the joints.

## About medications for JIA

- Some medications do not work immediately and may take several weeks to have an effect.
- Often children take more than one medication to control JIA.
- The various types of medications work differently but together to reduce inflammation and pain.
- If one medication does not work, your child may still respond to another medication.

### Side effects of JIA medications

- Side effects are unwanted effects of a medicine that occur in addition to their beneficial effects.
- Every medication has a risk of side effects. Some side effects are serious and others are mild. Some are rare and others are common.
- A long list of possible side effects can be worrying, but your child is extremely unlikely to suffer from every side effect listed.
- Every child reacts differently to different medications, so we cannot know if your child will develop side effects with a medication.
- We tell you about possible side effects so you can recognize them if they happen.
- Your child's rheumatology team also checks for side effects – this is called monitoring.

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## Safety tips

- Always keep medications out of reach of children and pets.
- Return old or unused medications to the pharmacy; do not dispose of them in the bin or down the drain.
- Always tell your rheumatologist if your child is using any over-the-counter medications, complementary or alternative therapies, vitamins or supplements. This will help avoid any interactions between the medications and these therapies.
- Always follow the instructions given by your doctor. If you are in any doubt, ask for further explanations.
- If your child needs to take medication while at school, the school will need to have the medicines in the packets they come in, so that the right medication can be given to the right child, usually by the school nurse or teacher.
- Talk to your child about the medications and how they work. This will help your child understand why they need to take them.

## 1. Non steroidal anti-inflammatory drugs (NSAIDs)

### **What are NSAIDs used for?**

NSAIDs are used to reduce fever, pain and inflammation. These medications are commonly available over the counter, and are used for mild pain and fever. At higher doses prescribed by your rheumatologist, NSAIDs reduce inflammation and help control the symptoms caused by inflammation, like stiffness and swelling. NSAIDs do not change the course of JIA – they can make your child feel better, but they do not cure it.

### **How do NSAIDs work?**

NSAIDs work by blocking the production of hormone-like chemicals called prostaglandins which cause inflammation, pain and fever. When fewer prostaglandins are produced, there is less inflammation.

### **Side effects of NSAIDs**

The most common side effect is stomach upset, which can range from mild discomfort to severe pain and bleeding. If the bleeding is severe enough it may cause the stools to become black. These side effects can occur because prostaglandins protect the stomach lining. NSAIDs stop prostaglandins from causing inflammation, but they can also stop prostaglandins from protecting the stomach lining. Stomach upset can be reduced by taking NSAIDs after food.

### **Important points to remember when your child is taking NSAIDs**

Do not give your child any additional over-the-counter NSAIDs except the one your child's rheumatologist has prescribed, because this will be "doubling up" on the medication and may increase the chances of side effects. Ask your pharmacist if you are unsure if a medication includes an NSAID.

### **How are NSAIDs given?**

NSAIDs are available in tablet and liquid form, and as a suppository. How often they are taken depends on the type of NSAID. It is best to take this medication with food to help reduce stomach upset.

## 2. Pain relievers

Pain relievers or analgesics include paracetamol (Panadol). These are available over the counter. An opiate pain reliever, such as paracetamol mixed with codeine (Panadeine or Pain Stop) is a stronger medication.

### **What are pain relievers used for?**

Pain relievers are used to reduce pain. This can help your child feel more comfortable, be more active and sleep better. Pain relievers do not reduce inflammation like NSAIDs, and can be used with other drugs like NSAIDs.

### **How do pain relievers work?**

Paracetamol reduces the production of prostaglandins, but unlike NSAIDs, paracetamol does not have an anti-inflammatory effect. By reducing the production of prostaglandins, paracetamol drugs can reduce the pain signal at the site of inflammation.

Opiates (like codeine) work quite differently. These drugs work in the spinal cord to stop the pain signals getting to the brain. They also work in the brain to make your child feel more comfortable.

### **What are some of the side effects of pain relievers?**

Paracetamol is very safe when given as directed and should not cause side effects. However, if your child is under two years old, talk to your doctor before giving paracetamol. Opiate pain relievers can sometimes cause nausea, vomiting, drowsiness or constipation.

### **How are pain relievers given?**

Pain relievers can be given as a tablet, liquid, suppository, or as an injection.

### 3. Corticosteroids

These are sometimes called steroids, but they are not the same as anabolic steroids (the steroids that weightlifters and sportsmen sometime use).

#### **What are corticosteroids used for?**

Corticosteroids are hormones that are produced naturally in the body by the two adrenal glands. When given as a medicine, corticosteroids have a powerful anti-inflammatory effect. They are usually given for short periods for quick relief of inflammation, and they can be injected directly into the joint to reduce inflammation. Sometimes, for severe systemic JIA, they are given in higher doses into the bloodstream, by intravenous drip.

#### **How do corticosteroids work?**

Corticosteroids work in a complex way. They have many actions around the body. The actions that are helpful in treating JIA reduce inflammation and suppress the function of the immune system, which is overactive in JIA.

#### **What are some of the side effects of corticosteroids?**

When corticosteroids are used in the short term, there are few side effects. Some people notice an increase in appetite, or mood swings. These are temporary and stop when the medication is stopped.

Long-term use of corticosteroids can have side effects such as reduced growth, thinning of the bones (osteoporosis), increased weight and diabetes. Your child's rheumatologist will watch for side effects if your child is taking a corticosteroid. Occasionally other medications like calcium and vitamin D are given to keep bones strong. Because of the long-term side effects, short courses of corticosteroid are used where possible.

#### **Important points to remember when your child is taking a corticosteroid**

When your child is taking a corticosteroid medication, their body stops producing corticosteroid naturally. If the medication is stopped suddenly, it takes a while for the adrenal glands to make enough corticosteroid. Not having enough corticosteroid can be very dangerous. For example, it can cause low blood pressure and low blood sugar. To stop this from happening, corticosteroid medication must be taken regularly as instructed by your child's rheumatologist. Also, the corticosteroid dose will be gradually reduced before stopping completely, to allow the glands to start making corticosteroid.

#### **How are corticosteroids given?**

Steroids can be given in a number of ways. These include tablets, liquid, an injection into the joint, in eye drops (for inflammation in the eye), or into a vein through an intravenous drip. Steroids given as a tablet or liquid must be taken with food.

### 4. Disease modifying anti-rheumatic drugs (DMARDs)

#### **What are DMARDs used for?**

DMARDs are second line drugs. This means that they are only used if your child's JIA is not well controlled or is unlikely to be well controlled, by NSAIDs and/or joint injections alone. DMARDs reduce the overall activity of the JIA.

#### **How do DMARDs work?**

Different DMARDs work in slightly different ways, but in general they reduce the activity of the immune system, which is overactive in JIA. White blood cells, which fight germs, create inflammation by attacking the tissue in the joint and by releasing chemicals which cause more inflammation. By reducing the over-activity of these white blood cells, DMARD medications can stop inflammation from occurring.

#### **What are some of the side effects of DMARDs?**

Possible side effects vary with different DMARDs. Because they reduce the over-activity of the immune system, some children are more likely to catch infections. Because of this, live virus vaccinations (e.g. polio, varicella (chicken pox) and measles, mumps, rubella) should not be given while your child is on DMARD medications. You should discuss this with your rheumatologist or rheumatology nurse before starting one of the DMARD medications, especially if your child is due for these vaccinations. Regular blood tests are needed to check for side effects, like a change in the blood cell count or liver function.

#### **How are DMARDs given?**

DMARDs are given as a tablet, liquid or as an injection under the skin. Some are given every day; others are given once a week.



