Gout and NSAIDs
Summaries and decision aid

How well do non-steroidal anti-inflammatory drugs (NSAIDs) work to treat gout and is one better than the other?

To answer this question, scientists found and analysed 8 studies testing NSAIDs in 366 people with gout. People received either pills or injections of NSAIDs. These studies provide the best evidence we have today.

What is gout and how can it be treated?

Gout is a type of arthritis in which there is a build up of crystals from uric acid in the joints of the body. In gout, the body either makes too much uric acid or it is not able to flush out excess uric acid from the body fast enough. When it builds up, the uric acid forms into crystals and deposits in joints (especially in the big toe). It can also deposit under the skin and in the kidneys. In the joint, the deposits can cause pain, swelling, and tenderness. An attack of gout may occur suddenly and go away on its own after 7 to 10 days or the pain and swelling can come on slowly and last for long periods. Non-steroidal anti-inflammatory drugs (NSAIDs), such as indomethacin, naproxen, etodolac or etoricoxib, are often used to decrease the pain and swelling. In people who cannot take NSAIDs because of side effects or when NSAIDs are not working, there are other treatments such as corticosteroids or colchicine.

How well did NSAIDs work?

A study of people who did not receive treatment for gout showed that gout will not likely improve before 7 days without using NSAIDs.

Seven studies that compared different NSAIDs to each other all showed that people improved when receiving NSAIDs. But the studies have not shown which NSAID works better.

What side effects occurred with NSAIDs?

Side effects that occurred were stomach and intestinal problems, such as ulcers and bleeding (3 out of 100 people had these side effects), vomiting, headache, dizziness, and sleepiness. NSAIDs may not be safe in people with kidney disease, ulcers, high blood pressure, bleeding problems, and heart failure.

What is the bottom line?

There is “Silver” level evidence that non-steroidal anti-inflammatory drugs (NSAIDs) decrease pain and swelling in gout. NSAIDs also decrease the length of the attack.

It is not clear which NSAID works better.

Based on Schumaucher R, Schlesinger N, Baker D, Ottawa Methods Group. Gout. In: *Evidence-based Rheumatology,* London: BMJ Books, 2003.

How well do non-steroidal anti-inflammatory drugs (NSAIDs) work to treat gout and is one better than the other?

What is gout and how can it be treated?

Gout is a type of arthritis in which there is a build up of crystals from uric acid in the joints of the body. Normally, the body makes uric acid and flushes out the excess in the urine. But in gout, the body either makes too much uric acid or it is not able to flush out the excess fast enough. When it builds up, the uric acid forms into crystals and deposits in the joints, especially in the big toe. It can also deposit under the skin and in the kidneys. In the joint, the deposits can cause pain, swelling and tenderness.

An attack of gout may occur suddenly and go away on its own after 7 to 10 days or the pain and swelling can come on slowly and last for long periods. Non-steroidal anti-inflammatory drugs (NSAIDs), such as indomethacin, naproxen, etodolac or etoricoxib, are often used to decrease the pain and swelling. But, it is unclear if one NSAID works better than the other and which NSAIDs may cause more side effects. In people who can't take NSAIDs because of side effects or when NSAIDs are not working, there are other treatments such as corticosteroids or colchicine

How did the scientists find the information and analyse it?

The scientists searched for studies and reviews of the literature that examined the treatment of gout with NSAIDs. Not all studies found were of a high quality and so only those studies that met high standards were selected.

Which high quality studies and reviews were examined in this summary?

Eight studies were examined in this summary.

One study examined 11 patients with gout who did not receive any treatment. The seven other studies tested 366 patients who received an NSAID. NSAIDs tested were indomethacin, phenylbutazone, proquazone, ketoprofen, fenoprofen, ketorolac (IV), etodolac, naproxen or etoricoxib. One of these studies tested 75 patients receiving indomethacin and 75 patients receiving etoricoxib for 8 days.

How well did NSAIDs work?

The study with patients who did not receive any treatment for gout showed that gout will not likely improve before 7 days without using NSAIDs. This was because

- 18 out of 100 patients needed treatment because the pain did not improve after 4 days
- 81 out of 100 patients had some improvement in pain after 5 days
- 27 out of 100 patients had complete improvement after 7 days.

The 7 studies that compared different NSAIDs to each other all showed that patients improved when receiving NSAIDs. Some of the results from the studies are shown:

- all patients improved with indomethacin or phenylbutazone after 2 to 3 days
- 90 out of 100 patients had some pain relief after 1 day and 22 out of 100 had complete relief from pain after 5 days with indomethacin or proquazone
- 79 out of 100 patients improved after 4 days with fenoprofen or phenylbutazone
- 80 out of 100 patients had half the pain after 2 hours with ketorolac or indomethacin
- 28 out of 100 patients had no pain or mild pain after 4 hours with etoricoxib or indomethacin.

Specifically, one study testing indomethacin showed that:

- about 20 out of 100 patients had no pain or mild pain after 4 hours
- about 60 out of 100 patients had no pain or mild pain after 2 days
- about 83 out of 100 patients had no pain or mild pain after 5 days.

The studies have not shown which NSAID works better.

What side effects occurred with NSAIDs?

Side effects that occurred in these short studies were stomach and intestinal problems, vomiting, headache, dizziness and sleepiness.

Specifically, one study showed that

- 60 out of 100 patients had these side effects with an NSAID (indomethacin)
- 11 out of 100 patients stopped taking the NSAID (indomethacin) because of these side effects.

NSAIDs may not be safe in people with kidney disease, ulcers, high blood pressure, bleeding problems, and heart failure.

Serious side effects: Very large studies need to be done to test serious side effects of NSAIDs. But very large studies have not been done for gout. Studies of NSAIDs in other conditions have shown that bleeding stomach ulcers or holes in the lining of the gut occur more often with NSAIDs. Normally, these side effects occur in 1 to 5 out of 100 patients. But, some studies testing NSAIDs show that these serious side effects may occur more often than normal. For patients that have more chances of stomach problems, a type of NSAID called a coxib or Cox-2 inhibitor is safer on the stomach and intestines.

What is the bottom line?

There is “Silver” level evidence that non-steroidal anti-inflammatory drugs (NSAIDs) decrease pain and swelling in gout. NSAIDs also decrease the length of the attack.

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Information about gout and treatment

What is gout?

Gout is a type of arthritis in which there is a build up of uric acid in the joints of the body. Normally, the body makes uric acid and flushes out the excess in the urine. But in gout the body either makes too much uric acid or is unable to flush out the excess fast enough. When it builds up, the uric acid forms into crystals and deposits in the joints, especially in the big toe. It can deposit under the skin and in the kidneys. This causes pain, swelling, and tenderness in that area of the body. Attacks of gout may occur suddenly or the pain and swelling can come on slowly and last for long periods.

If left untreated, the attack may end after 7 to 10 days, but can last weeks. However, attacks will still occur with pain and swelling, and uric acid may build up and lead to

- tophi (uric acid deposits under the skin and elsewhere)
- limited ability to do daily activities
- kidney stones
- permanent damage to joints.

What can I do on my own to manage my disease?

- ✓ rest during attack
- ✓ cold packs
- ✓ relax
- ✓ avoid alcohol
- ✓ put less stress on joints
- ✓ maintain a healthy weight
- ✓ avoid excess carbohydrates and purines

What treatments are used for gout?

Five kinds of treatment may be used alone or together. The common (generic) names of treatment are shown below.

1. *Pain medicines and non-steroidal anti-inflammatory drugs (NSAIDs) for attacks*
   - Acetylsalicylic acid
   - Celecoxib
   - Diclofenac
   - Etodolac
   - Etoricoxib
   - Indomethacin
   - Ketoprofen
   - Meloxicam
   - Naproxen
   - Rofecoxib
   - Tolmetin
   - Valdecoxib
2. *Colchicine for attacks or to prevent gout*
   - Allopurinol
   - Benzbromarone
   - Probenecid
3. *Uric acid lowering drugs to prevent gout*
4. *Corticosteroid injections for attacks*
   - Adrenocorticosteroids
   - Adrenocorticotropic hormone (ACTH)
5. *Diet therapy*
   - Low purine diet
   - Low carbohydrate

What are my choices? How can I decide?

Treatment for your disease will depend on your condition. You need to know the good points (pros) and bad points (cons) about each treatment before you can decide.

Gout decision aid

Should I take non-steroidal anti-inflammatory drugs (NSAIDs)?

This guide can help you make decisions about the treatment your doctor is asking you to consider.

It will help you to

1 Clarify what you need to decide.
2 Consider the pros and cons of different choices.
3 Decide what role you want to have in choosing your treatment.
4 Identify what you need to help you make the decision.
5 Plan the next steps.
6 Share your thinking with your doctor.

Step 1: Clarify what you need to decide

What is the decision?

Should I take non-steroidal anti-inflammatory drugs to decrease the pain and swelling in gout?

NSAIDs may be taken as a pill daily.

When does this decision have to be made? Check ✓ one

☐ within days ☐ within weeks ☐ within months

How far along are you with this decision? Check ✓ one

☐ I have not thought about it yet

☐ I am considering the choices

☐ I am close to making a choice

☐ I have already made a choice

Step 2: Consider the pros and cons of different choices

What does the research show?

NSAIDs are classified as: **Likely benefical**

There is 'Silver' level evidence from 8 studies of 366 people that tested NSAIDs. The studies lasted up to 2 weeks. These studies found pros and cons that are listed in the chart below.

What do I think of the pros and cons of non-steroidal anti-inflammatory drugs (NSAIDs)?

1 Review the common pros and cons.
2 Add any other pros and cons that are important to you.
3 Show how important each pro and con is to you by circling from one (*) star if it is a little important to you, to up to five (*****) stars if it is very important to you.

PROS AND CONS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS)

PROS (number of people affected)	How important is it to you?
Improves pain and swelling 83 out of 100 people had no pain or mild pain after 5 days of taking indomethacin	* * * * *
Decreases length of attack	* * * * *
Other pros:	* * * * *

CONS (number of people affected)	How important is it to you?
Gout may improve on its own without treatment after 7 to 10 days	* * * * *
Side effects: stomach and intestinal side effects, vomiting, headache, dizziness and tiredness 60 out of 100 people had side effects with indomethacin 11 out of 100 people stopped taking indomethacin because of side effects	* * * * *
May make high blood pressure worse and may not be safe in people with kidney disease	* * * * *
Rare serious harms 1 to 5 more people out of 100 will get a bleeding stomach ulcer or a hole in the lining of their gut when taking NSAIDs	* * * * *
Personal cost of medicine	* * * * *
Other cons:	* * * * *

What do you think of NSAIDs? Check ✓ one

☐ Willing to consider this treatment
Pros are more important to me than the cons

☐ Unsure

☐ Not willing to consider this treatment
Cons are more important to me than the pros

Step 3: Choose the role you want to have in choosing your treatment
Check ✓ one

☐ I prefer to decide on my own after listening to the opinions of others

☐ I prefer to share the decision with: _____

☐ I prefer someone else to decide for me, namely: _____

Step 4: Identify what you need to help you make the decision

What I know	Do you know enough about your condition to make a choice?	☐ Yes ☐ No ☐ Unsure
	Do you know which options are available to you?	☐ Yes ☐ No ☐ Unsure
	Do you know the good points (pros) of each option?	☐ Yes ☐ No ☐ Unsure
	Do you know the bad points (cons) of each option?	☐ Yes ☐ No ☐ Unsure
What's important	Are you clear about which **pros** are most *important to you?*	☐ Yes ☐ No ☐ Unsure
	Are you clear about which **cons** are most *important to you?*	☐ Yes ☐ No ☐ Unsure
How others help	Do you have enough support from others to make a choice?	☐ Yes ☐ No ☐ Unsure
	Are you choosing without pressure from others?	☐ Yes ☐ No ☐ Unsure
	Do you have enough advice to make a choice?	☐ Yes ☐ No ☐ Unsure
How sure I feel	Are you clear about the best choice for you?	☐ Yes ☐ No ☐ Unsure
	Do you feel sure about what to choose?	☐ Yes ☐ No ☐ Unsure

If you answered No or Unsure to many of these questions, you should talk to your doctor.

Step 5: Plan the next steps
What do you need to do before you make this decision?

For example: talk to your doctor, read more about this treatment or other treatments for gout.

Step 6: Share the information on this form with your doctor

It will help your doctor understand what you think about this treatment.