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**: Does not require a prescription  
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# Anti-Inflammatory Medications

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Does not require a prescription  Requires a prescription  May require a prescription
For the more than 4.6 million Canadians living with arthritis, pain is one of the many challenges they face on a daily basis. And though medication is only one option in terms of arthritis treatment, drugs can provide pain relief (and slow joint damage in many cases of inflammatory forms of arthritis). Keep in mind that many lifestyle changes, such as healthy eating, exercise and treatments such as physical therapy, should also be explored.

The good news is: medications on the market today are safer and more effective than ever before. Medications to treat arthritis can be divided into two general categories: those that control symptoms and those that control the disease itself.

*Arthritis Medications: A Reference Guide* is designed to help you make informed decisions about your treatment plan and enable you to ask your health-care team specific questions related to your care. It is an educational guide and can answer some of your questions around available medications, including details on dosages, effectiveness, side effects and warnings.

This is not, however, a how-to on self-medicating. As advised throughout the guide, you will have to discuss any new treatments or questions you have with your doctor, pharmacist and/or other health-care provider. Arthritis is a complicated disease and only a medical professional can accurately diagnose and recommend a treatment plan most appropriate for your specific situation.

You have an essential role to play in the management of your arthritis. Start by learning the most you can about your disease, medications and other treatments, and learn to ask questions of your health-care team. Information is key and with the right treatment and support from your health-care team, people living with arthritis can lead active, fulfilling and more productive lives.

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Living with Arthritis

If you have been diagnosed with arthritis, you’re certainly not alone; arthritis affects Canadians of every age, physical condition and ethnic background. Those living with arthritis also know that the disease can turn even the simplest tasks — dressing, showering or brushing your hair — into a real challenge.

The treatment options for your arthritis will likely include non-medications therapies, such as physiotherapy and occupational therapy, self-management techniques like exercise, healthy eating and relaxation techniques, as well as medications. Learning to manage arthritis and its symptoms, like pain, isn’t easy. But learning as much as you can about your particular type of arthritis and actively working with your health-care team to manage your disease and its symptoms are two very effective ways of regaining control over your life. There are a number of individuals and organizations that you may find helpful, including medical specialists, pharmacists, community organizations, friends and family and The Arthritis Society.

Take advantage of the help, advice, expertise and experience of the members of your treatment team; ask questions and learn to use every resource available to you.

Learning as much as you can about your particular type of arthritis and actively working with your health-care team to manage your disease and its symptoms are two very effective ways of regaining control over your life.
What is Arthritis?

The word arthritis means inflammation of the joint (“arthro” meaning joint and “itis” meaning inflammation). Inflammation is a medical term describing pain, stiffness, redness and swelling. Arthritis is a disease that can involve any of the joints in the body, often occurring in the hip, knee, spine or other weight-bearing joints, but can also affect the fingers and other non-weight-bearing joints. Symptoms of arthritis include joint pain, swelling, stiffness and fatigue. Untreated inflammation can eventually lead to joint damage, destruction and disability. Some forms of arthritis can also affect the body’s internal organs.

What is Osteoarthritis?

Osteoarthritis (OA) is the most prevalent type of arthritis, affecting more than three million Canadians — that’s one in 10! Though once referred to as the “wear-and-tear” arthritis, the Osteoarthritis Research Society International (OARSI) recently re-defined this condition. It describes OA as the result of the body’s failed attempt to repair damaged joint tissues. However, OA isn’t always developed due to abnormal stresses or injury; it may also occur as part of the normal aging process. This condition leads to the breakdown of cartilage (the tough elastic material that covers and protects the ends of bones) and the underlying bone, resulting in pain, stiffness, swelling and bone-on-bone reduction in range of movement in the affected joint. The joints most commonly affected by OA are the knees, hips and those in the hands and spine. The cause of OA is multi-factorial and complex, with development of OA depending on interplay between factors such as age, obesity, gender, occupation (injury as a result of a physical job), participation in certain sports, history of joint injury or surgery and genetics.
What is Inflammatory Arthritis?

Inflammatory arthritis is a group of conditions whereby the body’s defense system begins to attack the tissues of our joints instead of germs, viruses and other foreign substances. This can result in stiffness, pain and joint damage. As a result of this damage, some of the joints may gradually change shape and deformities can develop. Once a joint is damaged, the damage cannot be reversed. Early treatment aimed at reducing inflammation is important to prevent damage to the joint and, for some forms of inflammatory arthritis, to other organs. Inflammatory arthritis is often called systemic because it can affect the whole body. The most common forms of inflammatory arthritis are: rheumatoid arthritis (RA), ankylosing spondylitis and psoriatic arthritis. Inflammatory arthritis also affects children.

Who Gets Arthritis?

Arthritis affects people of every age, gender and ethnic background. Genetics, age and lifestyle can all play a part in increasing one’s risk of developing arthritis. For instance, the likelihood of developing OA increases with age, a physically demanding job (e.g., athlete, heavy machinery operator) and/or previous joint injury.

Did You Know?

- Arthritis is among the leading causes of disability in Canada.
- There are more than 100 different types of arthritis.
- Arthritis can be classified as either inflammatory or osteoarthritis (OA) and in some cases people may get both.
- There is no cure for arthritis, but there is hope. When you are diagnosed early and start the right treatment plan, you can take control of your disease. In the case of inflammatory arthritis, early treatment can also help reduce joint damage.
- The Arthritis Society is committed to continuing to help support research that focuses on understanding the causes of arthritis in order to develop new ways to treat pain, prevent or slow the progression of the disease, restore joint function and ultimately find a cure.
A Comparison of Inflammatory Arthritis and Osteoarthritis

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>INFLAMMATORY ARTHRITIS (IA)</th>
<th>OSTEOARTHRITIS (OA)</th>
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<tbody>
<tr>
<td>Examples of the</td>
<td>• Rheumatoid arthritis (RA)</td>
<td>• OA</td>
</tr>
<tr>
<td>disease</td>
<td>• Psoriatic arthritis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ankylosing spondylitis</td>
<td></td>
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<tr>
<td></td>
<td>• Systemic lupus erythematosus</td>
<td></td>
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<tr>
<td></td>
<td>• Juvenile idiopathic arthritis (JIA)</td>
<td></td>
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<td></td>
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<tr>
<td>What is the cause?</td>
<td>The body’s immune system attacks the joints and sometimes other organs (“autoimmune disease”)</td>
<td>Progressive joint damage and failed repair of joint damage due to interplay between a number of factors (e.g., age, gender, occupation, genetics, previous joint injury)</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>How does it start?</td>
<td>There are many forms of IA; signs that are typical for most include:</td>
<td>• Very early symptoms of OA are intermittent pain with strenuous activity; with time, the pain is present more often</td>
</tr>
<tr>
<td>(warning signs)</td>
<td>• Pain, swelling and stiffness in one or multiple joints</td>
<td>• Morning stiffness or stiffness after a period of inactivity, lasting less than 30 minutes</td>
</tr>
<tr>
<td></td>
<td>• Morning stiffness in and around the affected joints lasting at least one hour</td>
<td>• Joint crepitus (grinding)</td>
</tr>
<tr>
<td></td>
<td>• Pain and stiffness that worsens with inactivity and improves with physical activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduced range of motion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sometimes fever, weight loss, fatigue and/or anemia</td>
<td></td>
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</table>

**INFLAMMATORY ARTHRITIS**

Healthy knee joint

Inflammatory arthritis
### How many joints does it affect?

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>INFLAMMATORY ARTHRITIS (IA)</th>
<th>OSTEOARTHRITIS (OA)</th>
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</thead>
<tbody>
<tr>
<td>How many joints does it affect?</td>
<td>Usually affects multiple joints</td>
<td>Usually a few joints or a single joint, often with asymmetrical joint involvement early on (e.g., one knee may be affected, but not the other)</td>
</tr>
<tr>
<td>Different types of IA have differing patterns of joint involvement. For example, RA tends to be symmetrical, involving joints on both sides of the body (e.g., both hands, both elbows, etc.), whereas psoriatic arthritis may be asymmetrical or symmetrical</td>
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### What joints can be affected?

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<thead>
<tr>
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<th>INFLAMMATORY ARTHRITIS (IA)</th>
<th>OSTEOARTHRITIS (OA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What joints can be affected?</td>
<td>Any joint can be affected, but most commonly: Small joints of the hands and feet, Wrists, elbows, shoulders, knees, lower back and hips</td>
<td>Weight-bearing joints, such as hips and knees, Neck, Lower back, Hands</td>
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### What medications are available?

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<tr>
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<th>INFLAMMATORY ARTHRITIS (IA)</th>
<th>OSTEOARTHRITIS (OA)</th>
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<tr>
<td>What medications are available?</td>
<td>Analgesics (painkillers), Non-steroidal anti-inflammatory drugs (NSAIDs), Steroids (oral and injections), Disease modifying anti-rheumatic drugs (DMARDs), Biologics</td>
<td>Analgesics (painkillers), Topical capsaicin, Non-steroidal anti-inflammatory drugs (NSAIDs) (oral and topical), Duloxetine, Joint injections: viscosupplementation and steroids</td>
</tr>
</tbody>
</table>

**OSTEOARTHRITIS**

- Healthy knee joint
- Osteoarthritis
- Cartilage
- Exposed bone
- Cartilage to begin breaking down
- Eroding meniscus
- Bone spurs

---

An Introduction to Arthritis
Medication Safety

The need to effectively monitor new drugs once they have been approved and introduced into the market has been a key issue for The Arthritis Society and other members of the arthritis community. This helps to ensure that unfavourable side effects are reported, documented and addressed. All medications have potential side effects, whether they are taken by themselves or in combination with other herbal, over-the-counter and/or prescription medications. It is therefore important for patients to discuss the benefits and potential side effects of all their medications with their doctor.

In an effort to make it easier for consumers to report side effects from health products, Health Canada has developed an online form. The form can be found at: www.hc-sc.gc.ca/dhp-mps/medeff/report-declaration/index-eng.php#a1. A PDF version of the form can be downloaded and mailed to Health Canada using a downloadable postage-paid label. You can also call 1.866.234.2345 (toll-free). Leave a message and you will receive a call back.

To find out more about drugs approved for use in Canada, visit the Health Canada Drug Product Database (DPD). The database is managed by Health Canada and includes human pharmaceutical and biological drugs. To view the database, visit: www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php.
Limitations of the Guide

- This guide does not replace your doctor’s advice — it is essential that you consult your doctor for proper diagnosis and treatment if you have joint pain and swelling for longer than six weeks.

- This guide is intended for adults only. Medications used to treat arthritis in adults and children differ, including dosage recommendations and other safety considerations.

- As with all medications, drugs used to manage arthritis carry some risk of side effects, which must be balanced with the potential benefits. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible. If you believe you are experiencing a side effect related to your medication, please contact one of your health-care providers to discuss the issue.

- If you are taking medication for another long-term health problem (such as heart, liver and kidney conditions, high blood pressure, ulcers or asthma), you should discuss possible drug interactions with your doctor or your pharmacist. Also, if you are allergic to a specific medication, inform your doctor and your pharmacist.

- If you are pregnant, trying to become pregnant or breastfeeding, you must inform your doctor, since certain medications can be passed on through the placenta or into a mother’s milk. Speak to your doctor about your individual circumstances.
What are non-prescription medications?

A non-prescription medication — sometimes called an over-the-counter or OTC medicine — is any medication that you can buy without a prescription. Some medications to help control arthritis pain can be bought over the counter without a prescription. You are probably familiar with many of these, such as acetaminophen (e.g., Tylenol®, Tylenol Arthritis®), ibuprofen (e.g., Motrin® or Advil®), naproxen (Aleve®) and acetylsalicylic acid (ASA) (e.g., Aspirin®, Entrophen®, Anacin®, Novasen®, etc.).

Ibuprofen, naproxen and ASA belong to the group of medications called non-steroidal anti-inflammatory drugs (NSAIDs). Diclofenac gel (Voltaren Emulgel®) is an NSAID, available OTC, that can be applied topically to the skin to help relieve pain. Please speak with your doctor or pharmacist before starting any over-the-counter oral or topical NSAIDs. More detailed information on NSAIDs can be found starting on page 29.

There are a number of other OTC creams and rubs available to help with arthritis pain. Some of these products contain salicylate as the active ingredient, whereas others contain capsaicin, camphor or menthol.

What are non-prescription medications used for?

Acetaminophen is most commonly used to treat osteoarthritis (OA), while NSAIDs are used for both inflammatory arthritis and OA. More detailed information on NSAIDs can be found in the Anti-Inflammatory Medications section starting on page 29.

Topical agents may be used to help manage pain associated with OA. They are not routinely used to manage inflammatory arthritis.
How are non-prescription medications administered?

Non-prescription medications are typically taken orally in pill form; however, there are also a number of non-prescription topical creams and rubs that can be used to help lessen the pain of arthritis.

Which non-prescription medication is right for you?

Acetaminophen is primarily used to help alleviate the pain of OA. Acetaminophen may also be used to help treat pain associated with inflammatory arthritis. The usefulness of acetaminophen in the treatment of inflammatory arthritis is limited as it does not help control the disease or prevent joint damage.

NSAIDs may be used to treat the symptoms of inflammatory types of arthritis (e.g., rheumatoid arthritis) and OA.

Although acetaminophen is better in terms of safety, NSAIDs are often preferred for OA pain due to better pain relief. Your health-care provider may ask you to try a few different NSAIDs in order to find the one that works best for you.

Topical diclofenac and topical capsaicin are reasonable alternatives for OA pain that is not relieved with acetaminophen or for people who cannot tolerate or are reluctant to take oral medications. These particular topical therapies may also be tried in combination with oral medications where pain relief is not adequate. There is limited evidence to support the use of topical salicylate, camphor or menthol for treatment of OA pain.

How long will I have to take my non-prescription medication?

If you have pain from OA that is present most of the time, your health-care provider may recommend that you take non-prescription medications regularly. If your OA pain is not continuous, you may be able to take your non-prescription medications as needed, stopping when symptoms have improved. Inflammatory arthritis will likely require life-long treatment. This treatment may include non-prescription NSAIDs taken regularly; however, inflammatory arthritis typically requires the use of DMARDs (see pages 53–70) and biologics (see pages 71–103).

Topical agents are typically used to provide symptomatic relief and are not routinely used for the long-term management of OA or inflammatory arthritis.
Non-Prescription Medications

Arthritis Medications: A Reference Guide

Acetaminophen

Brand names: Tylenol®, Tylenol Arthritis®, Tylenol® Muscle Aches and Body Pain, etc.
(Tylenol Arthritis® is a form of acetaminophen designed to release the medication over a longer period of time so that it does not have to be taken as often)

Drug type: Non-prescription medication

What types of arthritis is acetaminophen used for?

Acetaminophen is used to treat pain associated with osteoarthritis and, sometimes, inflammatory forms of arthritis.

How is acetaminophen administered?

Acetaminophen is typically taken orally.

What is the typical dose and when do I take it?

The typical dose of acetaminophen is 325 mg to 1,000 mg every four to six hours. The maximum daily dose is four grams (4,000 mg).

- Regular Strength tablets (325 mg each): One to two tablets every four to six hours to a maximum of 12 tablets per day.
- Extra Strength tablets (500 mg each): One to two tablets every four to six hours to a maximum of eight tablets per day.
- Extended Release tablets (650 mg each) (i.e., Tylenol® Arthritis, Tylenol® Muscle Aches and Body Pain): One tablet every eight hours to a maximum of six tablets per day.

How long will it take to work?

Acetaminophen typically begins to take effect within one to two hours.

When should I not take acetaminophen and call my doctor?

Ask a doctor or pharmacist before use if you have serious liver or kidney disease or chronic alcohol use (three or more drinks per day). Do not take acetaminophen if you have an allergy to acetaminophen.

Taking more than the recommended maximum daily amount of acetaminophen can be dangerous. If you have consumed more than the recommended amount, please contact your health-care provider immediately, even if you do not notice any possible signs or symptoms of
excess use, such as increased sweating, nausea, vomiting, stomach pain and loss of appetite.

Acetaminophen, when taken daily, may interact with warfarin. If you take warfarin for another medical condition, please speak to a health-care provider before starting regular acetaminophen.

**What are the side effects of acetaminophen?**

Although acetaminophen is one of the safest medications for treating pain and is generally well tolerated, long-term use carries a low, but dangerous, risk of liver damage and possible kidney damage.

**What helps to reduce side effects?**

Do not exceed the maximum daily dose of acetaminophen. Acetaminophen is found in a number of other over-the-counter medications, such as cough and cold products and prescription medications for pain relief. Carefully look at the ingredients of all the over-the-counter medications and prescription medications you are taking to ensure you are not taking too much acetaminophen. Consult your pharmacist if you have questions about the amount of acetaminophen in over-the-counter products.

Avoid regular consumption of alcohol while taking acetaminophen as it can increase the risk of liver toxicity. Consuming more than three alcoholic drinks per day may increase the risk of liver damage.

**Do I need any monitoring while taking acetaminophen?**

Routine blood tests or monitoring are not normally required while you are taking acetaminophen. Your health-care provider may meet with you regularly to ensure that acetaminophen is adequately controlling your pain.
Capsaicin

Brand names: Zostrix®, Rub A-535 Capsaicin Cream®, etc.

Drug type: Non-prescription medication

What types of arthritis is capsaicin used for?

Capsaicin is a potential alternative for osteoarthritis (OA) pain not relieved with acetaminophen or for people who cannot tolerate or are reluctant to use oral medications. Capsaicin may be effective in those who have OA in only one or two joints, such as the knee or hand. Capsaicin may also be tried in combination with oral medications when OA pain relief is not adequate.

Capsaicin may be used in addition to disease-modifying anti-rheumatic drugs (DMARDs) or biologics to treat the pain of inflammatory arthritis; however, capsaicin is not routinely used in the treatment of inflammatory arthritis.

How is capsaicin administered?

Capsaicin is found naturally in hot peppers and is available in topical creams that may be applied directly to the skin over a joint to help lessen the pain of OA.

What is the typical dose and when do I take it?

Apply sparingly three or four times daily and massage into the affected area.

How long will it take to work?

Capsaicin does not provide immediate relief to pain; pain relief may take up to two weeks with daily administration. Maximal effect can take up to four weeks.
**When should I not use capsaicin and call my doctor?**

Do not use capsaicin topical preparations if you have had a previous allergic reaction to the medication. Capsaicin should not be used on raw, broken or irritated skin.

Capsaicin products are for external use only. If a rash occurs, discontinue use. If condition worsens or symptoms persist, discontinue use and contact your health-care provider.

Avoid contact with eyes. After application, wash hands thoroughly to prevent spreading the product to eyes and mouth. Flush with water if contact does occur.

The application of external heat, such as an electric heating pad, a hot water bottle or sweating through exercise, may result in excessive skin irritation or burn.

**What are the side effects of capsaicin?**

Skin irritation, local burning, stinging or redness may be most prominent during the first week of treatment. These side effects often prevent long-term use.

**What helps to reduce side effects?**

Apply topical capsaicin products as recommended and contact your health-care provider if you have any concerns while using the medication.

Skin irritation diminishes or disappears with continued use at the recommended dose. If capsaicin is applied less frequently than recommended or used intermittently, the burning effect may persist.

**Do I need any monitoring while using capsaicin?**

On occasion, you may need blood work while using topical capsaicin. Your health-care provider may meet with you regularly to ensure that your pain is adequately controlled.
Salicylate

Brand names: Rub A535®, Aspercreme®, BenGay®, Flexall®, Myoflex®, etc.

Drug type: Non-prescription medication

What types of arthritis are salicylates used for?

Salicylate topical preparations are an alternative for osteoarthritis (OA) pain not relieved with acetaminophen or for people who cannot tolerate or are reluctant to use oral medications. Topical salicylate may work by decreasing pain and inflammation; however, there is limited evidence to support the use of topical salicylate as an effective treatment for OA pain.

Topical salicylates may be used in addition to DMARDs or biologics to treat the pain of inflammatory arthritis; however, these products are not routinely used in the treatment of inflammatory arthritis.

How are salicylates administered?

Salicylate is available in topical preparations that may be applied directly to the skin over a joint to help lessen the pain of OA.

What is the typical dose and when do I take it?

Apply sparingly three or four times daily and massage into the affected area.

How long will it take to work?

Salicylates do not provide immediate relief to pain; pain relief may take several weeks with daily administration.

When should I not use salicylates and call my doctor?

Do not use topical salicylate preparations if you are allergic to salicylates (acetylsalicylic acid-based medications, such as Aspirin®), or if you are taking anticoagulant medications (e.g., warfarin). When administered with anticoagulant medications, a possible additive effect on blood thinning may occur and may increase the risk of bleeding.

For people taking oral non-steroidal anti-inflammatory drugs (NSAIDs) regularly, please speak with your health-care provider before using topical salicylates.
Salicylate products are for external use only. If rash or irritation occurs, discontinue use. If condition worsens or symptoms persist discontinue use and contact your health-care provider.

Avoid contact with eyes. After application, wash hands thoroughly to prevent spreading the product to eyes and mouth. Flush with water if contact does occur.

Don’t bandage the areas where salicylate has been applied and avoid other sources of heat such as heating pads.

Never apply to wounds or damaged skin.

**What are the side effects of salicylates?**

Skin irritation, local burning, stinging and/or redness are common.

Overuse of salicylate creams can lead to increased absorption into the bloodstream. This can increase the risk of adverse effects, such as bleeding from salicylate toxicity.

**What helps to reduce side effects?**

Apply topical salicylate products as recommended and contact your health-care provider if you have any concerns while using the medication.

**Do I need any monitoring while using salicylates?**

On occasion, you may need blood work while using topical salicylates. Your health-care provider may meet with you regularly to ensure that your pain is adequately controlled.
Prescription Medications

What are prescription medications?

Sometimes over-the-counter medications are not strong enough to treat the pain caused by arthritis. In this case, your health-care provider may recommend other prescription pain medications, such as tramadol, an opioid or duloxetine.

What are prescription medications used for?

Tramadol, opioids and duloxetine may be used to treat osteoarthritis (OA) pain. Tramadol and opioids may also sometimes be used to treat short-term inflammatory arthritis.

Tramadol is as an alternative treatment option for OA of the knee and hip for people who cannot take acetaminophen and/or non-steroidal anti-inflammatory drugs (NSAIDs) or for whom these medications were not effective. Tramadol may also be used in conjunction with acetaminophen or NSAIDs.

Opioids are second-line medications reserved for moderate to severe knee and hip OA pain that does not respond to other therapies (acetaminophen, NSAIDs or tramadol). Opioids are not routinely used to treat OA pain as adverse effects limit their use in many patients. In some cases, an opioid may be a safer option than NSAIDs in elderly patients.

Duloxetine is a second-line agent that may be used to treat OA of the knee. Duloxetine has also shown benefit as an add-on medication for people who have had a partial response to acetaminophen or NSAIDs.

Opioids and tramadol may also be used for short periods of time to help treat pain associated with inflammatory arthritis.
How are prescription medications administered?

Tramadol and duloxetine are taken orally in pill form. Opioids are typically taken orally. One opioid medication (fentanyl, Duragesic®) is administered by a patch applied to the skin, but this medication is not routinely used to manage arthritis pain.

Which prescription medication is right for you?

For people living with OA, your health-care provider may recommend tramadol or duloxetine depending on your level of pain and response to acetaminophen and NSAIDs. Opioids are not routinely used to treat OA pain, but may be considered if pain relief is not achieved from other medications. The beneficial effects of opioids on OA are often outweighed by their increased risks of adverse events.

Tramadol and opioids may be used for short-term management of inflammatory arthritis pain.

How long will I have to take my prescription medication?

If pain from OA cannot be controlled by acetaminophen and NSAIDs, a prescriber may recommend taking tramadol or duloxetine regularly. Opioids are generally recommended for short-term use in the management of OA.

No data exists regarding the benefits and risks of tramadol or opioid use for inflammatory arthritis beyond six weeks. These agents may be used for short periods of time to help inflammatory arthritis pain.
**Duloxetine**

Brand name: Cymbalta®

Drug type: Prescription medication

### What types of arthritis is duloxetine used for?

Duloxetine is a second-line agent that may be used to treat osteoarthritis of the knee that has not responded to acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs). Duloxetine has also shown benefit as an add-on medication for people who have had a partial response to acetaminophen or NSAIDs.

Duloxetine is not used to treat inflammatory arthritis.

### How is duloxetine administered?

Duloxetine is an oral capsule.

### What is the typical dose and when do I take it?

The recommended dose is 60 mg once daily to a maximum of 120 mg daily (higher doses are associated with a higher rate of adverse reactions).

A common way to start duloxetine is with 30 mg once daily, with a dose increase to 60 mg in one or two weeks to allow your body time to adjust to the medication.

### How long will it take to work?

You may notice improvement in your pain symptoms with duloxetine within one week.

### When should I not take duloxetine and call my doctor?

Duloxetine interacts with a number of other medications. Please speak with your health-care provider or pharmacist about whether any of the other medications you currently take interact with duloxetine.

Do not take duloxetine if you have an allergy to duloxetine.
Duloxetine should be avoided if you have serious liver or kidney diseases or if you consume substantial amounts of alcohol (three or more drinks per day).

What are the side effects of duloxetine?
Nausea, constipation, dry mouth, fatigue, dizziness, drowsiness, headache (rarely) and decreased appetite.

What helps to reduce side effects?

Do not exceed the maximum recommended daily dose of duloxetine. Gradual dosage increases may help reduce side effects. To reduce stomach upset, consider taking duloxetine with food.

If you experience drowsiness and sedation while taking duloxetine, please be cautious about operating hazardous machinery, including automobiles, until you are reasonably certain that duloxetine therapy does not affect your ability to engage in such activities.

People who are experiencing excessive sedation or drowsiness may consider avoiding strenuous activities or taking the medication closer to bedtime.

Do I need any monitoring while taking duloxetine?
Routine blood tests or monitoring are not normally required while taking duloxetine. Your health-care provider may meet with you regularly to ensure that duloxetine is adequately controlling your pain and not causing adverse effects.
Opioids

Brand names:

- Codeine: Tylenol® #1, #2, #3, #4, Atasol®15, Atasol®30, Codeine Contin®, and generics (Tylenol® and Atasol® products also contain 300-325 mg of acetaminophen)
- Morphine*: Morphine®, M-Eslon®, MS-Contin®, Kadian
- Hydromorphone*: Dilaudid®, Hydromorph-Contin®
- Oxycodone*: Percocet®, Percodan®, Oxycontin®, generics (Percocet® also contains 325 mg of acetaminophen)
- Meperidine: Demerol®

*Morphine, hydromorphone and oxycodone are available in both short-acting and long-acting formulations.

Drug type: Prescription medication

What types of arthritis are opioids used for?

Opioids are second-line medications reserved for moderate to severe knee and hip osteoarthritis pain that does not respond to other therapies (acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs), tramadol). Opioids are not typically used to treat osteoarthritis pain. The small to moderate beneficial effects of opioids are outweighed by significantly increased risks of adverse events.

Opioids may also be used for short periods of time to help treat pain associated with inflammatory arthritis. There is no data regarding the benefits and risks of opioid use for inflammatory arthritis beyond six weeks.

How are opioids administered?

Opioids are typically taken orally. One opioid (fentanyl, Duragesic®) can be administered by a patch applied to the skin, but this medication is not typically used to manage arthritis pain.

What is the typical dose and when do I take it?

Short acting:

- Take every four to six hours when needed for pain
Long acting:

- 12-hour formulations: Take every 12 hours for pain
- 24-hour formulations: Take once daily for pain

**NOTE:** Long-acting formulations usually offer better pain control throughout the day.

**How long will it take to work?**

Opioids typically begin to work within one hour.

**When should I not take opioids and call my doctor?**

Do not take opioid medications if you have an allergy (i.e., codeine, morphine or meperidine allergy).

Opioids should be used with caution if you have chronic obstructive pulmonary disease (COPD) and/or other lung conditions. Please consult your health-care provider if you have any lung conditions.

A number of opioid products, as noted above, also contain acetaminophen. If you are taking other acetaminophen products, please speak to your health-care providers to ensure that you are not taking more than the maximum daily dose of acetaminophen (max: 4,000 mg per day).

**What are the side effects of opioids?**

Nausea and vomiting, constipation, sedation or drowsiness, confusion, urinary retention, dry mouth, allergic reactions (e.g., rash).

Tolerance to opioids may develop with regular use of these medications. This means that you will require higher doses in order to achieve the same level of pain relief. Prolonged use of opioids and taking the medication other than how your prescriber has instructed increases the risk of opioid dependence. This can lead to improper use of these medications. Research has shown that people who take opioids at an appropriate dose for their level of pain are at low risk of misusing the medication. If you have concerns or questions about tolerance and dependence, please talk to your health-care provider.
What helps to reduce side effects?

To prevent constipation while taking opioids you should increase your intake of water and fluids. Increasing the amount of fiber in your diet is also helpful. Your prescriber may recommend a laxative and/or stool softener to help relieve constipation if water and fiber are not effective.

To reduce stomach upset, consider taking opioid medications with food.

If you experience drowsiness and sedation while taking opioids please be cautious about operating hazardous machinery, including automobiles, until you are reasonably certain that opioid therapy does not affect your ability to engage in such activities.

People who are experiencing excessive sedation or drowsiness may consider avoiding strenuous activities or taking the medication closer to bedtime.

Take opioid medications as instructed by your prescriber.

Do I need any monitoring while taking opioids?

Routine blood tests or monitoring are not normally required while you are taking opioids. Your health-care provider should meet with you regularly to ensure that your opioid is adequately controlling your pain and not causing adverse effects.
**Tramadol**

Brand names:
- **Short Acting**: Tramacet® and generics (tramadol 37.5 mg and acetaminophen 325 mg), Ultram® (tramadol 50 mg)
- **Long Acting**: Durela®, Ralivia®, Tridural® and Zytram XL®

Drug type: Prescription medication

**What types of arthritis is tramadol used for?**

Tramadol is as an alternative treatment option for osteoarthritis (OA) of the knee and hip for people who have failed treatment with acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs) or cannot take these medications. Tramadol can also be used in conjunction with acetaminophen or NSAIDs.

Tramadol may be used for short periods of time to help treat pain associated with inflammatory arthritis.

**How is tramadol administered?**

Tramadol is taken orally in pill form.

**What is the typical dose and when do I take it?**

Short acting:
- Tramacet® and generics: One to two tablets every four to six hours (maximum: eight tablets daily). Tramacet contains acetaminophen, maximum dose of acetaminophen from all sources: 4 g/day
- Ultram®: One to two tablets every four to six hours to a maximum of 400 mg daily

Long acting:
- Durela®, Ralivia® or Tridural®: Start with 100 mg once daily; may increase at weekly intervals to maximum 300 mg daily
- Zytram® XL: Start with 150 mg once daily; may increase at weekly intervals to maximum 400 mg daily

**How long will it take to work?**

Tramadol typically begins to work within one hour.
When should I not take tramadol and call my doctor?

Tramadol interacts with a number of other medications. Please speak with your health-care provider about whether any of the other medications you currently take interact with tramadol.

Do not take tramadol if you have an allergy to tramadol.

A number of tramadol products also contain acetaminophen. If you are taking other acetaminophen products, speak to your health-care providers to ensure that you are not taking more than the maximum daily dose of acetaminophen (max: 4,000 mg/day).

What are the side effects of tramadol?

Nausea, vomiting, dizziness, constipation, headache and drowsiness are common with tramadol. Approximately 40 per cent of people discontinue use of tramadol because of its adverse effects, which limits its effectiveness in treating OA pain.

What helps to reduce side effects?

Do not exceed the maximum recommended daily dose of tramadol. Gradual dosage increases may help reduce some of the side effects. To reduce stomach upset, consider taking tramadol with food.

If you experience drowsiness and sedation while taking tramadol please be cautious about operating hazardous machinery, including automobiles, until you are reasonably certain that tramadol does not affect your ability to engage in such activities.

People who are experiencing sedation and drowsiness may consider taking the medication closer to bedtime.

Do I need any monitoring while taking tramadol?

Routine blood tests or monitoring are not normally required while you are taking tramadol. Your health-care provider may meet with you regularly to ensure that tramadol is adequately controlling your pain and not causing any adverse effects.
What are NSAIDs and COXIBs?

Non-steroidal anti-inflammatory drugs (NSAIDs) are a class of medication used to treat the pain and inflammation of arthritis. They do not contain steroids, hence the name “non-steroidal.” NSAIDs are a very large category of medications, some of which you can obtain without a prescription, such as acetylsalicylic acid (ASA) (e.g., Aspirin®, Entrophen®, Novasen®), ibuprofen (e.g., Motrin® or Advil®) and naproxen (Aleve®). The list of NSAIDs is long, with more than 20 currently available. A COXIB (i.e., celecoxib (Celebrex®)) is an NSAID that has been custom-designed to minimize the risk of stomach ulcers. Although COXIBs are safer on the stomach, they still have all of the other side effects of NSAIDs and may still cause indigestion, nausea, stomach cramps and heartburn.

What are NSAIDs and COXIBs used for?

NSAIDs and COXIBs are used for both inflammatory arthritis and osteoarthritis (OA). For the treatment of OA, NSAIDs and COXIBs are a first-line treatment option. For treatment of inflammatory arthritis, NSAIDs and COXIBs help to control symptoms and do not alter the course of the disease. They are used as adjuncts to DMARD or biologic treatment.

They can be taken on an as-needed basis or they can be taken regularly to help control symptoms. Your health-care provider will advise you on the best way to take NSAIDs and COXIBs.

How long do NSAIDs and COXIBs take to work?

Some people will notice the effects of NSAIDs and COXIBs within the first few hours of taking a dose. In other people, the effects may not be evident for a few days and even up to a week or two after the medicine has been started. If it hasn’t helped within two to three weeks, it is unlikely to be of much benefit.
**How are NSAIDs and COXIBs administered?**

NSAIDs are typically taken by mouth in pill form.

Diclofenac is an NSAID available as a topical preparation sold under the brand name of Pennsaid® and Voltaren Emulgel®. Pennsaid® is a prescription medication that can be used to help lessen the pain of arthritis. Voltaren Emulgel® is available over-the-counter and is indicated for relief of pain associated with recent muscle or joint injuries. When applied as directed to the skin over a joint, very little of the medication is absorbed into the body, which significantly reduces the usual side effects associated with NSAIDs.

**Which NSAID or COXIB is right for you?**

Your health-care provider may ask you to try a few different NSAIDs, as some may work better for you than others; what works varies from person to person.

**How long will I have to take my NSAID or and COXIB?**

If you have pain from OA that is present most of the time, your prescriber may recommend that you take NSAIDs or COXIBs regularly. If your OA pain is not persistent, you may be able to take your NSAID as needed.

Inflammatory arthritis is a chronic condition that will likely require life-long treatment. This treatment may include NSAIDs or COXIBs taken regularly or when needed, however, inflammatory arthritis typically requires the use of a DMARD or biologic medication (see DMARDs (pages 53–70) and Biologics (pages 71–103)).

**What are the risks of heart attack and stroke with NSAIDs and COXIBs?**

Health Canada and the U.S. Food and Drug Administration (FDA) have reviewed all of the available studies on NSAIDs and COXIBs. Both groups have found that NSAIDs and COXIBs are associated with an increased risk of cardiovascular events (e.g., angina, heart attacks and strokes).
NSAIDs increase the risk of cardiovascular events, but in a small way compared to other risk factors. For example, high blood pressure and smoking pose a greater risk than taking NSAIDs.

The risk is greatest in those patients who use these medications for long periods of time and have risk factors for, or a history of, cardiovascular disease. Health Canada’s recommendations are as follows:

- Do not use NSAIDs or COXIBs directly before, during or after heart surgery (bypass surgery).
- Patients with a history of cardiovascular disease (e.g., angina, heart attack, TIA, stroke or congestive heart failure) should be careful using NSAIDs or COXIBs.
- Patients with risk factors for cardiovascular disease (e.g., diabetes, smoking, elevated cholesterol, obesity and family history) should also be careful using NSAIDs and COXIBs. Safer alternative treatments should be used if available.
- NSAIDs and COXIBs should be used in the lowest effective dose for the shortest possible duration of time.

If you have cardiovascular disease or risk factors for cardiovascular disease and require an NSAID your prescriber may recommend naproxen. Naproxen has been found to have the lowest risk (among NSAIDs) for cardiovascular events. Please discuss this issue with your health-care provider.
Celecoxib

Brand names: Celebrex® (see NSAID chart), generics

Drug type: COXIB (NSAID)

COXIBs are non-steroidal anti-inflammatory drugs (NSAIDs) that have been custom-designed to minimize the risk of stomach ulcers.

What types of arthritis is celecoxib used for?

Celecoxib is used for both inflammatory arthritis and osteoarthritis (OA). For treatment of OA, celecoxib is a first-line treatment option.

For treatment of inflammatory arthritis, celecoxib may help control symptoms but does not alter the course of the disease. Generally, celecoxib is used as an adjunct to disease-modifying anti-rheumatic drug (DMARD) or biologic treatment (see DMARDs (pages 53–70) and Biologics (pages 71–103)).

How is celecoxib administered?

Celecoxib is available in capsule form and taken orally.

What is the typical dose and when do I take it?

Celecoxib is available in 100 mg and 200 mg capsules. The typical dosage is 100 mg twice daily or 200 mg once daily. Your prescriber will tell you the dose that is right for you.

How long will it take to work?

Some people will notice the effects of celecoxib within the first few hours of taking a dose. For others, the effects may not be evident for days and even up to a week or two after the medicine has been started.

When should I not take celecoxib and call my doctor?

Celecoxib may not be appropriate for everyone and some people should avoid taking the medication. Your health-care provider may recommend you avoid using celecoxib if you have:

- had an allergic reaction to NSAIDs or acetylsalicylic acid (ASA) (e.g., Aspirin®)
• asthma that worsens while taking ASA
• had a recent ulcer in the stomach or small bowel
• kidney or liver disease
• significant congestive heart failure
• had a recent heart attack or stroke or experienced serious chest pain related to heart disease
• an allergy to sulfa medication

Celecoxib should be used with caution if you:

• are over age 65
• have had a previous stomach ulcer
• are taking blood thinners, such as warfarin (Coumadin®)
• are taking multiple NSAIDs (including low-dose ASA)
• have significant risk factors for heart attack or stroke (using NSAIDs may increase this risk)

You must be careful to avoid taking more than one NSAID (over the counter and prescription), including celecoxib, at a time as this may increase the risk of developing a stomach ulcer. The only exception would be if you are taking low dose ASA for cardiovascular protection. ASA is not commonly used or recommended for treatment of arthritis pain.

NOTE: Please speak with your health-care provider before starting therapy with an NSAID.

What are the side effects of celecoxib?

In general, celecoxib is fairly well tolerated. More common side effects include stomach issues, such as bloating, nausea, stomach pain, heartburn and constipation. Celecoxib is generally better tolerated in terms of stomach issues compared to other NSAIDs.

Rare side effects of celecoxib include:

• allergic reactions such as skin rashes or wheezing
• headaches, dizziness or ringing in the ears (tinnitus)
• unusual bruising or bleeding
• kidney problems
• gastrointestinal problems — celecoxib can cause irritation to the stomach, causing nausea and vomiting
Celecoxib has been custom-designed to minimize the risk of stomach ulcers that is associated with other NSAIDs. It is not known if this advantage is maintained with long term celecoxib therapy and this advantage is substantially reduced for people taking low dose aspirin for cardiovascular protection.

Ulcers usually cause stomach pain, nausea and sometimes vomiting, but in some people ulcers produce no symptoms. Signs of stomach bleeding may include vomit that looks like it has “coffee grounds” in it, vomiting blood or black, tarry bowel movements. Let your health-care provider know if you:
- have any stomach pain, nausea, heartburn or indigestion
- notice any black or bloody stools,
- are vomiting blood or “coffee ground” material
- fluid retention — celecoxib can cause fluid retention with swelling of the ankles
- blood pressure — celecoxib can increase blood pressure, which should be monitored periodically, especially if you have hypertension

What helps to reduce side effects?

Take celecoxib as prescribed and contact your health-care provider if you have any concerns while taking the medication.

Taking celecoxib with food may help reduce stomach upset.

If your health-care provider determines that you are high risk to develop a stomach ulcer, the combination of celecoxib with a medication to protect the lining of the stomach may be considered. There are currently two available types of stomach protection medications: misoprostol and proton pump inhibitors. Medications that protect the stomach are discussed in more detail starting on page 40.

Do I need any monitoring while taking celecoxib?

Blood work is not normally required while taking celecoxib. However, if you take celecoxib regularly, your doctor will likely monitor your blood pressure and order periodic blood tests to ensure that celecoxib is not causing problems or affecting your kidneys.
Non-Steroidal Anti-inflammatory Drugs (NSAIDs)

Brand names: see NSAID chart, page 38

Drug type: NSAID

What types of arthritis are NSAIDs used for?

NSAIDs are used for both inflammatory arthritis and osteoarthritis (OA). For treatment of OA, NSAIDs are a first line treatment option. For treatment of inflammatory arthritis, NSAIDs help to control symptoms and do not alter the course of the disease. They are used as adjuncts to DMARD or biologic treatment (see DMARDs (pages 53–70) and Biologics (pages 71–103)).

Topical diclofenac is a reasonable alternative for OA pain not relieved with acetaminophen or for people who cannot tolerate or are reluctant to use oral medications. Topical NSAIDs are better tolerated than oral NSAIDs and may have similar effects on pain and function. Initial NSAID therapy should be topical rather than oral in people 75 years of age or older.

How are NSAIDs administered?

NSAIDs are typically taken orally in pill form.

Diclofenac is available in a topical preparation sold under the brand names of Pennsaid® and Voltaren Emulgel®, which can be applied directly to the skin over a joint to help lessen the pain of arthritis. Pennsaid® is a prescription medication, while Voltaren Emulgel® can be purchased over-the-counter.

What is the typical dose and when do I take it?

See NSAID chart on page 38.

How long will it take to work?

Some people will notice the effects of NSAIDs within the first few hours of taking a dose. For others, the effects may not be evident for days or even up to a week or two after the medicine has been started. If it hasn't helped within two to three weeks, it is unlikely to be of much benefit.
The maximum recommended treatment duration for Pennsaid® is three months. Voltaren Emulgel® should not be used for more than seven days, unless recommended by a doctor.

**When should I not take an NSAID and call my doctor?**

NSAIDs (over-the-counter or prescription) may not be appropriate for everyone and some people should avoid taking them. Your health-care provider may recommend you avoid using NSAIDs if you have:

- had an allergic reaction to NSAIDs or acetylsalicylic acid (ASA)
- asthma that worsens while taking ASA
- had a recent ulcer in the stomach or small bowel
- kidney or liver disease
- significant congestive heart failure
- had a recent heart attack or stroke or experienced serious chest pain related to heart disease

NSAIDs should be used with caution if you:

- are over age 65
- have had a previous stomach ulcer
- are taking blood thinners such as warfarin (Coumadin®)
- taking multiple NSAIDs (including low-dose ASA)
- have significant risk factors for heart attack or stroke (using NSAIDs may increase this risk)

You must be careful to avoid taking more than one NSAID at a time (over the counter and prescription) as this will increase your risk of developing a stomach ulcer. The only exception would be if you are taking low dose acetylsalicylic acid (ASA) for cardiovascular protection. ASA (e.g., Aspirin®) is not commonly used or recommended for treatment of arthritis pain.

Let your health-care provider know if you have signs of stomach bleeding, which may include vomit that looks like it has “coffee grounds” in it, vomiting blood or black, tarry stools; or if you have any stomach pain, nausea, heartburn or indigestion.

**NOTE:** Please speak with your health-care provider before starting an NSAID to determine whether or not NSAID therapy is appropriate for you.
What are the side effects of NSAIDs?

In general, NSAIDs are fairly well tolerated. More common side effects include bloating, nausea, stomach pain, heartburn and constipation.

Rare side effects of NSAIDs include:

- allergic reactions such as skin rashes or wheezing
- headaches, dizziness or ringing in the ears (tinnitus)
- unusual bruising or bleeding
- kidney problems
- gastrointestinal problems — NSAIDs can cause irritation to the lining of the stomach, esophagus and intestine resulting in stomach upset.
- fluid retention — NSAIDs can cause fluid retention with swelling of the ankles
- blood pressure — NSAIDs can increase blood pressure, which should be monitored periodically, especially if you have hypertension

NSAIDs can also affect the protective lining of the stomach, making you more susceptible to ulcers and bleeding. Ulcers usually cause stomach pain, nausea and sometimes vomiting, but in some people ulcers produce no symptoms.

For NSAIDs that are applied to the skin, very little medication is absorbed into the bloodstream, but there’s still the possibility of adverse effects, particularly if you already have a history of stomach ulcers or are taking an oral NSAID. The common side effects of topical NSAIDs include dry skin and rash at the site of application.

What helps to reduce side effects?

Take your NSAID as prescribed and contact your health-care provider if you have any concerns while taking the medication.

Taking your NSAIDs with food may help reduce stomach upset.

Taking a medication to protect the lining of the stomach or using a COXIB, such as celecoxib, can be helpful in reducing the risk of serious gastrointestinal side effects. There are currently two available types of stomach protection medications: misoprostol and proton pump inhibitors. Medications that protect the stomach are discussed in more detail starting on page 40.
Do I need any monitoring while taking NSAIDs?

You don’t normally need blood work while taking NSAIDs. However, if you take NSAIDs regularly, your doctor will likely monitor your blood pressure and order periodic blood tests to ensure the NSAIDs are not causing problems with stomach bleeding or with your kidneys.

### NSAID and COXIB chart

<table>
<thead>
<tr>
<th>CLASS</th>
<th>BRAND NAMES</th>
<th>PRODUCT</th>
<th>COMMON DOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NSAID (Acetic Acids)</strong></td>
<td>Voltaren®, Voltaren-SR®</td>
<td>Diclofenac</td>
<td>50–75 mg, 2–3 times daily</td>
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<td></td>
<td>Ultradol®</td>
<td>Etodolac</td>
<td>200–300 mg, 2–3 times daily</td>
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<td>Toradol®</td>
<td>Keterolac</td>
<td>10 mg, 4–6 times daily</td>
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<td></td>
<td>Indocid®</td>
<td>Indomethacin</td>
<td>25–75 mg, 2–3 times daily</td>
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<td></td>
<td>Clinoril®</td>
<td>Sulindac</td>
<td>150–200 mg, twice daily</td>
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<tr>
<td><strong>COXIB</strong></td>
<td>Celebrex®</td>
<td>Celecoxib</td>
<td>100–200 mg, twice daily</td>
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<tr>
<td><strong>NSAID (Naphthylal-kanones)</strong></td>
<td>Relafen®</td>
<td>Nabumetone</td>
<td>1,000 mg, twice daily</td>
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<td><strong>NSAID (Oxicams)</strong></td>
<td>Feldene®</td>
<td>Piroxicam</td>
<td>20 mg, once a day</td>
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<td></td>
<td>Mobiflex®</td>
<td>Tenoxicam</td>
<td>10–20 mg, once a day</td>
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<td></td>
<td>Mobicox®</td>
<td>Meloxicam</td>
<td>7.5–15 mg, once a day</td>
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<tr>
<td><strong>NSAID (Propionic Acids)</strong></td>
<td>Ansaid®, Froben®, Froben-SR®</td>
<td>Flurbiprofen</td>
<td>100 mg, twice daily</td>
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<td></td>
<td>Motrin®, Advil®</td>
<td>Ibuprofen</td>
<td>400–800 mg, 3–4 times daily</td>
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<tr>
<td></td>
<td>Orudis®, Oruvail®, Rhodis®</td>
<td>Ketoprofen</td>
<td>50 mg, 3–4 times daily</td>
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<tr>
<td></td>
<td>Aleve®, Anaprox®, Naprosyn®</td>
<td>Naproxen</td>
<td>220–550 mg, twice daily</td>
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<tr>
<td></td>
<td>Naprosyn-SR®, Naprelan®</td>
<td></td>
<td>750–1,000 mg once daily (Naprelan®)</td>
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<td></td>
<td>Daypro®</td>
<td>Oxaprazin</td>
<td>1,200 mg, once a day</td>
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<td></td>
<td>Surgam®, Surgam-SR®</td>
<td>Tiaprofenic acid</td>
<td>200 mg, 3 times daily</td>
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<tr>
<td>CLASS</td>
<td>BRAND NAMES</td>
<td>PRODUCT</td>
<td>COMMON DOSES</td>
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<tr>
<td><strong>NSAID (Salicylates)</strong></td>
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<tr>
<td>Aspirin®*</td>
<td>Acetylsalicylic acid (ASA)</td>
<td>325–650 mg, 4–6 times daily</td>
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<tr>
<td>Dolobid®</td>
<td>Diflunisal</td>
<td>250–500 mg, 2–3 times daily</td>
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<td><strong>NSAID/ Stomach Protection Combinations</strong></td>
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<tr>
<td>Arthrotec®</td>
<td>Diclofenac/ misoprostol</td>
<td>1 tablet twice daily (each tablet contains 50 mg or 75 mg diclofenac + 200 µg misoprostol)</td>
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<tr>
<td>Vimovo®</td>
<td>Naproxen/ esomeprazole</td>
<td>1 tablet twice daily (each tablet contains 375 mg or 500 mg naproxen + 20 mg esomeprazole)</td>
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<tr>
<td><strong>Topical NSAID Preparations</strong></td>
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<tr>
<td>Pennsaid®*</td>
<td>Diclofenac</td>
<td>50 drops per knee, 3 times a day, or 40 drops per knee, 4 times a day</td>
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</tr>
<tr>
<td>Voltaren Emulgel®*</td>
<td>Diclofenac</td>
<td>2–4 g (1 g equals a strip approximately 2 cm long) should be applied 3–4 times a day</td>
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*This product does not require a prescription and may be purchased over the counter.*
**Stomach protection**

**Why is protecting the stomach important?**

Some of the medications used to treat arthritis (NSAIDs, prednisone (a corticosteroid)) can irritate the lining of the stomach. If this irritation persists or is particularly aggressive, it may result in the formation of ulcers in the stomach or the first part of the small intestine (duodenum). Ulcers commonly cause pain, although sometimes they can be painless.

**Who should receive medication to protect the stomach?**

Patients who experience stomach upset with NSAIDs or have risk factors for stomach ulcers should discuss stomach protection with their doctor. Risk factors include: ages 65+, a previous stomach ulcer or bleeding from the bowels, using multiple NSAIDs, including ASA, taking anticoagulants, such as warfarin (Coumadin®), or taking corticosteroids.

**What medications are used to protect the stomach?**

There are currently two available types of stomach protection medications: misoprostol and proton pump inhibitors. Histamine H2-receptor antagonist (H2RAs), such as ranitidine (Zantac®), are generally not effective for the prevention of NSAID-induced stomach ulcers and are typically avoided.
Misoprostol

Brand names: Cytotec®, generics
Arthrotec® is a combination of the NSAID diclofenac with misoprostol in one tablet

What is misoprostol?

Misoprostol replaces a naturally occurring substance that helps maintain the stomach’s protective mucous lining.

How is misoprostol administered?

Misoprostol is taken orally in tablet form.

What is the typical dose and when do I take it?

The usual dose of misoprostol is 200 mcg taken two to three times per day.

When should I not take misoprostol and call my doctor?

Any woman who is pregnant or may become pregnant should not take misoprostol since it can cause emergency complications, such as an incomplete miscarriage.

What are the side effects of misoprostol?

Your body may take two to three days to adjust to misoprostol, during which time you may experience nausea, cramps and diarrhea. These common side effects often disappear completely, but if they persist, contact your doctor.
Proton Pump Inhibitors (PPIs)

Brand names: Esomeprazole (Nexium®), Lansoprazole (Prevacid®), Omeprazole (Losec®), Pantoprazole (Pantoloc®, Tecta®), Rabeprazole (Pariet®)

Vimovo® is a combination of the NSAID naproxen with esomeprazole in one tablet

What are PPIs?

PPIs are a class of medications that work by stopping your stomach from producing ulcer-causing acid. When taken with an NSAID, PPIs reduce the risk of developing ulcers and promote ulcer healing.

They also can reduce symptoms of stomach upset, such as nausea, heartburn and indigestion.

How are PPIs administered?

PPIs are available in pill form and are taken orally.

What is the typical dose and when do I take it?

The dose varies depending on which PPI your doctor has prescribed. They are typically taken once or twice a day.

When should I not take a PPI and call my doctor?

Do not take PPIs if you have had an allergic reaction to the medication.

What are the side effects of PPIs?

PPIs are generally well tolerated. In rare cases, some patients may experience nausea/diarrhea, headache or a rash.
What are corticosteroids?

Cortisol is a hormone produced naturally by the body’s adrenal glands that has many functions in our bodies. One of cortisol’s important actions is its anti-inflammatory function. Cortisol can be considered the “brake” for our immune system, preventing it from overreacting to infections, injuries and trauma. However, our bodies cannot produce enough cortisol to meet the challenge of inflammatory arthritis. Corticosteroids, such as prednisone, mimic the anti-inflammatory action of cortisol in our bodies and help to relieve pain and swelling from arthritis. Corticosteroids are commonly referred to as steroids.

Steroids are very effective at reducing inflammation, but a major limitation to their long-term use is adverse effects.

What are corticosteroids used for?

Steroid injections may be used to manage acute pain and inflammation associated with osteoarthritis (OA). The oral steroid prednisone is not routinely used or recommended for the management of OA.

Steroid injections or oral prednisone may be used to help relieve pain and swelling associated with inflammatory arthritis.

How long do corticosteroids take to work?

Steroids work quickly (usually within a few days) and some patients start to feel better within hours of getting the injection.

How are corticosteroids administered?

Steroids may be taken orally in pill form or injected directly into a joint or around a tendon.
Which corticosteroid is right for you?

For patients with OA, a steroid injection into an affected joint may be considered if all other treatment options have failed to provide relief of pain and swelling.

For patients with inflammatory arthritis your health-care provider may recommend oral steroids or steroid injections depending on your individual condition.

How long will I have to take my corticosteroids?

Only a health-care provider can make this decision since it depends on a person’s individual condition. For inflammatory arthritis, steroids are often used as an interim measure to help control inflammation while waiting for the slower-acting disease-modifying anti-rheumatic drugs (DMARDs) to take effect or in the case of someone experiencing a flare of inflammatory arthritis. Ideally, steroids should be used at the lowest dosage that provides benefit for the shortest period of time.

Typically, steroids do not play a significant role in the long-term management of osteoarthritis.
Prednisone

Brand names: Winpred®, generics

Drug type: Corticosteroid

What types of arthritis is prednisone used for?

Prednisone is a steroid used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis, lupus and polymyalgia rheumatica.

Prednisone is not recommended in the management of osteoarthritis.

How is prednisone administered?

Prednisone is taken orally.

Prednisone should be taken in the morning, when it more closely resembles the body’s natural release of steroid hormone (cortisol), which is high in the morning and low in the evening.

What is the typical dose and when do I take it?

The dose of prednisone varies widely and is based on your disease and the goals of treatment established by you and your health-care provider. Therefore, there is really no standard dose. Lower doses of prednisone (i.e., 1-10 mg daily) may be sufficient for certain types of inflammatory arthritis, while higher doses (20 mg per day and upwards) may be needed in other cases.

How long will it take to work?

Prednisone generally works very quickly — usually within one to four days — if the prescribed dose is adequate to reduce your particular level of inflammation. Some people notice the effects of prednisone hours after taking the first dose.

When should I not take prednisone and call my doctor?

Prednisone should be gradually decreased before stopping the medication. Stopping prednisone too quickly can sometimes cause serious side effects. Call your prescriber before making any changes to your prednisone dose.
Prednisone can make it hard for your body to fight infections. Therefore, if you have an infection, your prescriber may avoid giving you prednisone. If you develop symptoms of an infection (i.e., fever or chills) while taking prednisone, please contact your prescriber.

You may need to alter your dose of prednisone if you are having surgery (until you are healed and there is no sign of infection). Please discuss this with your prescriber.

Call your prescriber right away if you develop new severe groin pain. (This may be associated with a very rare side effect of prednisone).

Is there anybody who should not take prednisone?

Avoid taking prednisone if you have had an allergic reaction to this medication.

People with systemic fungal infections should also avoid this medication.

What are the side effects of prednisone?

Prednisone acts quickly and effectively to decrease inflammation, but adverse effects are a major limitation to long-term use. Not all side effects occur in everyone. Most side effects are more commonly associated with use of higher doses for prolonged periods of time and disappear with the decrease and discontinuation of prednisone.

Prednisone can increase your appetite, which can lead to weight gain. When taken for long periods of time prednisone can cause you to lose calcium from your bones, which can lead to weakened bones and osteoporosis if not appropriately managed.

Prednisone can cause nausea, indigestion, increased blood pressure, fluid retention, increased blood sugars, glaucoma, cataracts, difficulty sleeping, mood swings, increased cholesterol and skin changes (acne, or make your skin thinner, more easily damaged and slow to heal).

If you will be taking prednisone for a prolonged period of time (more than three months), obtain a MedicAlert® bracelet (www.medicalert.ca or 1.800.668.1507).
What helps to reduce side effects?

The lowest dose of prednisone that controls symptoms should be used to reduce adverse effects. The duration of steroid use should also be limited. High-dose prednisone bursts often are used to suppress disease flares. High doses are used for several days until symptoms are controlled, followed by a taper to the lowest effective dose.

To avoid weight gain while taking prednisone, follow a healthy diet and, if possible, exercise regularly.

To prevent calcium loss from bones, if you are taking prednisone regularly it is important to take extra calcium and vitamin D. Please speak to your health-care provider about how much you need. If you are taking prednisone for longer periods of time (7.5 mg prednisone or more per day for longer than three months, or less if other risk factors are present) your prescriber may want you to take a medication to help harden your bones (i.e., alendronate, risedronate).

Taking prednisone with food or milk can help reduce nausea and indigestion.

If you experience difficulty sleeping while taking prednisone, you may consider taking prednisone in the morning and avoid taking the medication in the evening or close to bedtime.

Do I need any monitoring while taking prednisone?

Routine blood tests may not be required while you are taking prednisone. However, if you are taking prednisone for longer periods of time (more than three months) your prescriber will likely request regular blood work to monitor for blood sugar changes and increased cholesterol and periodic bone mineral density (BMD) tests of your bones. Your prescriber will also monitor for vision changes if you are taking prednisone long-term.

Your prescriber may also want to meet with you regularly to monitor your blood pressure and to evaluate whether you need to continue taking prednisone.
Steroid Injection

Brand names: Depo-medrol® (methylprednisolone), Kenalog® (triamcinolone), Aristospan® (triamcinolone), Celestone Soluspan® (betamethasone)

Drug type: Corticosteroid

What types of arthritis are steroid injections used for?

Steroid injections are used to help relieve the pain and swelling associated with many types of arthritic conditions, including both inflammatory arthritis and osteoarthritis. Injecting a steroid in or around the joint is an effective way to locally reduce pain and swelling.

How are steroid injections administered?

Steroid injections are injected directly into a joint or around a tendon.

What is the typical dose and when do I take it?

If the first injection works well then you may benefit from another. There is some debate that too many injections may weaken tendons and ligaments and damage cartilage. As a general rule, the number of injections is limited to three or four for any single joint per year.

How long will it take to work?

Most injections typically take full effect in 24 to 48 hours. If local anesthetic (“freezing”) is given with the injection, you may feel improvement rapidly. After the injection, it is normal to feel a temporary increase in discomfort in the joint, which should be resolved within 24 hours. If possible, it is best to rest the joint for 24 to 48 hours after an injection, as studies have shown this may improve the effect of the injection.

The length of time an injection will last is variable. Some patients can feel better for months while others find only a few days of relief.

When should I not be given a steroid injection and call my doctor?

For the most part, steroid injections are very safe and suitable for most people. Anyone who has had a serious allergic reaction to steroids and those with an infection in the joint or surrounding the joints (e.g., skin or soft tissues), should not receive injections.
If the injected area becomes very painful, red or swollen, call your health-care provider. If your health-care provider is not available, seek medical attention as these symptoms suggest infection (a rare side effect of steroid injections).

**What are the side effects of steroid injections?**

Steroid injections can rarely cause injury to a joint or tendon. Please discuss these risks with your health-care provider.

After an injection some patients feel “flushed.” This usually isn’t serious, but let your health-care provider know if this should happen.

Steroid injections can sometimes cause a rise in blood sugar, particularly if you have diabetes. If you have diabetes make sure you test your glucose levels regularly for a few days after the injection and let your prescriber know if there are any abnormal changes.

Steroid injections rarely cause changes to the skin where the medication was injected. One rare change is the loss of pigment in the skin (skin turns white). This is more common in individuals with dark skin. Another rare change is the loss of the fat layer below the skin, causing the skin to turn a purple colour.

**What helps to reduce side effects?**

If possible, rest the joint for 24 to 48 hours after the injection.

If you experience discomfort in the joint after the injection, you may treat the discomfort by applying a cold pack or by using medications, such as acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs) — check with your health-care provider.

**Do I need any monitoring if I have been given a steroid injection?**

On occasion, your health-care provider may request routine blood tests after you have been given a steroid injection. If you have diabetes your prescriber may recommend monitoring your blood sugars regularly for a few days after the injection.

Your health-care provider may meet with you regularly to ensure that the steroid injection is adequately controlling your pain and not causing adverse effects.
What is viscosupplementation?

Viscosupplementation is the injection of a clear gel-like substance called hyaluronan into the joint for the treatment of osteoarthritis (OA). Hyaluronan is an important part of the synovial fluid (thick liquid that lubricates the joint) and cartilage. Injecting it into the joint is thought to lubricate the joint (much like oil lubricates an engine), reduce pain and allow greater joint movement.

What is viscosupplementation used for?

These injections have been shown to have modest benefits in mild to moderate OA of the hip and knee.

Viscosupplementation injections are not routinely recommended for treatment of OA due to limited benefits, risk of side effects and high costs of the various agents available.

How is viscosupplementation administered?

Some products are given as a one-time single injection, while others are injected once weekly for either three or five weeks.

Viscosupplementation products can be purchased without a prescription, but it is necessary to see a health-care provider for the injection.

Which viscosupplementation agent is right for you?

For patients with OA, a viscosupplementation injection into an affected joint may be considered if all other options have failed to provide relief of pain and swelling. There is no information to suggest that one viscosupplementation product is better than another and response to these agents varies from person to person.

How long will I have to use viscosupplementation?

These injections may be repeated at a later date if they are felt to be helpful; however, the effect of repeated injections is unknown. Typically, viscosupplementation does not play a significant role in the long-term management of OA.
Viscosupplementation (hyaluronan injections)

Brand names: NeoVisc®, SynVisc®, SynVisc One®, Durolane®, Euflexxa®

Drug type: Over the counter

**NOTE:** Viscosupplementation products can be purchased without a prescription, but it is necessary to see a health-care provider for the injection.

**What types of arthritis is viscosupplementation used for?**

These injections have been shown to have modest benefits in mild to moderate osteoarthritis (OA) of the hip and knee.

Viscosupplementation injections are not routinely recommended for treatment of OA due to limited benefits, risk of side effects and the high costs of the various agents available.

Viscosupplementation is not used in the management of inflammatory arthritis.

**How is viscosupplementation administered?**

Viscosupplementation agents are injected directly into a joint.

**What is the typical dose and when do I take it?**

One injection into the involved joint. May be given once only or weekly for three to five weeks depending on affected joint and product used.

**How long will it take to work?**

The onset of relief is slower (several weeks) than with steroid injections, but the effect may last longer. This may vary from person to person.

**When should I not use viscosupplementation and call my doctor?**

Do not use viscosupplementation products if you have had an allergy to hyaluronan preparations.

Do not use viscosupplementation products if you have a joint infection or an infection of the skin near the injection site.
What are the side effects of viscosupplementation?

The most common adverse events reported have been pain, swelling and/or inflammation in the injected knee.

There have been rare reports of viscosupplementation products causing a drop in blood counts and fever. People have also rarely reported pseudogout (sudden, painful swelling in one or more of your joints).

What helps to reduce side effects?

If possible, rest the joint for 48 hours after the injection.

If you experience discomfort in the joint after the injection you may treat the discomfort by applying a cold pack or by using medications, such as acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs). Please check with your doctor.

Do I need any monitoring if I have been given a viscosupplementation injection?

Routine blood tests are not required with viscosupplementation products.

Your health-care provider may meet with you regularly to ensure that the viscosupplementation product is adequately controlling your OA pain and not causing adverse effects.
DMARDs

What are DMARDs?

Disease-modifying anti-rheumatic drugs (DMARDs) are a class of medications used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis. Persistent joint inflammation (swollen, tender, painful joints) can lead to joint damage if left untreated. Once a joint is damaged, the damage cannot be reversed. Early treatment aimed at reducing inflammation is important to prevent damage to the joint. This is where DMARDs can help. DMARDs work to suppress inflammation and help to prevent joint damage.

Using two or three DMARDs together is called combination therapy. Combination therapy with two or more DMARDs may be effective when single DMARD treatment is unsuccessful. Some studies suggest that starting therapy with a combination of DMARDs is better than starting with one medication. Your prescriber may recommend combination therapy to help treat your inflammatory arthritis.

What are DMARDs used for?

DMARDs are only used to treat inflammatory arthritis; they are not used in the management of osteoarthritis (OA).

How long do DMARDs take to work?

DMARDs generally work well in most people; however, they may take six to 12 weeks to begin to have an effect. Shutting down the inflammatory process which causes inflammatory arthritis can take a long time, but the result of healthy joints will be worth the wait.
While you are waiting for your DMARD to take effect, your health-care provider may prescribe an additional medication, such as prednisone or a non-steroidal anti-inflammatory drug (NSAID), to help control symptoms.

**How are DMARDs administered?**

Most DMARDs are taken orally in pill form. Methotrexate (MTX), a commonly used DMARD, can also be given by injection.

**Which DMARDs are right for you?**

Your prescriber will recommend a DMARD that is best suited to your type of arthritis, other medical problems and/or medications. Although DMARDs can be used one at a time, taking two or three together may be more beneficial, depending on your particular inflammatory arthritis. People with mild inflammatory arthritis may start with a single DMARD, such as hydroxychloroquine or methotrexate. However, those with more severe inflammatory arthritis may need more aggressive treatment and may receive two or three medications at the same time.

**DMARDS and pregnancy**

Please tell your health-care provider if you are pregnant or planning to get pregnant before starting treatment with a DMARD. Certain DMARDs cannot be taken during pregnancy. Your health-care providers can help devise a safe plan to treat your inflammatory arthritis while you try to get pregnant and during your pregnancy. Motherisk is a program affiliated with The Hospital for Sick Children (SickKids) in Toronto, ON. It is an excellent resource for information on the use of medications during pregnancy and breastfeeding. Please visit the Motherisk website ([www.motherisk.org/women/pregnancyResources.jsp](http://www.motherisk.org/women/pregnancyResources.jsp)) or call the helpline (1.877.439.2744) if you would like additional information on the use of medications during pregnancy and breastfeeding.

**How long will I have to take my DMARDs?**

Inflammatory arthritis is a chronic condition that will likely require life-long treatment. Treatment of inflammatory arthritis is usually a balancing act between taking as much medication as needed to control the arthritis and as little medication as necessary to minimize potential side effects. Your prescriber may adjust your medication dose, change or add medications to your treatment based on symptoms, findings on physical examinations and your laboratory tests.
**Hydroxychloroquine (HCQ)**

Brand names: Plaquenil®, generics

Drug type: Disease-Modifying Anti-Rheumatic Drug (DMARD)

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**What types of arthritis is HCQ used for?**

HCQ is a DMARD used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis.

**How is HCQ administered?**

HCQ is taken orally.

**What is the typical dose and when do I take it?**

HCQ comes in 200 mg tablets. The usual dose is between one and two tablets per day (200 to 400 mg per day). If you are taking two tablets a day you can take them all at once or divide them up: one in the morning and one in the evening. The maximum amount of HCQ you can take is based on your body weight. HCQ is often used with other drugs, such as methotrexate (MTX) and/or sulfasalazine (SSZ), in combination therapy.

**How long will it take to work?**

Like with many other DMARDs, you will not feel the effects of HCQ right away. Most people start noticing the effects about six to eight weeks after they start to take the medication, but full benefit may not be apparent for up to three months. It is important to be patient and continue taking your medication.

**When should I not take HCQ and call my doctor?**

If you have existing problems associated with the retina of the eye (see below), HCQ may not be an appropriate treatment option for you. Please discuss this with your health-care provider.

If you experience any changes to your vision while on HCQ discontinue therapy and contact your health-care provider immediately.

Anyone who has had a previous allergic reaction to HCQ should avoid the medication.
HCQ is likely compatible with pregnancy and has been used safely in clinical practice. Data suggests that the drug does not pose significant fetal risk and the medication is often continued during pregnancy. Please discuss treatment options with your health-care provider if you are planning a pregnancy or become pregnant.

**What are the side effects of HCQ?**

HCQ is generally well tolerated. Rare side effects associated with HCQ include upset stomach, diarrhea, headaches and dizziness. HCQ can also cause a rash, darkening of the skin and ringing in the ears. If you develop a rash or ringing in the ears while on HCQ, please contact your health-care provider.

HCQ can sometimes make your skin more sensitive to the sun, meaning you may sunburn more easily.

In rare cases, HCQ can cause problems with your vision and with the back of the eye ( retina ). The most common vision-related issue are corneal deposits. This is usually due to high daily doses or HCQ and rarely occurs at doses of 400 mg per day or less. The deposits do not affect vision but can cause sensitivity to light and the appearance of halos or rings around lights. Very rarely HCQ can cause deposits at the back of the eye ( retinal deposits ). If this occurs, you might notice blurred vision, decreased night and peripheral vision, difficulties focusing your eyes, reading or seeing words and letters, and parts of objects may also appear to be missing. Damage to the retina is extremely rare in cases where a person has been taking HCQ for less than two years. However, once damage occurs, it may be permanent, therefore, appropriate monitoring of your eyes is essential.

**What helps to reduce side effects?**

Take HCQ exactly as prescribed. Taking it with food or milk can help reduce stomach upset. You may notice that you are more sensitive to sun exposure while taking HCQ, so be sure to use sunscreen regularly.

An ophthalmologic exam is recommended prior to starting HCQ, then periodically once you have started HCQ. This is to ensure the medication isn’t affecting your vision and the back of your eye. Please discuss this with your health-care provider prior to starting HCQ.
Do I need any monitoring while taking HCQ?

On occasion, your health-care provider may request blood tests while taking HCQ. Your health-care provider may meet with you regularly to ensure that HCQ is adequately controlling your inflammatory arthritis and not causing adverse effects.

A repeat ophthalmologic exam is not usually required during the first five years of HCQ therapy. After five years an ophthalmologic exam is required yearly. If you are at a higher risk for HCQ-induced eye problems an ophthalmologic exam may be required every year after starting HCQ. Risk factors that may increase the likelihood of eye problems include liver or kidney disease, obesity, age (60 and older) and pre-existing diseases of the eye.
Leflunomide (LEF)

Brand names: Arava®, generics

Drug type: Disease-Modifying Anti-Rheumatic Drug (DMARD)

What types of arthritis is LEF used for?

LEF is a DMARD used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis.

LEF is commonly used as an alternative to methotrexate (MTX) for people who do not adequately respond to MTX or are intolerant to MTX. LEF may also be used in combination with MTX or as an alternative to MTX in combination therapy.

How is LEF administered?

LEF is taken orally in pill form.

What is the typical dose and when do I take it?

LEF is usually taken as a 10 mg or 20 mg tablet once a day. In some cases, it may be prescribed every other day.

How long will it take to work?

Like with many DMARDs, you will not feel the effects of LEF right away. Most people start noticing the effects about six to eight weeks after they start to take the medication, but its full benefit may not be apparent for up to three months. It is important to be patient and continue taking your medication.

To provide symptom relief while you are waiting for LEF to work, your prescriber may recommend you take a steroid (such as prednisone) or a non-steroidal anti-inflammatory drug (NSAID).

When should I not take LEF and call my doctor?

You may not be able to take LEF if you have any blood disorders (e.g., anemia, low platelets), an active infection, severe kidney or liver disorders, problems with your immune system or if you suffer from alcoholism or alcoholic liver disease. If you have any of these conditions,
please discuss the situation with your prescriber. (LEF has the potential to harm your liver so your alcohol use must be restricted while taking LEF).

Taking LEF can make it harder for you to fight infections. If you have a fever or think you may have an infection, contact your health-care provider. You may need to stop taking LEF if you are having surgery until you are healed and there is no sign of infection. Please discuss this with your prescriber.

Taking LEF before or during pregnancy can cause birth defects or even a miscarriage. If you are pregnant or trying to get pregnant, both partners (man and woman) should refrain from taking this drug. LEF can remain in the body for a long time. Typically, it is recommended that LEF is discontinued for women and men for two years prior to getting pregnant. You may be able to take another medication that will help eliminate LEF from your body more quickly if you are planning to get pregnant sooner. If you and your partner are planning to get pregnant, please discuss this with your health-care provider.

Any woman who is breastfeeding should also avoid LEF.

Anyone who has had a previous allergic reaction to LEF should avoid the medication.

**What are the side effects of LEF?**

Like all medications, taking LEF carries some risk of side effects, which must be balanced with the potential benefits. Overall, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from LEF. When monitored properly the vast majority of side effects are rare, generally improve over time and are reversible.

The most common side effects of LEF is nausea. This usually gets better over time as you get used to taking the medication. LEF can also cause diarrhea, which can be severe. If you develop diarrhea contact your health-care provider. Some people may notice a decreased appetite and weight loss while taking LEF. Let your health-care provider know if you are losing weight while taking LEF.
In some rare cases, people experience a skin rash, thinning of the hair and the feeling of “pins and needles” or tingling in the hands and feet. Talk to your health-care provider if you experience any of these effects.

Also, in rare occurrences, LEF can cause an increase in blood pressure. If you already have high blood pressure, please discuss this with your health-care provider before starting LEF.

LEF may affect your liver and blood counts. This should be closely monitored with routine blood work.

Lastly, LEF may cause lung problems in rare circumstances. Please contact your health-care provider if you develop new shortness of breath or a new, prolonged cough while taking LEF.

**What helps to reduce side effects?**

Take LEF as prescribed and contact your health-care provider if you have any concerns while taking the medication.

Your health-care provider may recommend a lower dose to help reduce some side effects (i.e., stomach upset, hair loss).

Taking LEF before going to bed can sometimes help you to sleep through any unpleasantness, such as nausea.

Restricting your intake of alcohol can help avoid potential liver problems.

**Do I need any monitoring while taking LEF?**

You will need regular blood tests to monitor your liver and blood counts for side effects. When beginning to take LEF, your prescriber may request blood work more frequently (every two weeks) for a period of time. If you have no issues with the medication during this time, blood tests will be required less frequently (every four to 12 weeks).

Your health-care provider may meet with you regularly to ensure that LEF is adequately controlling your inflammatory arthritis and not causing adverse effects.
Methotrexate (MTX)

Brand names: Metoject®, Rheumatrex®, Methotrexate Sodium®, generics

Drug type: Disease-Modifying Anti-Rheumatic Drug (DMARD)

What types of arthritis is MTX used for?

MTX is a DMARD used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis.

MTX is the most common medication used to treat inflammatory arthritis. For rheumatoid arthritis, MTX is considered to be the first-line DMARD because of its long-standing benefits.

How is MTX administered?

MTX can be taken orally or given as a subcutaneous (under the skin) or intramuscular (in the muscle) injection.

What is the typical dose and when do I take it?

The most common dose range is 7.5 to 25 mg once a week, given by injection or taken orally in pill form.

The most important thing to remember is that MTX is only taken once a week. Choose a day of the week that is least demanding since some people may feel unwell (tired, stomach upset, loss of appetite) for a day or two after taking MTX.

MTX comes in 2.5 and 10 mg tablets. The 2.5 mg tablets are more commonly used. If you are taking 15 mg or more a week (six or more 2.5 mg tablets), the dose can be split to take half in the morning and half at night (i.e., if you are taking six tablets a week, you can take three with breakfast and three with your evening meal). Dividing doses greater than 15 mg over the day allows for better absorption of your medication. MTX injections are available in a number of strengths. Typically, you will be given 0.3 to 1.0 mL per week.
How long will it take to work?

Like with many of the DMARDs, you will not feel the effects of MTX right away. Most people start noticing the effects about six to eight weeks after they start to take the medication, however, the full benefit of MTX may not be evident for up to three months. It is important to be patient and continue taking your medication.

To provide symptom relief while you are waiting for MTX to take effect, your prescriber may recommend taking a steroid, such as prednisone or a non-steroidal anti-inflammatory drug (NSAID).

When should I not take MTX and call my doctor?

You may not be able to take MTX if you have any blood disorders (i.e., anemia, low platelets), an active infection, severe kidney or liver disorders, problems with your immune system or if you suffer from alcoholism or alcoholic liver disease. If you have any of these conditions, please discuss the situation with your prescriber.

MTX has the potential to harm your liver so your alcohol use must be restricted while taking MTX.

Taking MTX can make it more difficult for your body to fight infections. If you have a fever or think you may have an infection, contact your healthcare provider. You may need to stop taking MTX if you are having surgery until you are healed and there is no sign of infection. Please discuss this with your prescriber.

Taking MTX before or during pregnancy can cause birth defects or even a miscarriage. Therefore, if you are pregnant or trying to get pregnant, both partners (man and woman) should refrain from taking this drug. The best time to stop MTX before getting pregnant, for both partners, is not entirely clear. Typically, it is recommended that both partners discontinue MTX for at least three months before pregnancy. If you or your partner are planning to get pregnant, please discuss this with your healthcare provider.

Anyone who has had a previous allergic reaction to MTX should avoid the medication. Any woman who is breastfeeding should also avoid MTX.
MTX interacts with a number of other medications, including some commonly used antibiotics. Please speak with your health-care provider about whether any of the other medications you currently take interact with MTX. If you need an antibiotic while you are taking MTX, be sure to discuss this possible interaction with your prescriber and/or pharmacist.

**What are the side effects of MTX?**

Like all medications, taking MTX carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from MTX. When monitored properly the vast majority of side effects are rare, generally improve over time and are reversible.

The most common side effects of MTX are nausea, feeling unwell or feeling tired for 24 to 48 hours after taking a dose. This usually improves over time as you get used to taking the medication. In some rare cases, people taking MTX may experience headaches, hair loss, mouth sores or ulcers and/or increased sensitivity to the sun.

MTX may affect your liver and blood counts. This should be closely monitored with routine blood work.

In rare occurrences, MTX may cause a serious lung problem. Please contact your health-care provider if you develop shortness of breath or a new, prolonged cough while taking MTX.

**What helps to reduce side effects?**

Take MTX as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To reduce some of the side effects, such as nausea and mouth sores, your prescriber may suggest a folic acid supplement to be taken daily or a few times a week while you are taking MTX. Good oral hygiene also helps to prevent the development of mouth sores. Please speak with one of your health-care providers if mouth sores become problematic.

Taking MTX before going to bed can sometimes help you sleep through any unpleasantness, such as nausea.
You may also notice that you are more sensitive to sun exposure while taking MTX, so be sure to use sunscreen regularly.

Restricting your intake of alcohol can also help avoid potential liver problems.

**Do I need any monitoring while taking MTX?**

You will need regular blood tests to monitor your liver and blood counts for side effects. When you begin taking MTX your prescriber may request blood work more frequently (every two to four weeks) for a period of time. If you have no issues with the medication during this time, blood tests will be required less frequently (every four to 12 weeks).

Your health-care provider may meet with you regularly to ensure that MTX is adequately controlling your inflammatory arthritis and not causing any adverse effects.
**Sulfasalazine (SSZ)**

**Brand names:** Salazopyrin®, generics

**Drug type:** Disease-Modifying Anti-Rheumatic Drug (DMARD)

**What types of arthritis is SSZ used for?**

SSZ is a DMARD used to treat inflammatory types of arthritis, such as rheumatoid and psoriatic arthritis.

**How is SSZ administered?**

SSZ is taken orally in pill form.

**What is the typical dose and when do I take it?**

The most common dose is 1,000 mg (two tablets) twice daily. Each tablet contains 500 mg of SSZ. Your prescriber may increase the dose to 1,500 mg (three tablets) twice daily.

SSZ may upset the stomach so it is important to start the medication at lower doses (one tablet daily) and gradually increase to the recommended dosage. SSZ is often used in conjunction with other drugs, such as methotrexate (MTX) and hydroxychloroquine (HCQ), in combination therapy.

**How long will it take to work?**

Similar to other DMARDs, you will not feel the effects of SSZ right away. Most people start noticing the effects about six to eight weeks after they start to take the medication, but its full benefits may not occur for up to three months. It is important to be patient and continue taking your medication.

**When should I not take SSZ and call my doctor?**

You may not be able to take SSZ if you have severe kidney or liver disorders.

Anyone who has had a previous allergic reaction to SSZ or medications containing sulfa should avoid the medication. SSZ should also be avoided if you have had an allergy to acetylsalicylic acid (ASA, Aspirin®).
Generally, SSZ should be avoided during pregnancy. Occasionally this medication may need to be continued during pregnancy and/or breastfeeding, but only after discussion between you and your prescriber. Males who experience low sperm counts while taking SSZ should discontinue the medication three months prior to attempting conception.

**What are the side effects of SSZ?**

Like all medications, taking SSZ carries some risk of side effects, which must be balanced with its potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from SSZ. When monitored properly the vast majority of side effects are rare, generally improve over time and are reversible.

The most common side effects of SSZ are nausea and feeling unwell. This usually gets better over time, as you get used to taking the medication. Some people may also experience diarrhea and abdominal pain.

SSZ may cause a rash; stop the medicine and let your doctor know if this occurs.

In rare cases, people experience headaches and increased sensitivity to the sun. In some patients SSZ may also cause the urine and skin to turn an orange-yellow colour or may stain contact lenses yellow. This side effect does not require medical attention. Please speak with your health-care provider if you have concerns.

SSZ may affect your liver and kidney function as well as blood count. This should be closely monitored with routine blood work.

Also in rare occurrences, some men treated with SSZ experience low sperm counts. This complication is reversible when the drug is stopped.

**What helps to reduce side effects?**

Take SSZ as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To reduce the stomach upset associated with SSZ, your prescriber might suggest you start with a lower dose (one tablet once or twice daily) and
increase slowly (adding one tablet per day every week). Taking SSZ with food can also help.

You may experience sun sensitivity while taking SSZ so it is advisable to use sunscreen regularly while taking this medication.

**Do I need any monitoring while taking SSZ?**

You will need regular blood tests to monitor your liver and kidney function and blood counts for side effects. When you begin taking SSZ your prescriber may request blood work more frequently (every two to four weeks) for a period of time. If you have no issues with the medication during this time, blood tests will be required less frequently (every four to 12 weeks).

Your health-care provider may meet with you regularly to ensure that SSZ is adequately controlling your inflammatory arthritis and not causing adverse effects.
Tofacitinib

Brand name: Xeljanz®

Drug type: Disease-Modifying Anti-Rheumatic Drug (DMARD)

What types of arthritis is tofacitinib used for?

Tofacitinib is a DMARD used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA).

Tofacitinib is recommended for use in combination with methotrexate (MTX) in adult patients with moderate to severely active RA who have had an inadequate response to MTX. For patients who cannot tolerate MTX, tofacitinib may be given as monotherapy.

Tofacitinib is never used in combination with biologic medications. Combining tofacitinib with biologic therapy is not recommended because of the increased risk for infection.

How is tofacitinib administered?

Tofacitinib is taken orally in pill form.

What is the typical dose and when do I take it?

Tofacitinib is available in 5 mg tablets. The usual dose is one tablet twice daily. Your prescriber may reduce the dose if you have liver or kidney problems.

How long will it take to work?

Like many of the DMARDs, you will not feel the effects of tofacitinib right away. Most people may start noticing the effects about two to eight weeks after they start taking the medication, but full benefits may not occur for three to six months. It is important to be patient and keep taking your medication.

When should I not take tofacitinib and call my doctor?

Tofacitinib can make it harder for your body to fight infections. Therefore, if you have a fever or think you may have an infection, contact your health-care provider immediately. Also contact your prescriber if you are
having surgery as you may need to stop tofacitinib until you are healed and there is no sign of infection.

Before taking tofacitinib, tell your health-care provider if you are pregnant or planning to become pregnant or are breastfeeding or planning to breastfeed. Women should not breastfeed while being treated with tofacitinib.

Ideally your vaccinations should be up to date prior to starting tofacitinib. If you have already started therapy with tofacitinib, most inactive vaccines are recommended, if indicated (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Please speak with your health-care providers about vaccinations before starting tofacitinib.

Anyone who has had a previous allergic reaction to tofacitinib should avoid the medication.

Tofacitinib interacts with a number of other medications. Please speak with your health-care provider about whether any of the other medications you currently take interact with tofacitinib. It is also recommended that you avoid grapefruit juice and St. John’s wort while taking tofacitinib.

Your body may harbour the bacteria that can cause tuberculosis (TB) if you have been exposed to TB in the past. You may not know you are carrying TB as the bacteria remain in an inactive state and cause no symptoms. This is known as latent TB infection (LTBI). People with LTBI are not infectious and cannot spread TB to others. Tofacitinib can increase the risk of reactivation of LTBI. Prior to starting tofacitinib therapy, your prescriber will screen for LTBI. If you test positive you will be required to take an anti-TB medication prior to starting tofacitinib. Please speak with your health-care provider about LTBI screening before starting a tofacitinib.

Tofacitinib has been rarely associated with a small increased risk of developing certain types of cancer. Proof of a link between tofacitinib and the development of cancer is difficult as people with inflammatory arthritis are generally at a higher risk of developing certain cancers, as compared to the general population. The role of tofacitinib in the development of cancer is currently unknown. Please speak with your health-care provider if you have any questions.
What are the side effects of tofacitinib?

Like all medications, taking tofacitinib carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from tofacitinib. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible.

The most common side effects of tofacitinib are nausea, indigestion and diarrhea. Some people also experience headaches, high blood pressure, urinary tract infections and upper respiratory tract infections.

Tofacitinib may affect your blood counts, liver or kidney function and cholesterol levels. Your health-care provider will use blood tests to monitor for these changes.

In rare cases, tofacitinib has been associated with stomach perforations (holes in the lining of the stomach). All patients who developed stomach perforations were also taking NSAIDs and/or corticosteroids. However, the contribution of these medications to the development of stomach perforations is not known. Tofacitinib should be used with caution in patients who may be at increased risk for stomach perforation (e.g., using NSAIDs and/or corticosteroids, people with a history of diverticulitis). Stomach perforations require immediate medical attention. If you develop fever and severe stomach pain that does not go away, seek medical attention.

What helps to reduce side effects?

Take tofacitinib as prescribed and contact your health-care provider if you have any concerns while taking the medication.

Taking tofacitinib with food may help reduce nausea and stomach upset.

Do I need any monitoring while taking tofacitinib?

You will need blood tests every one to three months. This is important to ensure the tofacitinib is having no harmful effects on your blood counts, liver, kidneys or cholesterol levels.
**What are biologics?**

Inflammation is one of the immune system’s first responses to help fight infection. It also aids the healing process when the body experiences trauma or injuries, such as a broken bone. Once the infection is cleared and/or bones are healed, the body “switches off” this response. For people with inflammatory arthritis, the immune system is overactive and their body does not appropriately “switch off” the inflammatory response. This inflammation then begins to attack normal body tissues and can cause damage in joint tissues.

Biologic medications work by modifying the body’s inflammatory response. By decreasing the immune system’s attack on normal tissues, biologics, like disease-modifying anti-rheumatic drugs (DMARDs), can reduce pain, joint inflammation and damage to bones and cartilage.

For some people living with inflammatory arthritis, a protein our body makes called tumor necrosis factor (TNF) is present in the blood and joints in excessive amounts, thereby increasing inflammation (pain and swelling). Adalimumab, certolizumab, etanercept, golimumab and infliximab are medications designed to block the action of TNF. Abatacept is a medication designed to interfere with the ability of the body’s immune T-cells (certain white blood cells) to communicate with each other. By blocking this interaction, the production of TNF is reduced. Other people with inflammatory arthritis may have an excessive amount of other inflammatory proteins called interleukins. Anakinra and tocilizumab are medications that block the action of certain interleukins. Rituximab is a medication designed to destroy the body’s immune B-cells, which play a part in the pain and swelling caused by inflammatory arthritis. By blocking TNF and interleukins, interfering with T-cell communication and destroying B-cells, biologics work to suppress the body’s immune system and decrease our inflammatory response. Although this suppression can make it slightly harder to fight infections, it also helps to stabilize an overactive immune system.
What are biologics used for?

Biologics are only used to treat inflammatory arthritis; they are not used in the management of osteoarthritis.

Biologics are typically used when inflammatory arthritis has not adequately responded to treatment with DMARDs. Biologics can be used alone to treat inflammatory arthritis but are often given in combination with DMARDs. The most common combination is with methotrexate (MTX). This is because combination therapy may work better than treatment with either medication alone. However, keep in mind that biologics are never used in combination with each other; it is not recommended because of the increased risk for infection.

How long do biologics take to work?

Biologics generally have a positive effect on the treatment of inflammatory arthritis; however, they can take time to work. Some people may notice the effects of the medication quickly (within days to weeks), while with others it may take three to six months to feel the full effects of the medication. It is important to be patient and keep taking your medication as prescribed.

How are biologics administered?

Biologics are administered in two ways: infusion and injection.

An infusion means the medication is delivered intravenously (i.e., IV) via a needle in your arm. Each infusion will be carried out by a health-care professional. The length of the infusion will range from 30 minutes to six hours, depending on the specific medication you are taking or the period of time your prescriber feels is best for you. The infusion can take place in a number of settings, such as your local hospital or specialty infusion clinics. All clinics are staffed by health-care providers. Some medications may be administered in your home with the assistance of a health-care provider. You will be monitored throughout the infusion and in some cases for a period of time after the infusion. The frequency in which you will require an infusion will depend on the specific type of medication you are taking.

A subcutaneous (s.c.) injection means that the medication will be delivered through a needle in the fatty layer of tissue under the skin of your abdomen or thigh (similar to how a diabetic would administer insulin). The medications are available in single-use, pre-filled syringes, containing the dose.
recommended by your prescriber. You can administer the injection yourself or a family member or friend can do this for you. Training and detailed instructions will be provided to you by your health-care providers. If you prefer, you can make arrangements for a health-care provider to administer the medication.

Many of the biologic medications have special storage instructions which require them to be stored between two and eight degrees Celsius (in a refrigerator) in the original container until ready to use. Please ask your pharmacist how to properly store your biologic medication.

**Which biologic is right for you?**

Your prescriber will recommend a biologic that is best suited to your type of arthritis, other medical problems and medications. Your prescriber will discuss the benefits of each biologic, how the medication is administered and its potential adverse effects. TNF blockers are currently the most commonly used first-line biologics, although other biologics may also be used. With many different biologics to choose from, if one doesn’t work, your rheumatologist may suggest another.

Biologic therapy is associated with a small increased risk of infections. Ideally, your vaccinations should be up to date prior to starting a biologic. If you have already started therapy with a biologic, most inactive vaccines are recommended, if indicated (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Please speak with your health-care providers about vaccinations before starting your biologic medication.

Your body may harbour the bacteria that can cause tuberculosis (TB) if you have been exposed to TB in the past. You may not know you are carrying TB as the bacteria remain in an inactive state and cause no symptoms. This is known as latent TB infection (LTBI). People with LTBI are not infectious and cannot spread TB to others. Biologics can increase the risk of reactivation of LTBI. Prior to starting biologic therapy, your prescriber will screen for LTBI. If you test positive you will be required to take an anti-TB medication prior to starting your biologic. Please talk to your health-care provider about LTBI screening before starting a biologic.

Biologics have been associated with a small increased risk of developing certain types of cancer. Proof of a link between biologic medications and the
development of cancer is difficult as people with inflammatory arthritis are generally at a higher risk of developing certain cancers, as compared to the general population. The role of biologic medications in the development of cancer is currently unknown. Please speak with your health-care provider if you have any questions.

**Biologics and pregnancy**

Please tell your health-care provider if you are pregnant or planning to get pregnant before starting treatment with a biologic medication. Biologic medications have not been studied in pregnant women or nursing mothers. Your health-care providers can help devise a safe plan to treat your inflammatory arthritis while you try to get pregnant and during your pregnancy. Motherisk is a program affiliated with The Hospital for Sick Children (SickKids) in Toronto, ON. It is an excellent resource for information on the use of medications during pregnancy and breastfeeding. Visit the Motherisk website ([www.motherisk.org/women/pregnancyResources.jsp](http://www.motherisk.org/women/pregnancyResources.jsp)) or call the helpline (1.877.439.2744) if you would like additional information on the use of medications during pregnancy and breastfeeding.

**How long will I have to take my biologics?**

Inflammatory arthritis is a chronic condition that will likely require lifelong treatment. Treatment of inflammatory arthritis is usually a balancing act between taking as much medication as needed to control the arthritis and as little medication as necessary to minimize potential side effects. Your prescriber may adjust your medication dose, change or add medications to your treatment based on symptoms, findings on physical examinations and your laboratory tests.

**What are subsequent-entry biologics (SEBs)?**

Subsequent-entry biologics (SEBs) or biosimilars are similar to existing biologic medications. SEBs are made by a different manufacturer after the patent on the original biologic medication has expired. SEBs are sometimes mistakenly called “generic” versions of the original biologics. Unlike generics, which are identical copies of chemically made drugs, SEBs are similar to, but not identical to the original biologic drug. This is due to the complexities of the manufacturing process of biologic medications. For more information on SEBs, visit [www.arthritis.ca/seb](http://www.arthritis.ca/seb).
Abatacept

Brand name: Orencia®

Drug type: Biologic

What types of arthritis is abatacept used for?

Abatacept is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA).

For the treatment of RA, abatacept may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX). In recently diagnosed patients who have not been previously treated with MTX, abatacept should be given in combination with MTX (unless MTX cannot be taken).

How is abatacept administered?

Abatacept is delivered through infusion once a month or via subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin) once a week.

What is the typical dose and when do I take it?

When given by infusion the dose of abatacept depends on your body weight, but a typical dose ranges from 500 to 1,000 mg once a month. After your first infusion you will receive another in two weeks, then every four weeks. The medication comes in a single-use vial for administration by infusion. Each infusion takes about 30 to 60 minutes.

When given by s.c. injection, the dose of abatacept is 125 mg weekly. The medication comes in single use pre-filled syringes for administration. Some people may require an initial infusion loading dose prior to starting abatacept by s.c. injection.

Abatacept pre-filled syringes cannot be used for infusions. Single-use vials for infusions cannot be used for s.c. injections.

How long will it take to work?

As with all of the biologics, you may not feel the effects of abatacept right away. Some people begin to feel the effects of the medication fairly
quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for abatacept to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).

**When should I not take abatacept and call my doctor?**

Taking abatacept can make it more difficult for your body to fight infections. Therefore, people with active infections should not take abatacept. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of abatacept with their health-care provider.

Also, contact your health-care provider if you are having surgery as you may need to stop abatacept until you are healed and there is no sign of infection.

Abatacept has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to abatacept should avoid the medication.

People with a history of cancer or emphysema should discuss the use of abatacept with their health-care provider.

Ideally, your vaccinations should be up to date prior to starting an abatacept. If you have already started therapy with abatacept, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking abatacept, you should speak with your health-care provider.
What are the side effects of abatacept?

Like all medications, taking abatacept carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from abatacept. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, abatacept can increase your risk of infections.

In rare cases, people may experience headaches, nausea, back pain and a rash while taking abatacept. If these symptoms become severe please consult your health-care provider.

Also in uncommon circumstances, abatacept can cause an allergic reaction during the infusion (flushing, itching, changes in heart rate and blood pressure, etc.). A health-care provider will monitor for this reaction during the infusion. For people taking the medication by injection, abatacept can in rare instances cause an injection site reaction (redness, pain and itching). Talk to your health-care provider if these symptoms become severe.

What helps to reduce side effects?

Take abatacept as prescribed and contact your health-care provider if you have any concerns while taking the medication.

If you experience an infusion reaction while taking abatacept, prior to your next infusion your health-care provider may recommend a medication pre-treatment to prevent a reaction. Your prescriber may also recommend a longer infusion time.

To avoid injection reactions, injection sites should be rotated and injections should never be given into areas where the skin is tender, bruised, red and/or hard.

Do I need any monitoring while taking abatacept?

Blood tests are not routinely required while you are taking abatacept. Your health-care provider may order periodic blood tests to check your blood count and follow the activity of your arthritis.
Adalimumab

Brand name: Humira®
Drug type: Biologic

What types of arthritis is adalimumab used for?

Adalimumab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis.

For RA and psoriatic arthritis, adalimumab may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

For people recently diagnosed with RA, who have not been previously treated with MTX, adalimumab should be given in combination with MTX (unless MTX cannot be taken).

Adalimumab may be used as monotherapy for treatment of ankylosing spondylitis that has not responded to DMARD therapy.

How is adalimumab administered?

Adalimumab is delivered by subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin).

What is the typical dose and when do I take it?

The usual dose of adalimumab is 40 mg given once every two weeks. In some cases, it may be given once a week.

The medication comes in single use pre-filled syringes for administration.

How long will it take to work?

As with all of the biologics, you may not feel the effects of the adalimumab right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for adalimumab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).
When should I not take adalimumab and call my doctor?

Taking adalimumab can make it more difficult for your body to fight infections. Therefore, people with active infections should not take this medication. If you have a fever, think you may have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of adalimumab with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop adalimumab until you are healed and there is no sign of infection.

Adalimumab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant, or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother. Breastfeeding is not recommended for at least five months after the last adalimumab treatment.

Those who have had a previous allergic reaction to adalimumab should avoid the medication.

Anyone with a history of cancer or nervous system problems, such as multiple sclerosis, should discuss the use of adalimumab with their health-care provider.

Adalimumab may make a condition called congestive heart failure worse. Tell your doctor if you have congestive heart failure.

Ideally, your vaccinations should be up to date prior to starting adalimumab. If you have already started therapy with adalimumab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking adalimumab, you should speak with your health-care provider.

What are the side effects of adalimumab?

Like all medications, taking adalimumab carries some risk of side effects, which must be balanced with its potential benefits. In general, the risk of
joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from adalimumab. When monitored properly, the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, adalimumab can increase your risk of infections.

In rare cases, adalimumab can cause a reaction (redness, pain, and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

Another rare side effect people may experience while taking adalimumab is headaches. If this becomes severe please speak with your health-care provider.

Some people have developed lupus-like symptoms that disappeared after the medication was stopped. If you have chest pains that do not go away, shortness of breath or a rash on your cheeks or arms that gets worse in the sun, call your doctor right away.

There have been unusual cases of disorders that affect the nervous system resulting from people taking adalimumab or other TNF-blockers. Signs that you could be experiencing a problem affecting your nervous system include: numbness or tingling, problems with your vision, weakness in your legs and dizziness.

Adalimumab very rarely can cause a drop in blood counts.

**What helps to reduce side effects?**

Take adalimumab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To avoid injection reactions, injection sites should be rotated and avoid areas where the skin is tender, bruised, red and/or hard.

**Do I need any monitoring while taking adalimumab?**

Blood tests are not routinely required while you are taking adalimumab. However, your health-care provider may order periodic blood tests to check your blood count and follow the activity of your arthritis.
**Anakinra**

Brand name: Kineret®

Drug type: Biologic

**What types of arthritis is anakinra used for?**

Anakinra is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA).

Anakinra is not widely used to treat RA, but may be helpful in people who have not benefited from other treatments. Anakinra may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

**How is anakinra administered?**

Anakinra is delivered by subcutaneous (s.c.) injection — meaning in the fatty layer of tissue just under the skin — once daily.

**What is the typical dose and when do I take it?**

The dose of anakinra is 100 mg daily. The medication comes in single use pre-filled syringes for administration.

**How long will it take to work?**

As with all biologics, you may not feel the effects of the anakinra right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for anakinra to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).
When should I not take anakinra and call my doctor?

Taking anakinra can make it more difficult for your body to fight infection. Therefore, people with active infections should not take anakinra. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of anakinra with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop anakinra until you are healed and there is no sign of infection.

Anakinra has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. Anakinra should not be administered to pregnant women unless the benefits outweigh the potential risks. You should tell your doctor if you are pregnant, or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to anakinra should avoid the medication.

People with a history of cancer or emphysema should discuss the use of anakinra with their health-care provider.

Ideally, your vaccinations should be up to date prior to starting an anakinra. If you have already started therapy with anakinra, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking anakinra, you should speak with your health-care provider.

What are the side effects of anakinra?

Like all medications, taking anakinra carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from anakinra. When monitored
properly the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, anakinra can increase your risk of infections.

In rare cases, people may experience headaches, nausea and abdominal pain while taking anakinra. If these symptoms become severe please speak with your health-care provider.

Anakinra can cause a reaction (redness, pain and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

Also in rare circumstances, anakinra can affect your blood counts. Your prescriber will monitor for this.

**What helps to reduce side effects?**

Take anakinra as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To avoid injection reactions, rotate injection sites and avoid areas where the skin is tender, bruised, red and/or hard.

**Do I need any monitoring while taking anakinra?**

It is important to occasionally have your blood tested while taking anakinra. Your health-care provider will order periodic blood tests to check your blood count and follow the activity of your arthritis.
Certolizumab Pegol

Brand name: Cimzia®

Drug type: Biologic

What types of arthritis is certolizumab used for?

Certolizumab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis.

For RA and psoriatic arthritis, certolizumab may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

Certolizumab may be used as monotherapy for treatment of ankylosing spondylitis that has not responded to DMARD therapy.

How is certolizumab administered?

Certolizumab is delivered by subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin).

What is the typical dose and when do I take it?

The starting dose of certolizumab is 400 mg, given once immediately then again at weeks two and four. This is followed by a maintenance dose of 200 mg given once every two weeks. In some cases, a 400 mg dose may be prescribed once a month.

The medication comes in single use pre-filled syringes for administration.

How long will it take to work?

As with all of the biologics, you may not feel the effects of certolizumab right away. Some people begin to feel its effects fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for certolizumab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).
When should I not take certolizumab and call my doctor?

Taking certolizumab can make it more difficult for your body to fight infections. Therefore, people with active infections should not take certolizumab. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of certolizumab with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop certolizumab until you are healed and there is no sign of infection.

Certolizumab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother. Breastfeeding is not recommended for at least five months after the last certolizumab treatment.

People who have had a previous allergic reaction to certolizumab should avoid the medication.

Anyone with a history of cancer or nervous system problems, such as multiple sclerosis, should discuss the use of certolizumab with their health-care provider.

Certolizumab may make a condition called congestive heart failure worse. Tell your doctor if you have congestive heart failure.

Ideally, your vaccinations should be up to date prior to starting certolizumab. If you have already started therapy with certolizumab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking certolizumab, you should speak with your health-care provider.

What are the side effects of certolizumab?

As with all medications, taking certolizumab carries some risk of side effects, which must be balanced with the potential benefits. In general, the
risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from certolizumab. When monitored properly the vast majority of side effects are rare and most improve over time and are reversible.

Firstly, certolizumab can increase your risk of infections.

In rare cases, certolizumab can cause a reaction (redness, pain and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

Also in unusual circumstances, some people may experience headaches with certolizumab. If this becomes severe please speak with your health-care provider.

Some people have developed lupus-like symptoms that disappeared after the medication was stopped. If you have chest pains that do not go away, shortness of breath or a rash on your cheeks or arms that gets worse in the sun, call your doctor right away.

There have been rare cases of disorders that affect the nervous system of people taking certolizumab or other TNF-blockers. Signs that you could be experiencing a problem affecting your nervous system include: numbness or tingling, problems with your vision, weakness in your legs, and dizziness.

Certolizumab very rarely can cause a drop in blood counts.

**What helps to reduce side effects?**

Take certolizumab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To avoid injection reactions, injection sites should be rotated and avoid areas where the skin is tender, bruised, red and/or hard.

**Do I need any monitoring while taking certolizumab?**

Blood tests are not routinely required while you are taking certolizumab. Your health-care provider may order periodic blood tests to check your blood count and follow the activity of your arthritis.
Etanercept

Brand name: Enbrel®

Drug type: Biologic

What types of arthritis is etanercept used for?

Etanercept is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis.

For RA and psoriatic arthritis, etanercept may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

Etanercept may be used as monotherapy for treatment of ankylosing spondylitis that has not responded to DMARD therapy.

How is etanercept administered?

Etanercept is delivered by subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin).

What is the typical dose and when do I take it?

Etanercept is usually given either once or twice a week. The dose given is 50 mg per week or 25 mg twice a week. In some circumstances, etanercept may be given in 50 mg doses twice a week.

The medication comes in multiple use vials, single use pre-filled syringes and single use pre-filled SureClick autoinjectors for administration.

How long will it take to work?

As with all biologics, you may not feel the effects of the etanercept right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for etanercept to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).
**When should I not take etanercept and call my doctor?**

Etanercept can make it harder for you to fight infections. People with active infections should not take etanercept. If you have a fever, think you have an infection, or have been prescribed an antibiotic contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of etanercept with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop etanercept until you are healed and there is no sign of infection.

Etanercept has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to etanercept should avoid the medication.

Anyone with a history of cancer or nervous system problems (like multiple sclerosis) should discuss the use of etanercept with their health-care provider.

Etanercept may make a condition called congestive heart failure worse. Tell your doctor if you have congestive heart failure.

Ideally, your vaccinations should be up to date prior to starting etanercept. If you have already started therapy with etanercept, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking etanercept, you should speak with your health-care provider.

**What are the side effects of etanercept?**

Like all medications, taking etanercept carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of
joint damage and permanent disability is much greater than the risks of side effects from etanercept. When monitored properly the vast majority of side effects are rare and most improve over time and are reversible.

Firstly, etanercept can increase your risk of infections.

Etanercept can rarely cause a reaction (redness, pain, and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

Rarely some people experience headaches with etanercept. If this becomes severe please speak with your health-care provider.

Some people have developed lupus-like symptoms that disappeared after the medication was stopped. If you have chest pains that do not go away, shortness of breath or a rash on your cheeks or arms that gets worse in the sun, call your doctor right away.

There have been rare cases of disorders that affect the nervous system of people taking etanercept or other TNF-blockers. Signs that you could be experiencing a problem affecting your nervous system include: numbness or tingling, problems with your vision, weakness in your legs, and dizziness.

Etanercept very rarely can cause a drop in blood counts.

**What helps to reduce side effects?**

Take etanercept as prescribed and contact your health-care provider if you have any concerns while taking the medication.

To avoid injection site reactions injection sites should be rotated and avoid areas where the skin is tender, bruised, red and/or hard.

**Do I need any monitoring while taking etanercept?**

Blood tests are not routinely required while you are taking etanercept. Your health-care provider may order periodic blood tests to check your blood count and follow the activity of your arthritis.
Golimumab

Brand name: Simponi®
Drug type: Biologic

What types of arthritis is golimumab used for?

Golimumab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis.

For RA and psoriatic arthritis, golimumab may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

Golimumab may be used as monotherapy for treatment of ankylosing spondylitis that has not responded to DMARD therapy.

How is golimumab administered?

Golimumab is delivered by subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin). Golimumab may be also given by infusion to treat RA.

What is the typical dose and when do I take it?

When given by infusion the dose of golimumab is based on your weight. You will receive an initial infusion, then a second infusion four weeks later. Following this you will receive infusions every eight weeks. The medication comes in a single use vial for administration by infusion. Each infusion lasts about 30 minutes.

When given by s.c. injection the dose of golimumab is 50 mg given once every month. The medication comes in a as a single-use pre-filled syringe or single use autoinjector for subcutaneous administration.

Golimumab pre-filled syringes and auto-injectors cannot be used for infusions. Single-use vials for infusions cannot be used for s.c. injections.
How long will it take to work?

As with all of the biologics, you may not feel the effects of the golimumab right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for golimumab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).

When should I not take golimumab and call my doctor?

Golimumab can make it more difficult for your body to fight infections. Therefore, people with active infections should not take golimumab. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of golimumab with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop golimumab until you are healed and there is no sign of infection.

Golimumab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to golimumab should avoid the medication.

People with a history of cancer or nervous system problems, such as multiple sclerosis, should discuss the use of golimumab with their health-care provider.

Golimumab may make a condition called congestive heart failure worse. Tell your doctor if you have congestive heart failure.
Ideally, your vaccinations should be up to date prior to starting golimumab. If you have already started therapy with golimumab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking golimumab, you should speak with your health-care provider.

**What are the side effects of golimumab?**

Like all medications, taking golimumab carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from golimumab. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, golimumab can increase your risk of infections.

In rare cases, golimumab can cause an allergic reaction during the infusion (flushing, itching, changes in heart rate and blood pressure, etc.). A health-care professional will monitor for this reaction during the infusion.

For people taking the medication by injection, golimumab can in rare circumstances cause a reaction (redness, pain and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

In uncommon cases, some people experience headaches while taking golimumab. If this becomes severe please consult your health-care provider.

Some people have developed lupus-like symptoms that disappeared after the medication was ceased. If you have chest pains that do not go away, shortness of breath or a rash on your cheeks or arms that gets worse in the sun, call your doctor right away.

There have been rare cases of disorders that affect the nervous system of people taking golimumab or other TNF-blockers. Signs that you could be experiencing a problem affecting your nervous system include: numbness or tingling, problems with your vision, weakness in your legs and dizziness.

Golimumab very rarely can cause a drop in blood counts.
What helps to reduce side effects?

Take golimumab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

If you experience infusion reactions while taking golimumab, prior to your next infusion your prescriber may recommend a medication pre-treatment to help prevent the reaction. Your prescriber may also recommend a longer infusion time.

For people taking golimumab via injection, avoid injection site reactions by rotating injection sites and avoid areas where the skin is tender, bruised, red and/or hard.

Do I need any monitoring while taking golimumab?

Blood tests are not routinely required while you are taking golimumab. Your health-care provider may order periodic blood tests to check your blood count and follow the activity of your arthritis.
Infliximab

Brand name: Remicade®

Drug type: Biologic

What types of arthritis is infliximab used for?

Infliximab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA), psoriatic arthritis and ankylosing spondylitis.

When infliximab is used to treat RA, methotrexate is always used in combination. This helps to optimize your therapy with infliximab. Infliximab may be used as monotherapy to treat psoriatic arthritis and ankylosing spondylitis.

How is infliximab administered?

Infliximab is delivered by infusion.

What is the typical dose and when do I take it?

The dose of infliximab depends on your body weight. Infliximab is given by infusion initially, then again at week two and week six. Following this, an infusion is given every four to eight weeks depending on the condition you are being treated for and your response to treatment.

How long will it take to work?

As with all of the biologics, you may not feel the effects of the infliximab right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.

To provide symptom relief while you are waiting for infliximab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).
When should I not take infliximab and call my doctor?

Infliximab can make it more difficult for your body to fight infections. Therefore, people with active infections should not take infliximab. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of infliximab with their health-care provider.

Also contact your provider if you are having surgery as you may need to stop infliximab until you are healed and there is no sign of infection.

Infliximab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant, or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made with your health-care provider on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to infliximab should avoid the medication.

People with a history of cancer or nervous system problems, such as multiple sclerosis, should discuss the use of infliximab with their health-care provider before starting the medication.

Infliximab may make a condition called congestive heart failure worse. Tell your doctor if you have congestive heart failure.

Ideally, your vaccinations should be up to date prior to starting infliximab. If you have already started therapy with infliximab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking infliximab, you should speak with your health-care provider.

What are the side effects of infliximab?

Like all medications, taking infliximab carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much
greater than the risks of side effects from infliximab. When monitored properly the vast majority of side effects are rare and most improve over time and are reversible.

Firstly, infliximab can increase your risk of infections.

Infliximab can in rare cases cause an allergic reaction during the infusion (flushing, itching, changes in heart rate and blood pressure, etc.). A health-care professional will monitor for this reaction during the infusion.

In rare cases, people experience headaches, nausea, abdominal pain and diarrhea with infliximab. If this becomes severe please consult your health-care provider.

Some people have developed lupus-like symptoms that disappeared after the medication was stopped. If you have chest pains that do not go away, shortness of breath or a rash on your cheeks or arms that gets worse in the sun, call your doctor right away.

There have been rare cases of disorders that affect the nervous system of people taking infliximab or other TNF-blockers. Signs that you could be experiencing a problem affecting your nervous system include: numbness or tingling, problems with your vision, weakness in your legs, and dizziness.

Infliximab very rarely can cause a drop in drop in the number of certain types of blood cells or problems with the liver.

**What helps to reduce side effects?**

Take infliximab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

If you experience an infusion reaction while taking infliximab, prior to your next infusion your health-care provider may recommend a medication pre-treatment to prevent this. Your prescriber may also recommend a longer infusion time.

**Do I need any monitoring while taking infliximab?**

Your health-care provider may order periodic blood tests to check your blood count and liver function and to follow the activity of your arthritis.
**Rituximab**

Brand name: Rituxan®

Drug type: Biologic

**What types of arthritis is rituximab used for?**

Rituximab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA) and granulomatosis with polyangiitis (GPA, also known as Wegener’s Granulomatosis).

For RA, rituximab is used in combination with methotrexate (MTX). Rituximab is generally reserved for treatment of RA that has not responded to other biologic medications (e.g., tumor necrosis factor (TNF) blocking agents). Rituximab is used in combination with steroids to treat GPA.

**How is rituximab administered?**

Rituximab is given by infusion.

**What is the typical dose and when do I take it?**

Rituximab requires only two infusions, scheduled two weeks apart. The dose given is 1,000 mg with each infusion. Infusions are given with an intravenous steroid, such as methylprednisolone (Solumedrol®). Your health-care provider may also recommend taking acetaminophen and an antihistamine (e.g., diphenhydramine) before the infusion. These medications will help prevent infusion reactions.

Repeat infusions of rituximab can be given every six months based on treatment response and the activity of your arthritis.

Each infusion can take from four to six hours in length.

**How long will it take to work?**

As with all of the biologics, you may not feel the effects of the rituximab right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.
To provide symptom relief while you are waiting for rituximab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).

**When should I not take rituximab and call my doctor?**

Rituximab can make it more difficult for your body to fight infections. Therefore, people with active infections should not take rituximab. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of rituximab with their health-care provider.

Also contact your health-care provider if you are having surgery as you may need to stop rituximab until you are healed and there is no sign of infection.

Rituximab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Women of childbearing age should use effective birth control methods during and for up to 12 months after treatment with rituximab. Because of the potential for adverse reactions in nursing infants, a decision should be made on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

If you have ever had a rare infection of the brain called progressive multifocal leukoencephalopathy (PML) or if you have had a previous allergic reaction to rituximab you should not take the medication.

In rare cases, severe skin reactions have been reported in patients receiving rituximab. Get medical help right away if you have signs of redness, swelling, blistering or peeling skin (with or without fever); red or irritated eyes; or sores in your mouth, throat, nose, or eyes.

Rituximab has been associated with abnormal heart rhythms. Tell your doctor if you have any such cardiac issues.

All patients should have a blood test to check for hepatitis B before starting rituximab.
Ideally, your vaccinations should be up to date prior to starting rituximab. If you have already started therapy with rituximab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking rituximab, you should speak with your health-care provider.

**What are the side effects of rituximab?**

Like all medications, taking rituximab carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from rituximab. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, rituximab can increase your risk of infections.

Rituximab commonly causes an allergic reaction during the infusion (flushing, itching, changes in heart rate and blood pressure, etc.). A health-care professional will monitor for this reaction during the infusion.

In rare cases, some people experience headaches, nausea, abdominal pain and diarrhea with rituximab. If any of these symptoms become severe please consult your health-care provider.

Also in rare occurrences, rituximab can cause a drop in blood counts and/or cause problems with the kidneys, bowels, heart and lungs. Your health-care provider will monitor for these effects.

**What helps to reduce side effects?**

Take rituximab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

Your health-care provider will recommend taking medications prior to your infusion to help prevent infusion reactions.

**Do I need any monitoring while taking rituximab?**

Your health-care provider may order periodic blood tests to check your blood counts and to follow the activity of your arthritis.
**Tocilizumab**

Brand name: Actemra®

Drug type: Biologic

**What types of arthritis is tocilizumab used for?**

Tocilizumab is used to treat inflammatory types of arthritis, such as rheumatoid arthritis (RA).

For RA, tocilizumab may be used as monotherapy or in combination with DMARD therapy, such as methotrexate (MTX).

**How is tocilizumab administered?**

Tocilizumab is given by infusion once a month or by subcutaneous (s.c.) injection (meaning in the fatty layer of tissue just under the skin) once every one to two weeks.

**What is the typical dose and when do I take it?**

When given by infusion the dose of tocilizumab depends on your body weight. The starting dose is 4 mg/kg, which can be increased up to 8 mg/kg if an adequate response is not achieved. The medication comes in a single use vial for administration by infusion. Each infusion takes about 60 minutes.

When given by injection the dose of tocilizumab is 162 mg. If you weigh less than 100 kg you will require an injection every two weeks, followed by an increase to every week based on clinical response. If you weigh 100 kg or more you will require an injection every week. The medication comes in single use pre-filled syringes for administration by injection.

Tocilizumab pre-filled syringes cannot be used for infusions and the vial for infusions cannot be used for injection.

**How long will it take to work?**

As with all of the biologics, you may not feel the effects of the tocilizumab right away. Some people begin to feel the effects of the medication fairly quickly; however, it may take three to six months to feel its full effect. It is important to be patient and keep taking your medication.
To provide symptom relief while you are waiting for tocilizumab to take effect, your health-care provider may recommend taking a steroid, such as prednisone, or a non-steroidal anti-inflammatory drug (NSAID).

**When should I not take tocilizumab and call my doctor?**

Tocilizumab can make it more difficult for your body to fight infections. People with active infections should not take tocilizumab. If you have a fever, think you have an infection or have been prescribed an antibiotic, contact your health-care provider. People who have had frequent infections in the past or a history of tuberculosis should discuss the use of tocilizumab with their prescriber.

Also contact your health-care provider if you are having surgery as you may need to stop tocilizumab until you are healed and there is no sign of infection.

Tocilizumab has not been studied in pregnant women or nursing mothers so its effect(s) on pregnant women or nursing babies are unknown. You should tell your doctor if you are pregnant or are planning to become pregnant. Because of the potential for adverse reactions in nursing infants, a decision should be made on whether or not to discontinue nursing or the medication, taking into account the importance of the drug to the mother.

Anyone who has had a previous allergic reaction to tocilizumab should avoid the medication.

Anyone with a history of cancer or nervous system problems, such as multiple sclerosis, should discuss the use of tocilizumab with their health-care provider.

Ideally, your vaccinations should be up to date prior to starting tocilizumab. If you have already started therapy with tocilizumab, your health-care provider will likely recommend most inactive vaccines (e.g., influenza, pneumococcal). Live vaccines are not recommended due to risk of causing infection. Before receiving any vaccinations while taking tocilizumab, you should speak with your health-care provider.

**What are the side effects of tocilizumab?**

Like all medications, taking tocilizumab carries some risk of side effects, which must be balanced with the potential benefits. In general, the risk of
Joint damage and permanent disability (resulting from arthritis) is much greater than the risks of side effects from tocilizumab. When monitored properly the vast majority of side effects are rare, most improve over time and are reversible.

Firstly, tocilizumab can increase your risk of infections.

In rare cases, tocilizumab can cause an allergic reaction during the infusion (flushing, itching, changes in heart rate and blood pressure, etc.). A health-care provider will monitor for this reaction during the infusion.

For people taking the medication by injection, tocilizumab can rarely cause a reaction (redness, pain, and itching) at the injection site. Talk to your health-care provider if these symptoms become severe.

Again in uncommon circumstances, people may experience upper respiratory tract infections (common cold, sinus infections) headaches and an increase in blood pressure with tocilizumab. Other rare side effects include cold sores, blisters and shingles. If any of these symptoms become severe please speak with your health-care provider. Some people have also developed skin infections (sometimes with fever and chills). If you believe you have an infection please contact your health-care provider.

Very rarely tocilizumab has been associated with stomach perforations (holes in the lining of the stomach), usually as a complication of diverticulitis (infection of the large intestine). This requires immediate medical attention. If you develop fever and severe stomach pain that does not go away, seek medical attention.

There have been rare cases of disorders that affect the nervous system of people taking tocilizumab. Signs that you could be experiencing a problem affecting your nervous system include numbness or tingling, problems with your vision, weakness in your legs and dizziness. If you experience these symptoms, seek medical attention.

Tocilizumab can rarely affect your blood counts, liver function and cholesterol levels. Your health-care provider will use blood tests to monitor for these changes.
What helps to reduce side effects?

Take your tocilizumab as prescribed and contact your health-care provider if you have any concerns while taking the medication.

If you experience an infusion reaction while taking tocilizumab, prior to your next infusion your health-care provider may recommend a medication pre-treatment to help prevent the reaction. Your health-care provider may also recommend a longer infusion time.

To avoid injection reactions, injection sites should be rotated and avoid areas where the skin is tender, bruised, red and/or hard.

Do I need any monitoring while taking tocilizumab?

Your will need to have your blood tested regularly while taking tocilizumab (your doctor will tell you how often). This is important to make sure tocilizumab isn’t affecting your liver, blood counts or cholesterol levels.
Drug Identification Numbers

Below you’ll find drug identification numbers (DIN) for a number of medications. These numbers may be helpful for completing insurance claims.

**Note:** Viscosupplementation* agents, which do not require a prescription, are classified as a natural health product and are assigned a “Natural Product Number” (NPN) by Health Canada.

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About The Arthritis Society

The Arthritis Society has been setting lives in motion for over 65 years. Dedicated to a vision of living well while creating a future without arthritis, The Society is Canada’s principal health charity providing education, programs and support to the over 4.6 million Canadians living with arthritis. Since its founding in 1948, The Society has been the largest non-government funder of arthritis research in Canada, investing nearly $190 million in projects that have led to breakthroughs in the diagnosis, treatment and care of people with arthritis.
How We Can Help
The Arthritis Society offers free education, programs and support to Canadians living with arthritis. Our services include Chronic Pain Management Workshops (CPMW), online education programs, such as Joint Matters at Work and Overcome Fatigue, and the Erase the Pain campaign. For more information, call 1.800.321.1433, visit arthritis.ca or thepain.ca.

We publish several information booklets to help people living with arthritis understand more about their condition and treatment options as well as tips on how to self-manage the disease. For a list of arthritis conditions and lifestyle related booklets, including a digital copy of this information, visit arthritis.ca/publications.

Become a Volunteer
Help others through meaningful work. By volunteering with The Arthritis Society, you can give back to your community, learn new skills, gain work experience and meet new friends. Visit arthritis.ca or call 1.800.321.1433.

Donate Online
Donations to The Arthritis Society support vital research and services that help improve the lives of people with arthritis. There are many ways to give, visit arthritis.ca/donate to make a contribution and learn more.