Inflammatory Arthritis Education Series

Medications to Treat Inflammatory Arthritis

This program has been reviewed and endorsed by

CAPA

Canadian Arthritis Patient Alliance

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Objectives

By the end of the session, you will:

- Understand the goals of treatment in inflammatory arthritis
- Understand the role of medications in treating inflammatory arthritis
  - Identify which medications control the inflammatory process and which medications are used to help manage pain
- Understand the roles of other parts of the treatment plan

Goals of arthritis management

- Educate you and your family
- Prevent/stop damage to joints and other tissues
- Control inflammation
- Relieve pain
- Improve fatigue (feeling of extreme tiredness)
- Improve mobility and level of fitness
- Protect your joints
- Improve or correct deformities
- Provide emotional and social support

Your role in treatment

- Taking an active role in your treatment will help you understand your care and get the best results from your treatment:
  - Successful management of arthritis requires a team approach to care
  - You are an active part of that team
- The more you understand about your treatment, the more likely you are to benefit

When considering medications

- Understand how to take your medications
- Take medications exactly as prescribed
- Do not stop medications without first consulting your doctor or pharmacist as doing so may be dangerous
- Full benefits of some medications, such as increased movement and energy and decreased swelling and pain, may take 6 to 12 weeks to occur
- Don’t hesitate to ask questions

Treatment options for inflammatory arthritis

- Medications
- Protecting your joints (aids, splints, orthotics)
- Managing fatigue (daily activities, sleep)
- Surgery (if required)
- Lifestyle choices (healthy eating, weight management)
- Managing pain & stress (relaxation techniques)
- Exercise & physiotherapy (ice or heat & other therapies)
- Education (learning about potential treatment options)

Understanding medications

- Correct medications can only be prescribed following a diagnosis from your treating physician
- Specific doses are prescribed to meet your needs
- Tell your doctor about any allergies or other medications and/or supplements you are taking for other chronic conditions
  - Arthritis medications can interact with other drugs
- Tell your doctor if you are pregnant, trying to become pregnant, or breastfeeding
  - Medications may have to be changed or stopped for a short while

Questions to ask before starting a medication

- Why should I take this?
- How does it work?
- What are the benefits?
- How long does it take for benefits to occur?
- How should I take it?
- What are the possible side effects or risks?
- Are there any possible interactions with current medications, supplements or health conditions?
- Who should I contact if I develop a side effect or problem?

Medication considerations

Medication treatment is divided into two categories:

Medication for symptom control:

- Painkillers, anti-inflammatories
- Begin to work in days to weeks
- Make you feel better, but do not stop arthritis from progressing

Medication for disease control:

- Prevent/stop joint damage and keep joints healthy
- May take weeks to months to work at controlling inflammation (swelling & pain)

Medications to treat inflammatory arthritis

Medications to control pain:

- NSAIDs (non-steroidal anti-inflammatory drugs)
- Acetaminophen
- Narcotics

Medications to control inflammation:

- NSAIDs
- Corticosteroids - cortisone
- DMARDs (disease modifying anti-rheumatic drugs)
- Biologics & 'Targeted' medications

Non-steroidal anti-inflammatory drugs (NSAIDs)

NSAIDs

- Over-the-counter (OTC) or by prescription
- Useful to relieve symptoms of pain and swelling
- To control inflammation, must be taken on a regular basis
  - However, will not prevent arthritis progression or joint damage
- Take only one type of NSAID at a time (including OTC NSAIDs)
- Work with your doctor to determine which NSAID is best for you
- Take with food to reduce stomach upset

NSAIDs

Non-Prescription NSAIDS:	Prescription NSAIDS (common examples):
• Acetylsalicylic acid (ASA, Aspirin, Entrophen) • Ibuprofen (Motrin, Advil) • Naproxen (Aleve)	• Naproxen (Naprosyn) • Indomethacin (Indocid) • Diclofenac (Voltaren) • Diclofenac and misoprostol (Arthrotec) • Coxibs – see next slide

NSAIDs: Cox-2 inhibitors

- Block Cox-2, an enzyme that promotes joint inflammation, but not Cox-1, an enzyme that helps protect the mucous lining of the stomach
- Safer on the stomach than traditional NSAIDs (which block both Cox-1 & -2)
- Cox-2 inhibitors may be prescribed if traditional NSAIDs are not tolerated
- Taking ASA (Aspirin) at the same time will decrease the stomach protection effect of the Cox-2 inhibitor
- Should not use OTC NSAIDs such as Aleve or Advil with prescribed NSAIDs, including Cox-2 inhibitors

NSAIDs: Take as directed

- Number of tablets and number of times they are taken per day varies by type of medication
- Take NSAIDs exactly as prescribed, however feel free to discuss dose adjustments with your physician
- More is not better, and less is not better
  - Adjusting your own dose will not allow your doctor to assess how the medication is working
- Side effects: stomach irritation, bleeding, nausea, constipation, increased blood pressure
- Monitoring required: blood tests, blood pressure

NSAIDs: Possible side effects

Symptom	Frequency	Call doctor
Nausea/heartburn/ stomach pain/cramps	Common	If severe or persistent (may represent early stomach irritation or ulcer)
Constipation	Common	If severe or persistent
Vomiting/diarrhea	Rare	If severe or persistent
Skin rash	Rare	Yes
Ringing in ears	Rare	Yes
Dizziness/light headedness	Rare	Yes
Increase in blood pressure	Rare	Monitored periodically by your doctor
Black or bloody stools	Rare	Yes (may represent stomach ulcer)
Wheezing/shortness of breath	Rare	Yes
Fluid retention	Rare	Yes
Chest pain or pressure	Rare	Yes

*Note: common is 20-50% of patients and rare is less than 1% of patients

People who should be *careful* taking NSAIDs

- Anyone who:
  - is over the age of 65 years
  - has had a stomach ulcer
  - is taking blood thinners (warfarin or newer agents)
  - has kidney problems
  - is at a very high risk of heart attack
  - has more than 3 medical conditions (also known as ‘co-morbidities’)

Always inform your doctor if your medical history changes

Acetaminophen

- Examples: Tylenol, Panadol, Exdol (present in more than 200 OTC preparations)
- Reduces pain and fever, but not inflammation
- Can be safely combined with prescription NSAIDs

Medication	Dose	Instructions
Tylenol Regular Strength	325 mg	1 to 3 tablets every 4 to 6 hours as needed
Tylenol Extra Strength	500 mg	1 to 2 tablets every 4 to 6 hours as needed
Tylenol Arthritis Pain	650 mg (extended release)	1 to 2 tablets every 8 hours as needed

Acetaminophen

Maximum dose:

No more than 1,000 mg* should be taken at one time with a maximum of 4,000 mg in a day

Overdosing with acetaminophen can lead to liver damage

Lower dosages are recommended for:

Elderly people

People who take blood thinners

People who drink more than 2 alcohol drinks a day

**Exception: Tylenol Arthritis Pain (AP) extended release dosage is 650 mg x 2 caplets or tablets*

Narcotic (Opioid) medications for pain

Narcotic medications for pain

- A type of pain medication sometimes prescribed by your doctor when NSAIDs are not strong enough to relieve pain
- Some examples include:
  - Codeine (Tylenol 1, 2, 3, and Emtec)
  - Morphine (MS-contin)
  - Hydromorphone (Dilaudid)
  - Merperidine (Demerol)
  - Fentanyl (Duragesic patches)
  - Tramadol: Tramacet (Tramadol 37.5 mg and Acetaminophen 325 mg)

Acetaminophen with codeine

Medication	Prescription Required?	Ingredients
Tylenol 1	✗	Acetaminophen 300 mg, caffeine 15 mg and codeine 8 mg
Tylenol 2	✓	Acetaminophen 300 mg, caffeine 15 mg and codeine 15 mg
Tylenol 3	✓	Acetaminophen 300 mg, caffeine 15 mg and codeine 30 mg
Emtec	✓	Acetaminophen 300 mg and codeine 30 mg

**Note: For all of these medications, instructions are to take 1 to 2 tablets every 4 to 6 hours as prescribed by your doctor to a maximum of 12 tablets in 24 hours*

Acetaminophen with codeine

Note:

- Tylenol with codeine may also be taken with Tylenol Regular or Tylenol Extra Strength
- Codeine affects the central nervous system, reducing pain sensitivity and increasing drowsiness
- Avoid drinking alcohol when taking acetaminophen or codeine
- When using acetaminophen, you must consider all products that contain acetaminophen do not exceed the total maximum dose of 4000 mg/day

Acetaminophen with codeine

Possible side effects of codeine:

- Constipation
- Nausea
- Dizziness
- Drowsiness (avoid driving or combining with other medications that increase sedation)

Corticosteroids as anti-inflammatory medication

Corticosteroids

- Also called cortisone or steroids
- This medication decreases inflammation
- Fast-acting (within hours for intra-articular/intramuscular injection to 1-3 days when taken orally)
- Can be taken as:
  - Pill (prednisone)
  - Injection into muscle
  - Injection into inflamed joints
- May be used initially until disease-modifying anti-rheumatic drugs (DMARDs) work, or during periods of flares and sometimes at low doses over long-term if needed

Corticosteroids: Possible side effects of prolonged use

- Increased appetite
- Insomnia
- Mood changes
- In addition, long-term use can cause:
  - Thinning of the bones (osteoporosis)
  - Cataracts
  - Fluid retention, weight gain, “moon face”
  - Increased blood pressure, heart disease
  - Increased blood sugars, risk of diabetes
  - Increased risk of infection, and poor wound healing

Corticosteroids: Considerations

- Take with food
- If taking more than 7.5 mg of prednisone daily for more than 3 months, will require therapy to prevent osteoporosis
  - Calcium, vitamin D and bone-building medication
- Decrease gradually; never stop abruptly if you have been taking corticosteroids for more than 3 weeks (consider Medic Alert bracelet or similar – speak with your pharmacist)
- Rest joint for 24 hours after a joint injection; may do range-of-motion exercises
- Increases risk of infection and mask infection

Disease-modifying anti-rheumatic drugs (DMARDs)

DMARDs

- Slow down or stop inflammation to prevent joint damage
  - By reducing inflammation there is less swelling, heat, pain
  - Modify the immune system's response
- Use early after diagnosis to alter disease progression and to help minimize joint damage
- One or more DMARDs may be required
- Effects usually seen in 1 to 4 months
- Blood tests may be done regularly to monitor possible effects on liver, kidneys or blood cell production

DMARDs*

- Methotrexate (Rheumatrex, Metoject)
- Sulfasalazine (Salazopyrin)
- Hydroxychloroquine (Plaquenil)
- Azathioprine (Imuran)
- Leflunomide (Arava)
- Often 2 or more of these medications are taken together to control inflammation from your arthritis

** All DMARDS are taken by mouth/oral, except methotrexate which may be taken by mouth/oral or subcutaneous injection*

DMARDs: Possible side effects

- In general, the risk of joint damage and permanent disability is ***much*** greater than the risk of side effects of medications to control inflammatory arthritis
- The majority of side effects are reversible:
  - By lowering the dose, or
  - By stopping the medication and switching to another one
- It is important to determine whether the issue is the medication or an arthritis disease symptom (for example, dry eyes/mouth, rash), or another illness, such as a viral infection

DMARDs: Possible side effects

- Side effects vary depend on the DMARD used
- Common DMARD side effects include:
  - Flu-like symptoms (fatigue, headache, dizziness)
  - Stomach upset/pain, nausea
  - Diarrhea
  - Mouth sores
  - Hair loss
  - Dry eyes or mouth
  - Sun sensitivity
  - Increased risk of upper respiratory infections
- If you are concerned about any side effects you are experiencing, contact your doctor to discuss them.

*Note: common is 20-50% of patients and rare is less than 1% of patients

Biologic response modifiers (Biologics and Biosimilars)

Biologics

Drugs created using other living organisms or cells

Modify the immune system to control the inflammatory process, benefit seen within 1 to 6 months

Used in combination with DMARDs

Used after 2 or more DMARDs have been tried and did not control the inflammation

Are taken by subcutaneous injection (SC) or intravenous (IV) infusion

Caution with any previous tuberculosis exposure, cancer or chronic infections (e.g. HIV)

Expensive because of how they are made (cost is in the tens of thousands of dollars/year)

Biologics: Mechanism of action

- Mechanism of action is a term that describes the part of the immune system that the drug targets
- This can be thought of as ‘how the drug works’
- Different biologics have different mechanisms of action:
  - TNF inhibitors target a molecule called TNF
  - T cell inhibitors target T cells
  - B cell inhibitors target B cells
  - IL-6 inhibitors target a molecule called IL-6.

Biosimilars

- A biosimilar is a biologic drug that is highly similar to a biologic drug that was already authorized for sale
- Has demonstrated no clinically meaningful differences in safety or how it works compared to the original biologic, as determined by Health Canada

Biologics: TNF inhibitors

These drugs all target TNF alpha in the immune system.

Medication	Subcutaneous (SC) or Intravenous (IV)	Injection or Infusion Frequency
Adalimumab (Humira)	SC	Every 2 weeks
Certolizumab (Cimzia)	SC	3 injections in the first month, then every 2 or 4 weeks
Etanercept (Enbrel)	SC	Once or twice a week
Golimumab (Simponi)	SC and IV	SC: once a month, IV: once a month and then moves to every 2 months
Infliximab (Remicade, Inflectra)	IV	Infusion done initially, week 2 and 6, then every 6 to 8 weeks

*Injection into body fat, which could be thigh or stomach

Other biologics

Medication	Subcutaneous (SC) or Intravenous (IV)	Mechanism of Action	Injection or Infusion Frequency
Abatacept (Orencia)	SC and IV	Affects the T cells in your immune system	SC: weekly, IV: 30 minute infusion: 3 in the first 4 weeks, then every 4 weeks
Rituximab (Rituxan)	IV	Affects the B cells in your immune system	2 infusions, 2 weeks apart, once or twice/year
Tocilizumab (Actemra)	SC and IV	Affects IL-6 cells in your immune system	SC: every 1 to 2 weeks, IV: 1 hour infusion every 4 weeks

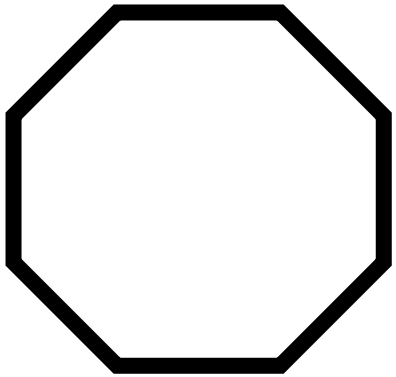
Biologics: Possible side effects

Common biologic side effects include:	
	Increased risk of infection
	Colds or sinus infections
	Injection site reactions
	Infusion reactions
	Headaches/dizziness
	Nausea or diarrhea
	Reactivation of infections like hepatitis or tuberculosis or risk of skin cancer

**If you are concerned about any side effects you are experiencing, contact your doctor to discuss them.*

Biologics: When you *may* need to stop taking them

- You will need to talk to your doctor about possibly 'holding' your biologic in some instances:
  - When you are thinking about becoming pregnant
  - When you are scheduled for surgery
  - If you develop a major infection
  - If you have a major open wound
- Before you stop taking your biologic, contact your doctor to discuss these situations or other concerns you may have.



‘Targeted Molecules’ - JAK Inhibitors

- These target the JAK pathways in the body which affect inflammation
- Must be screened for tuberculosis before starting these
- Must monitor for infections & herpes zoster – consider vaccination for Zoster
- Caution required for those with previous history, or risk of, developing blood clots

Currently approved JAK Inhibitors for RA

Medication	Dose	Instructions
Tofacitinib (Xeljanz)	5 mg or 11mg	5 mg twice per day; 11 mg per day
Baricitinib (Olumiant)	2 mg	2 mg per day
Upadacitinib (Rinvoq)	15 mg	15 mg /day

What's new in treatments for PSA?

Medication	Target	Biologic or small molecule?	Dose and Instructions	Potential side effects
Apremilast (Otezla)	Phosphodiesterase-4 enzyme	Small molecule	30 mg tablets twice a day	Nausea and diarrhea initially, weight loss and possible risk of increased depression
Ustekinumab (Stelera)	IL-12 & IL-23	Biologic (subcutaneous)	Subcutaneous injection If weight is less than or equal to 100 mg, patients take 45 mg If weight is greater than 100 mg, patients take 90 mg Taken at weeks 0, 4, and then every 12 weeks	Similar to other biologics

Key messages

- Early treatment with DMARDs ensures better control of your inflammatory arthritis and less damage to joints and other tissues
- Take your medication as prescribed by your doctor to achieve the best results
- Inform your doctor of any side effects that you develop as soon as possible
- Blood tests are required to monitor both 'disease activity' and potential adverse effects of medications used to treat your arthritis

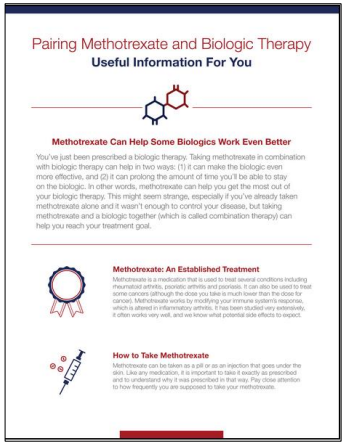
Resources

Arthritis Consumer Experts	www.jointhealth.org
The Arthritis Foundation	www.arthritis.org
The Arthritis Society	www.arthritis.ca
Canadian Arthritis Patient Alliance	www.arthritispatient.ca
Canadian Psoriasis Network	www.cpn-rcp.com
Canadian Spondylitis Association	www.spondylitis.ca
Rheuminfo	www.rheuminfo.com
Canadian Medical Association	www.cma.ca
Canadian Nurses Association	www.cna-nurses.ca/cna
Canadian Association of Occupational Therapists	www.caot.ca
Canadian Physiotherapy Association	www.thesehands.ca
Dietitians of Canada	www.dietitians.ca

Resources

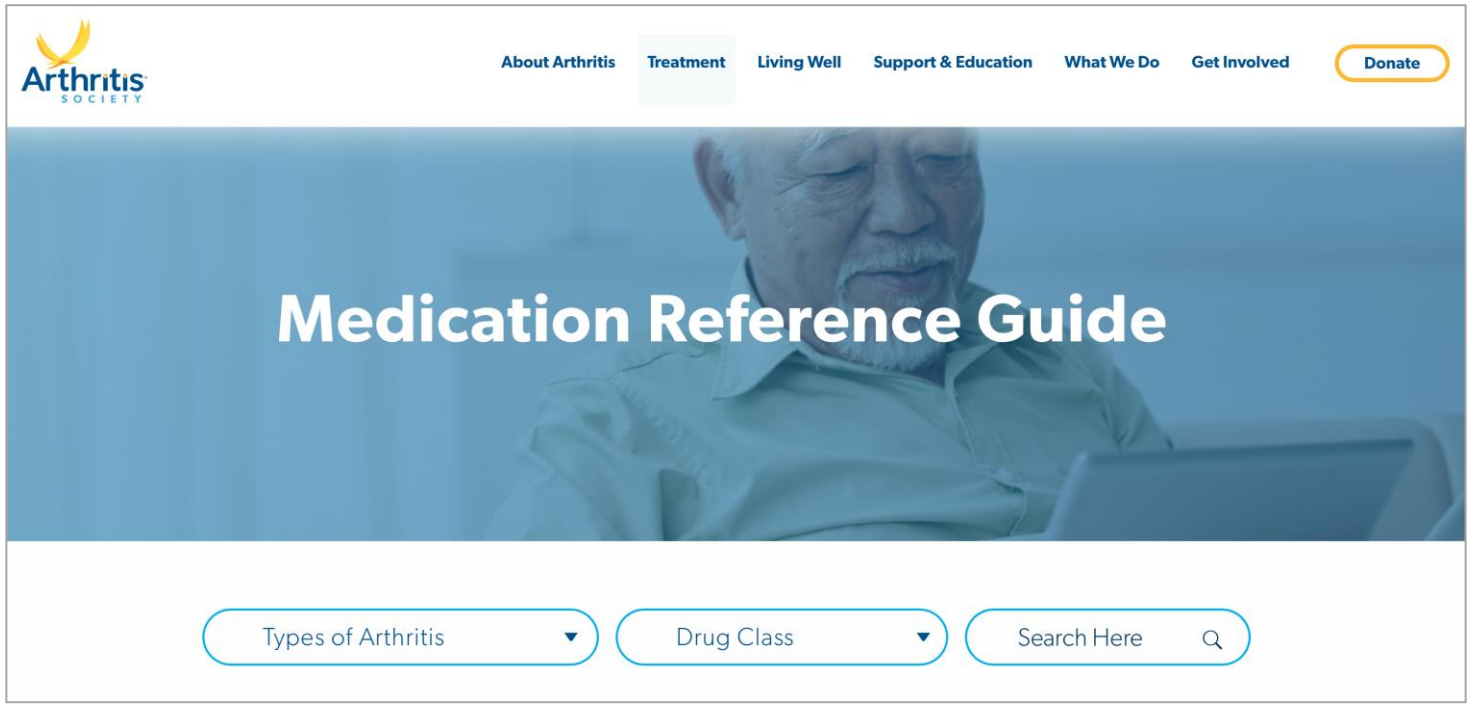
- Tips and Tricks when Taking Methotrexate – a resource that has been created by patients for other patients and reviewed by medical experts - http://arthritispatient.ca/tips-and-tricks-when-taking-methotrexate/
- Pairing Methotrexate and Biologic Therapy – a resource to help you understand why sometimes methotrexate should still be taken when you are on a biologic - http://arthritispatient.ca/methotrexate-and-biologics/


Methotrexate Tips & Tricks
For Patients by Patients
Methotrexate (also called MTX) is a proven medication
MTX works slowly
MTX is well-studied
Tips & Tricks
IMPORTANT: When thinking about adjusting your medications, ensure you talk to your doctor.


Pairing Methotrexate and Biologic Therapy
Useful Information For You
Methotrexate Can Help Some Biologics Work Even Better
Methotrexate: An Established Treatment
How to Take Methotrexate

Resources

- *Medications Reference Guide,* The Arthritis Society - https://arthritis.ca/treatment/medication/medication-reference-guide



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