MEDICATION

MEDICATION OPTIONS

The table below outlines all of the current common medication options for the treatment of IBD in adulthood. Similar medications to treat IBD are used in adult care and pediatric care, however there are some exceptions.

SUMMARY TABLE

Medication	Purpose/Action	Availability in Canada	Notes
Antibiotics	**Antibiotics are used in the treatment of IBD for infections that can occur with fistulas, abscesses, pouchitis, infections of the intestine.**		
Ciprofloxacin	This medication is used to treat certain infections of the intestine; it is also often used in combination with metronidazole to treat fistulas, abscesses or pouchitis.	Rx required	
Metronidazole/Flagyl®	This medication is sometimes used alone to treat a bowel infection called *Clostridium difficile*; it is often used in combination with ciprofloxacin to treat fistulas, abscesses or pouchitis.	Rx required	Avoid consuming alcohol while on metronidazole.
Amoxicillin/ Clavulanate (Clavulin)	This medication is occasionally used in place of the medications ciprofloxacin and metronidazole to treat fistulas or abscesses.	Rx required	This medication contains penicillin; avoid using this medication if you have a penicillin allergy.
Vancomycin	Oral vancomycin is used to treat a bowel infection	Rx required; due to the cost – you may	This medication is

Medication	Purpose/Action	Availability in Canada	Notes
	called *Clostridium difficile.*	require a *special authorization form* to get the cost covered by insurance.	expensive.
5-Aminosalicylates (5-ASA; mesalamine)	**5-ASA medications are used primarily to treat mild-moderately severe ulcerative colitis (UC). They work topically to reduce inflammation in the lining of the intestine.**		**These medications are given both orally (by mouth) and/or rectally (either suppositories or enemas).**
Asacol®		Rx required; available as 400mg & 800mg tablets	Oral only
Mesasal		Rx required; available as 500mg tablets	Oral only
Mezavant®		Rx required; available as 1200mg (1.2g) tablets	Oral only
Pentasa®		Rx required; available as 500mg and 1g capsules	Oral, suppository, and enema forms available; if you have swallowing difficulty, capsules can be opened and the contents sprinkled out – you need to consume right away.
Salofalk®		Rx required; available as 500mg tablets	Oral, suppository, and enema forms available.
Sulfasalazine/Salzapyrine®	This medications contains both mesalamine and sulpha; it is used for both the treatment of IBD and rheumatoid arthritis.	Rx required; available as 500mg tablets	Oral only, need to take with folic acid supplementation.
Corticosteroids	**Corticosteroids are powerful anti-inflammatory medications that are used to induce remission for IBD. They suppress the overall immune system through many mechanisms.**		**Corticosteroids have many side effects – both short-term and long-term, therefore corticosteroid use should be limited. Since the adrenal glands in your body also make**

Medication	Purpose/Action	Availability in Canada	Notes
			corticosteroids, it is important not to abruptly stop these medications.
Prednisone	Prednisone is used to induce remission in IBD. Typically it is prescribed as a taper, where you gradually reduce the dose over many weeks.	Rx required	Standard taper for IBD: 40mg daily x 1-2 weeks, taper by 5mg/week until 20mg daily, then taper by 2.5mg/week. *Call your doctor if your symptoms return while you are tapering your dose.*
Budesonide/Entocort®	Entocort® is a corticosteroid that is designed to be released in the distal ileum and is quickly metabolized – side effects are similar to prednisone but may be less severe.	Rx required, available as 3mg capsules	
Methylprednisone/ Solumedrol ®	Methylprednisone is an intravenous (IV) form of corticosteroid that is used to induce remission.	Usually administered in a hospital setting	IV medication
Hydrocortisone/ Cortenema®, Cortifoam®	These are steroid enemas that are used to induce remission in patients who have IBD affecting the distal part of their colon – called the rectum.	Rx required	Cortenema® is a liquid suspension. Cortifoam® is is a steroid foam.
Immunosuppressants	**Immunosuppressants are used to suppress your immune system - to stop it from attacking your gastrointestinal tract. Typically these medications are used to maintain remission alone or in combination with biologic medications.**		
Azathioprine/ Imuran®	Azathioprine is used in patients with UC, who respond to corticosteroids		Requires regular blood test monitoring for potential adverse

Medication	Purpose/Action	Availability in Canada	Notes
	but do not remain in remission on 5-ASA medications. Azathioprine is used in Crohn's disease to maintain remission. It takes several months for this medication to work, so it is not effective in inducing remission.		effects on your bone marrow or liver.
Mercaptopurine/ Purinthol®	Mercaptopurine is a medication similar to azathioprine and may be used instead if you do not tolerate azathioprine.	Rx required; due to the cost – you may require a *special authorization form* to get the cost covered by insurance.	Mercaptopurine is ~5x more expensive than azathioprine. Requires regular blood test monitoring for potential adverse effects on your bone marrow or liver.
Methotrexate	Methotrexate is an immune modulator and anti-inflammatory medication. It is used for the treatment of many other diseases, including rheumatoid arthritis.	Rx required. It is prescribed either as an injection or pills. It is taken weekly for the treatment of IBD.	Methotrexate is a teratogen – may cause fetal loss and/or congenital malformations. It is absolutely contraindicated in pregnancy. You need to take folic acid supplementation while you are on methotrexate.
Biologics	**Biologics are a class of medications that are extracted or made from biologic sources. The biologics that are used in IBD are monoclonal antibodies that are designed to target different aspects of the inflammatory pathway. The generic names of monoclonal antibodies end in "–mab".** **The types of monoclonal antibodies used in IBD can be categorized by the**		**The medications are expensive; therefore there are patient support programs (PSP) to help you coordinate insurance costs and arrange for infusions or injections.**

Medication	Purpose/Action	Availability in Canada	Notes
	target.		
Anti-TNF	***These are monoclonal antibodies that bind to TNFα. Elevated levels of TNFα have been found in the inflamed tissues in IBD. Anti-TNF medications are used to both induce and maintain remission in IBD.*** ***Anti-TNF medications are also used to treat other inflammatory diseases, including rheumatoid arthritis.***		
Infliximab/Remicade®	Infliximab is used to induce and maintain remission in both UC and Crohn's disease.	Rx required; approved for pediatric and adult use; due to the cost – you may require a *special authorization form* to get the cost covered by insurance.	IV medication; Note: Biosimilars to infliximab (Remsima® and Inflectra®) are approved in Canada for some rheumatologic conditions.
Adalimumab/Humira®	Adalimumab is used to both induce and maintain remission in both UC and Crohn's disease.	Rx required; due to the cost – you may require a *special authorization form* to get the cost covered by insurance	Subcutaneous (SC) injection – given as an injection.
Golimumab/Simponi®	Golimumab is used to both induce and maintain remission in UC only.	Rx required; due to the cost – you may require a *special authorization form* to get the cost covered by insurance.	Subcutaneous (SC) injection
Antibodies Against Cell Adhesion Molecules (CAMs)	***The inflammation in IBD is partly due to white blood cells (WBCs) leaving the blood stream and entering the tissue. There are CAMs that help direct WBCs into the tissue. A way to prevent the WBCs from entering the tissue and causing inflammation is to block the CAMs.***		
Vedolizumab/	Vedolizumab is a	Rx required; approved	IV infusion

Medication	Purpose/Action	Availability in Canada	Notes
Entyvio®	monoclonal antibody against the alpha-4/beta-7 subunit of integrin – this blocks the ability of T-cells (a type of WBC) to migrate into the tissues of the intestine.	in Canada for adult patients with UC.	
Natalizumab/Tysabri®	Natalizumab is a monoclonal antibody against the alpha-4 subunit of integrin– this blocks the ability of T-cells to traffic into tissues, including the intestine and brain.	Approved in Canada only for patients with certain types of multiple sclerosis (MS)	IV infusion; Natalizumab is associated with a rare, but serious neurological condition called progressive multifocal leukoencephalopathy (PML).
Other Antibodies	***The inflammation pathway is very complex and involves many cytokines. Medications designed to target specific cytokines are used in the treatment of inflammatory diseases, like IBD.***		
Ustekinumab/Stelara®	Ustekinumab is a monoclonal antibody that binds to the human cytokines interleukin IL-12 and IL-23.	It is approved for use in adult patients with plaque psoriasis. Use in Crohn's disease is off label.	Subcutaneous (SC) injection

Medications used in Pediatrics ONLY:

One form of treatment that can be used in pediatrics but not in adult care is enteral nutrition. Exclusive enteral nutrition is used in pediatrics to induce remission with newly diagnosed Crohn's disease. Enteral nutrition is an entirely liquid diet (eg: Nutren® or Ensure®) that is given either through a small nasogastric (NG) tube directly into the stomach or small intestine. This treatment is hard to sustain for a long period of time as no other food can be consumed during this therapy, so is usually prescribed for only 6-8 weeks. It is used in place of prednisone to induce remission.

Medications used in Adults ONLY:

New medications approved for the treatment of IBD are usually available for adult patients before they are approved for children. This is because in order for medications to be approved for use by Health Canada, there need to be clinical trials showing that they are beneficial – adult studies are usually done before pediatric studies.

MEDICATION SAFETY

Whenever you begin a new medication, make sure that you have reviewed its use and potential side effects with the doctor or nurse as well as the pharmacist dispensing it. It is important to equip yourself with the knowledge of why you are taking something as well as how it works and might affect you. It is also critical that your gastroenterologist, family physician and pharmacist know all of the medications (including herbal remedies or supplements) you are taking, so be sure to update this information with them at each appointment if there are any changes.

If you experience a side effect or worsening of symptoms, it is recommended that you speak with your family physician, IBD nurse, or gastroenterologist. If you have a fever while on corticosteroids, immunosuppressant and/or biologics, seek medical attention as this may be a sign of infection.

Safety of herbal remedies – You must let your physician know if you are taking any supplements or alternative medicines, as some of them may interact with your prescribed medications. Just because something is natural or herbal, this does not mean that it is necessarily safe.

If your medication makes you more sensitive to sun exposure (Ciprofloxacin, Sulfasalazine, Imuran, Methotrexate) wear sunscreen and talk to your physician about sun protective behaviours. Also note that you should not be drinking alcohol on certain medications listed above (Methotrexate, Metronidazole).

Everyone's disease is a little bit different and that is why there are a variety of medication options. Some will work better or worse for other people. Whatever medication you are on, it is important to follow the prescribed schedule and dosage. If there are serious health risks with your medication, your gastroenterologist will have you complete regular bloodwork and it will be monitored for any blood count changes.

If you are pregnant or considering becoming pregnant, discuss medication options with your gastroenterologist. You must not take methotrexate if you are pregnant or planning to get pregnant. See the section about pregnancy.

MEDICATION ADHERENCE

Taking your medications as prescribed helps you stay in remission and avoid flares. If you feel well, that doesn't mean you should stop your medications. IBD medications are not a "cure," they are a long-term treatment that protects your GI tract from attack by your immune system. If you take away the medications, it would be like turning off the water hose fighting a house fire or throwing away a shield in a sword fight – meaning that inflammation would increase, potentially causing damage (sometimes irreversible) to your intestines and you could experience a flare.

Unfortunately, even if you always take your medications it doesn't mean that you will always feel well and not have flares on your medications – but taking them does reduce this risk. It is a good idea to discuss your symptoms and any changes with your gastroenterologist so you can feel confident about taking your current medication or investigate other options together. Cutting back or increasing medications yourself is not a good idea. As adults, you need to make informed choices - you are the expert on your body, and you need to be the expert on your medications, too.

DURATION OF TREATMENT

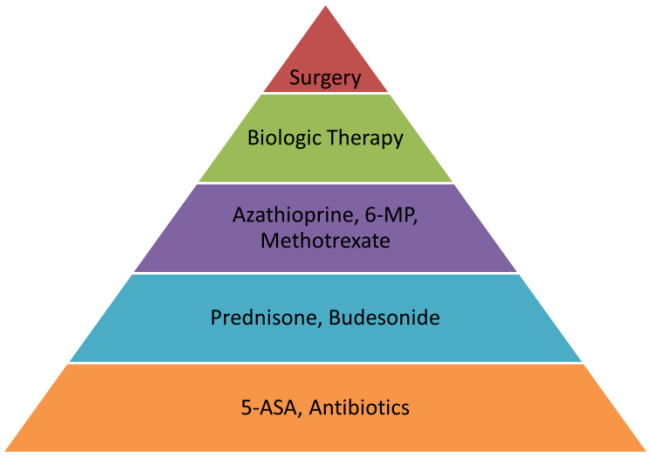
Because of the chronic (lifelong) nature of IBD, it is likely that you will need to be on some form of medication for the foreseeable future. Some individuals with ulcerative colitis may be considered "cured" if they have their colon surgically removed and use a colostomy bag. However, for the majority of individuals with IBD, you will hopefully be on a maintenance therapy that keeps the disease under control and allows you to do what you want in life.

Taking medication to prevent inflammation and flares helps to prevent damage to your intestine. If you are not on medications or experience repeated flares of the disease, this can increase your risk of cancer. Also, you may have to take corticosteroids frequently, which is bad for your health.

If you are not on medications or stop taking them, your disease can advance to the point where it cannot be controlled effectively with medication.

MEDICATION FAILURE

Traditionally the treatment of IBD has happened in a stepwise way, where if your disease gets worse, you are given a "stronger" medication. Usually the course goes from Aminosalicylates and antibiotics, to corticosteroids, immunosuppressants, and then biologics – this is what we call the IBD treatment pyramid.



Depending on the nature of your disease, gastroenterologists may start on the "top end of the pyramid" with biologics right away. The idea behind this is that some cases of IBD may be more aggressive, resistant to the "milder" medications and therefore be higher risk for causing damage to your GI tract - starting off with "stronger" medications might be necessary to prevent the damage in these cases. However, the disease does change over time and might stop responding to your medications. It is a good thing that there are a number of different therapies and combinations of medications that have been shown to work. Also, new biologics are being developed so if one doesn't work another one potentially could. Lastly, sometimes surgery is required to induce remission of your disease – to remove the affected parts of your bowel.

MANAGING PRESCRIPTIONS

Tips to remember to take your oral/rectal medications:

- use a pillbox and place your medications and/or vitamins into the days you are supposed to take them on
- set a reminder in your phone or calendar for the date and time you are planning to take the medications
- store your medications in a consistent and convenient spot, where it will be visible to you
- take it at the same time every day/week and if possible pair it in your mind with another activity, like breakfast, brushing your teeth, going to bed
- if you are going to be traveling, count out the doses you will need (plus maybe a few extras) and pack them into your toiletries

Tips to remember to get a refill of your oral/rectal medications on time:

- try to have an extra month of medication on hand, and when you are down to one month left call the pharmacy for a refill – depending on your insurance coverage you may not be able to get all of your medication at one time or too close to your last refill, so ask your pharmacist when your next refill will be covered
- if you are unable to get medication a month in advance, when you get a new prescription take a week's worth of doses and keep it in a separate bottle in a place you won't forget about – then when you run out of what you have on hand, that will be your cue to call the pharmacy and you will still have that buffer of a week's worth of doses that you put aside earlier
- know how many refills you have at the pharmacy and make sure to book an appointment with your gastroenterologist in time to get another prescription
- write on your calendar when your medication is going to be out and put in a reminder to call the pharmacy in advance of that
- set an alarm in your phone

Tips to remember your injection or infusion:

- any time you schedule an appointment, like for an infusion, put a note in your agenda/calendar/phone or whatever device you use to time-manage and keep yourself organized, that you will look at frequently
- your infusion clinic may offer a confirmation call before each appointment, but it is best not to have to rely on this last minute reminder as you will want to plan the rest of your schedule in advance, to make time for the appointment
- schedule your injections like an appointment with yourself – also put this in your agenda/calendar/phone
- coordinate your infusion or injection with some other event that you must do on a regular schedule – or you could even associate it with a reward, like treating yourself to something

Tips to remember to get a refill of your injection or infusion:

- when you put your infusion time into your phone or calendar, ensure that you add a trip to the pharmacy a day or two before to pick up the biologic
- when you mark off your injection dates/times, put a reminder in your calendar a week in advance of when you will run out of the current refill
- keep one of the boxes of syringes at the back of your refrigerator so that when you use up the current box you will know to call the pharmacy, but still have another box on hand
- know how many refills you have at the pharmacy and make sure to book an appointment with your gastroenterologist in time to get another prescription

How to fill prescriptions

Depending on the type of medication you're taking, you might have to call the pharmacy to get refills of your prescription. It's best to do this a few days before you will need the medication, so that there is time for the prescription to be filled and for you to pick it up.

Some people may choose to fill their prescriptions at one pharmacy that has their insurance information and all of their medications on file. This is not only convenient but safeguards against any conflict in medications, since the pharmacist can see everything you're taking.

If it is the first time you are filling the prescription, you will take the paper copy to your pharmacy. Make sure to bring your insurance coverage card so that the pharmacy can add it to your file, if it is not on there already.

Check the number of refills your doctor has authorized on the prescription and try to plan so you have enough medication to see you through to your next appointment. If you run out of refills, your pharmacist will have to fax a refill request to your gastroenterologist's office.

If you need a **refill** of a prescription that is already on file with your pharmacy, you can show up and ask for it to be filled, or call in the refill. Calling in advance may result in less waiting around at the pharmacy. When calling in, the automated system will ask you for the prescription number – you can find this on your last medication packaging.

If you have more questions about prescriptions, you could ask your gastroenterologist, nurse, pharmacist, parent/guardian or even your insurance company in the case that something you want is not covered.

BIOLOGICS IN ADULT CARE

There are presently 2 types of biologic medications (Remicade® & Humira®) available for pediatric patients. If these medications start before you move to Adult IBD Care it is important to continue to take these medications as scheduled.

If you live in Alberta these medications are paid for through a provincial pediatric program. This program will pay for Remicade® or Humira® until the day before your 18th birthday.

Both medications have patient support programs which is a free program to assist patients

Remicade®:

If you were receiving Remicade®, your parents would have been linked with a patient support coordinator with the Bio-Advance Program when you started this medication.

After transition from pediatrics to the Adult IBD gastroenterologist:

- You will no longer be infused through the pediatric infusion clinic
- You will also transition to a different Bio Advance Support Coordinator for Adult patients who reviews insurance coverage with patient, completes special authorization for drug coverage, complete orders for biologic therapy, helps you liaison with the infusion clinic
- The Adult IBD gastroenterologist will write your prescriptions for your medication
- You have a choice of whatever pharmacy you want to use but you will still be responsible for picking up your medication unless you coordinate delivery of this medication to the infusion clinic

Humira®:

If you were receiving Humira®, your parents would have been linked with a patient support coordinator with the Abbvie-care Program when you started this medication.

After transition from pediatrics to the Adult IBD gastroenterologist

- You will also transition to a different Abbvie-care Patient Support Coordinator for Adult patients who reviews insurance coverage with you, completes special authorization for medication coverage, completes orders for biologic therapy
- The Adult IBD gastroenterologist will write your prescriptions for Humira® once you are seen in clinic

MEDICATIONS DURING PREGNANCY

During pregnancy, you may have to make some changes to your medications. Methotrexate is usually stopped 6 months before trying to get pregnant (for males and females) and cannot be taken during as it causes birth defects. For other medications, your gastroenterologist may change your infusion schedule slightly but will likely aim to continue your maintenance therapy as flaring during pregnancy is not ideal. If you are thinking of becoming pregnant or you become pregnant, you should talk to your doctor right away about the medications you are on. If you are pregnant or trying to conceive and not on a folic acid/folate supplement, you should ask your family physician, gastroenterologist or pharmacist as soon as possible about taking one. Folic acid supports neural tube development in the fetus.

If you are interested in learning more about pregnancy in IBD, check out this website: http://pregnancy.ibdclinic.ca/

IBD RESEARCH

For ongoing studies in Canada, check out Crohn's and Colitis Canada: http://www.crohnsandcolitis.ca/site/c.dtJRL9NUJmL4H/b.9012563/k.A347/Clinical_Studies.htm or ask your gastroenterologist if there is something going on at your healthcare centre.

Learn more about research studies going on in Edmonton at: http://cegiir.med.ualberta.ca/news_ResearchStudies.html or if you're interested in clinical trials involving new medications, see http://www.clinicaltrials.ualberta.ca/volunteers.php or https://www.med.ualberta.ca/departments/medicine/divisions/gastroenterology/gildr/clinical-trials