



## Immunosuppressive/Immunomodulatory Agents NOT Including Oncological Agents

Generic Name	Trade Name	Indications <sup>‡</sup>	Class	Additional Considerations
<b>Abatacept</b>	Orencia <sup>®</sup>	JIA, PsA, RA, JRA	Selective T Cell Co-stimulation Modulator	For Covid-19 vaccine considerations see references 1-3 <sup>¶</sup>
<b>Adalimumab</b>	Humira <sup>®</sup>	JIA, RA, AS, CD, UC, PsA, PsO, uveitis	MAB TNF- $\alpha$ Inhibitor	For Covid-19 vaccine considerations see references 1-3, 6 <sup>¶</sup> Biosimilars <sup>‡</sup> : Abrilada <sup>®</sup> , Amgevita <sup>®</sup> , Hadlima <sup>®</sup> , Hulio <sup>®</sup> , Hyrimoz <sup>®</sup> , Idacio <sup>®</sup> , Simlandi <sup>™</sup> , Yuflyma <sup>™</sup>
<b>Alemtuzumab</b>	Lemtrada <sup>®</sup>	MS	MAB Anti-CD52	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Alirocumab</b>	Praluent <sup>®</sup>	Antilipemic agent	MAB PCSK9 Inhibitor	Immunosuppression risk is thought to be low, however, potential for increased infections exists with any MAB. <sup>12</sup>
<b>Anakinra</b>	Kineret <sup>®</sup>	RA	IL-1 RA IL-1 Inhibitor	For Covid-19 vaccine considerations see references 1-3 <sup>¶</sup>
<b>Apremilast</b>	Otezla <sup>®</sup>	PsA, PsO, Behcet's Disease	Phosphodiesterase-4 Enzyme Inhibitor	For Covid-19 vaccine considerations see reference 2 <sup>¶</sup>
<b>Azathioprine</b>	Imuran <sup>®</sup> , generic	RA, anti-rejection	Immunosuppressant DMARD	Low doses (3mg/kg/day or less) are generally not considered immunosuppressive <sup>14</sup>
<b>Baricitinib</b>	Olumiant <sup>®</sup>	RA	JAK Inhibitor	For Covid-19 vaccine considerations see references 1-3 <sup>¶</sup>
<b>Basiliximab</b>	Simulect <sup>®</sup>	Anti-rejection	MAB IL-2 Inhibitor	For Covid-19 vaccine considerations see reference 8 <sup>¶</sup>
<b>Belimumab</b>	Benlysta	SLE	MAB BLyS Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>

<b>Benralizumab</b>	Fasenra®	Asthma	MAB IL-5 Inhibitor	Specifically affects eosinophils therefore the concern is with helminthic infections. Little immunosuppression otherwise <sup>10</sup>
<b>Brodalumab</b>	Siliq™	PsO	MAB IL-17 Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Canakinumab<sup>†</sup></b>	Ilaris®	JIA	MAB IL-1 Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Certolizumab</b>	Cimzia®	AS, PsA, PsO, RA	MAB TNF-α Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Cladribine</b>	Mavenclad®	MS	Selective immunosuppressant	For Covid-19 vaccine considerations see reference 4,7,8 <sup>¶</sup>
<b>Corticosteroids* (Systemic)</b>				Generally speaking, doses <20mg/day of prednisone (or equivalent) or corticosteroids administered topically, inhaled, or intraarticular are not considered immunosuppressive. <sup>3,14</sup>
<b>Cyclophosphamide</b>	Procytox	Anti-rejection		For Covid-19 vaccine considerations see references 2,8 <sup>¶</sup>
<b>Cyclosporine</b>	Sandimmune® Neoral®	Anti-rejection, RA, PsO	Calcineurin inhibitor	For Covid-19 vaccine considerations see references 1-3,8 <sup>¶</sup>
<b>Denosumab</b>	Prolia®	Osteoporosis	MAB RANKL inhibitor	The degree of immunosuppression – if any- from denosumab has not been well established. It appears to be low, however, there is potential for increased infections with any MAB. <sup>11</sup> For Covid-19 vaccine considerations see references 5,11 <sup>¶</sup>
<b>Dimethyl fumarate</b>	Tecfidera™, generic	MS	Fumaric Acid Derivative	For Covid-19 vaccine considerations see reference 4,7,8 <sup>¶</sup>
<b>Dupilumab</b>	Dupixent®	Atopic dermatitis, Asthma	MAB IL-4/IL-13 Inhibitor	Avoid live vaccines (such as MMR and varicella) when you are using dupilumab. <sup>10</sup>
<b>Eculizumab</b>	Soliris®	↓ hemolysis PNH, aHUS, gMG, NMOSD	MAB Complement C5 Inhibitor	For Covid-19 vaccine considerations see reference 9 <sup>¶</sup>
<b>Etanercept</b>	Enbrel®	RA, JIA, PsA, PsO, AS	TNF-α Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup> Biosimilars <sup>‡</sup> : Brenzys®, Erelzi®
<b>Everolimus</b>	Afinitor®, generic		mTOR Kinase Inhibitor	Anti-rejection (off-label use) <sup>19</sup> For Covid-19 vaccine considerations see reference 8 <sup>¶</sup>

<b>Evolocumab</b>	Repatha®	Anti-lipemic agent	MAB PCSK9 Inhibitor	Immunosuppression risk is thought to be low, however, potential for increased infections exists with any MAB. <sup>12</sup>
<b>Fingolimod</b>	Gilenya®, generic	MS	Spingosine 1-Phosphate Receptor Modulator	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Glatiramer</b>	Copaxone®, Glatect™ <sup>Δ</sup>	MS		For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Golimumab</b>	Simponi®	AS, PsA, RA, UC	MAB TNF-α Inhibitor	For Covid-19 vaccine considerations see references 1-3 <sup>¶</sup>
<b>Guselkumab</b>	Tremfya®	PsO	MAB IL-23 Inhibitor	For Covid-19 vaccine considerations see references 1-3 <sup>¶</sup>
<b>Hydroxychloroquine</b>	Plaquenil®, generic	RA, Lupus erythematosus	DMARD	Generally, not considered immunosuppressive <sup>25</sup>
<b>Infliximab</b>	Remicade®	AS, CD, PsO, RA, UC	MAB TNF-α Inhibitor	For Covid-19 vaccine considerations see references 2,3,6 <sup>¶</sup> Biosimilars <sup>‡</sup> : Avsola™, Inflectra®, Remsima™ SC, Renflexa™
<b>Interferon</b>				
Beta-1A Beta-1B Peginterferon Beta-1A	Avonex®, Rebif® Betaseron® Plegridy™	MS		For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Intravenous Immunoglobulin (IVIG)</b>		Autoimmune diseases	Immune Globulin	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Ixekizumab</b>	Taltz®	PsA, PsO	MAB IL-17 Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Leflunomide</b>	Arava®, generic	RA	DMARD	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Mepolizumab</b>	Nucala	Asthma	MAB IL-5 Inhibitor	Specifically affects eosinophils therefore the concern is with helminthic infections. Little immunosuppression otherwise <sup>10</sup>
<b>6-Mercaptopurine</b>	Purinethol®, generic	Off-label use: CD, UC	Immunosuppressant DMARD	Low doses (≤1.5 mg/kg/day) generally not considered immunosuppressive. <sup>14</sup>
<b>Methotrexate</b>	generics	PsA, PsO, RA	DMARD	Low doses (≤0.4 mg/kg/week) generally not considered immunosuppressive <sup>14</sup>

<b>Mitoxantrone</b>	generic	MS	Topoisomerase II Inhibitor	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Mycophenolate</b>	Cellcept <sup>®</sup> , Myfortic <sup>®</sup> , generic	Anti-rejection	Antiproliferative	For Covid-19 vaccine considerations see references 2,8 <sup>¶</sup>
<b>Natalizumab</b>	Tysabri <sup>®</sup>	MS	MAB	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Ocrelizumab</b>	Ocrevus <sup>®</sup>	MS	MAB Anti-CD20	For Covid-19 vaccine considerations see references 2,4,7,8 <sup>¶</sup>
<b>Ofatumumab</b>	Kesimpta <sup>™</sup>	MS	MAB Anti-CD20	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Omalizumab</b>	Xolair <sup>®</sup>	Asthma, chronic urticaria	MAB Anti-IgE	Specifically affects eosinophils therefore the concern is with helminthic infections. Little immunosuppression otherwise <sup>10</sup>
<b>Ozanimod</b>	Zeposia <sup>®</sup>	MS	S1P Receptor Modulator	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Ponesimod</b>	Ponvory <sup>™</sup>	MS	S1P Receptor Modulator	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Prednisone/ prednisolone</b>	generics/ Pediapred <sup>®</sup>			Generally speaking, doses <20mg/day of prednisone (or equivalent) are not considered immunosuppressive. <sup>3,14</sup>
<b>Reslizumab</b>	Cinqair <sup>™</sup>	Asthma	MAB IL-5 Inhibitor	Specifically affects eosinophils therefore the concern is with helminthic infections. Little immunosuppression otherwise <sup>10</sup>
<b>Risankizumab</b>	Skyrizi <sup>®</sup>	PsO	MAB IL-23 Inhibitor	For Covid-19 vaccine considerations see reference 2 <sup>¶</sup>
<b>Rituximab</b>	Rituxan <sup>®</sup>	RA, GPA, MPA	MAB Anti-CD20	For Covid-19 vaccine considerations see references 2-4,8 <sup>¶</sup> Biosimilars <sup>‡</sup> : Riabni <sup>™</sup> , Riximyo <sup>®</sup> , Ruxience <sup>™</sup> , Truxima <sup>™</sup>
<b>Romozosumab</b>	Evenity <sup>™</sup>	Osteoporosis	MAB Sclerostin Inhibitor	The degree of immunosuppression – if any- from romozosumab has not been well established. It appears to be low, however, there is potential for increased infections with any MAB. <sup>11</sup> For Covid-19 vaccine considerations see references 5,11 <sup>¶</sup>
<b>Sarilumab</b>	Kevzara <sup>®</sup>	RA	MAB IL-6 Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Secukinumab</b>	Cosentyx <sup>®</sup>	AS, PsO, PsA	MAB IL-17 Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>

<b>Siltuximab</b>	Sylvant®	Multicentric Castleman's disease	MAB IL-6 Inhibitor	
<b>Siponimod</b>	Mayzent®	MS	S1P Receptor Modulator	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Sirolimus</b>	Rapamune®	Anti-rejection	mTOR Kinase Inhibitor	For Covid-19 vaccine considerations see reference 8 <sup>¶</sup>
<b>Tacrolimus</b>	Advagraf®, Prograf®, Envarsus PA®, generic	RA, anti-rejection	Calcineurin Inhibitor	For Covid-19 vaccine considerations see references 3,7,8 <sup>¶</sup>
<b>Teriflunomide</b>	Aubagio®	MS	Pyrimidine Synthesis Inhibitor	For Covid-19 vaccine considerations see references 4,7,8 <sup>¶</sup>
<b>Tildrakizumab</b>	Illumya™	PsO	MAB IL-23 inhibitor	For Covid-19 vaccine considerations see reference 2 <sup>¶</sup>
<b>Tocilizumab</b>	Actemra®	JIA, RA	MAB IL-6 Inhibitor	For Covid-19 vaccine considerations see references 2,3,6 <sup>¶</sup>
<b>Tofacitinib</b>	Xeljanz®	PsA, RA, UC	JAK Inhibitor	For Covid-19 vaccine considerations see references 2,3 <sup>¶</sup>
<b>Upadacitinib</b>	Rinvoq®	RA	JAK Inhibitor	For Covid-19 vaccine considerations see references 2,3
<b>Ustekinumab</b>	Stelara®	CD, PsA, PsO	MAB IL-12/IL-23 inhibitor	For Covid-19 vaccine considerations see references 2,3,6 <sup>¶</sup>
<b>Vedolizumab</b>	Entyvio®	CD, UC	MAB Selective Adhesion-Molecule Inhibitor	For Covid-19 vaccine considerations see reference 6 <sup>¶</sup> No identified systemic immunosuppressive activity but is associated with a potential increased risk of infections or opportunistic infections.

**Please note:** Some medications indicated for autoimmune disease and cancer treatments are not generally considered immunosuppressive. These include (but are not limited to):

**Hormonal treatments, for example:**

- anastrozole
- bicalutamide
- darolutamide
- exemestane
- fluevestrant
- letrozole
- tamoxifen

**Antirheumatic treatments, for example:**

- auranofin
- hydroxychloroquine
- leflunomide
- sulfasalazine

aHUS=atypical hemolytic uremic syndrome; AS=ankylosing spondylitis; CD=Crohn's disease; DMARD = disease modifying antirheumatic drug; gMG=generalized myasthenia gravis; GPA = granulomatosis with polyangiitis; Ig = immune globulin; IL = interleukin; JAK = janus kinase; JIA=juvenile idiopathic arthritis; JRA = juvenile rheumatoid arthritis; MAB = monoclonal antibody; MMR = measles, mumps, rubella; MPA = microscopic polyangiitis; MS=multiple sclerosis; mTOR = mammalian target of rapamycin; NMOSD=neuromyelitis

optica spectrum disorder; PCSK9 = proprotein convertase subtilisin kexin type 9; PNH=paroxysmal nocturnal hemoglobinuria; PsA=psoriatic arthritis; PsO=plaque psoriasis; RA=rheumatoid arthritis; RANKL = receptor activator of nuclear factor kappa-B ligand; S1P = sphingosine-1-phosphate; SLE=systemic lupus erythematosus; SPA = granulomatosis with polyangitis; TNF  $\alpha$ = tumor necrosis factor-alpha; UC=ulcerative colitis

‡ Some drugs are used for several autoimmune diseases, often off-label. Some uncommon indications not included.

¶ Note that the information in these references is subject to change – please see the most current version

\*Corticosteroids: in the context of immunosuppression, only concerned with systemic corticosteroids (oral, parenteral), not topical, inhaled, or local injections. Physiologic dose is ~5 mg prednisone PO daily. See Corticosteroids and equivalent doses below.

‡Biosimilar. Not all biosimilars have the same indications as the reference product; check product monographs.

^ Subsequent entry non-biologic complex drug

**Table: Approximate Equivalent Doses of Systemic Corticosteroids (based on mineralocorticoid activity)**

Corticosteroid	Approximate Equivalent Doses	Route of Administration
<b>Prednisone/Prednisolone</b>	5 mg	PO
<b>Betamethasone</b>	0.6 mg to 0.75 mg	IM
<b>Cortisone</b>	25 mg	PO
<b>Dexamethasone</b>	0.75 mg	PO
<b>Hydrocortisone</b>	20 mg	PO
<b>Methylprednisolone</b>	4 mg	PO
<b>Triamcinolone</b>	4 mg	IM

Budesonide unlikely to cause immunosuppression (including when taken orally) but should be evaluated on a case-by-case basis.

IM= intramuscular; PO= by mouth

## References:

1. Canadian Rheumatology Association. Canadian Rheumatology Association Position Statement on COVID-19 Vaccination. [updated 25 Mar 2022, cited 6 May 2022]. Available from: [https://rheum.ca/wp-content/uploads/2022/03/FINAL-Updated-PS-on-COVID-19-Vacc-March-25\\_2022\\_for-publication.pdf](https://rheum.ca/wp-content/uploads/2022/03/FINAL-Updated-PS-on-COVID-19-Vacc-March-25_2022_for-publication.pdf)
2. Curtis JR, Johnson SR, Anthony DD, Arasaratnam RJ, Baden LR, Bass AR, et al. American College of Rheumatology Guidance for COVID-19 Vaccination in Patients with Rheumatic and Musculoskeletal Diseases – Version 5. *Arthritis Rheumatol* 2021. [updated 2 Feb 22, cited 6 May 2022]. Available from: <https://www.rheumatology.org/Portals/0/Files/COVID-19-Vaccine-Clinical-Guidance-Rheumatic-Diseases-Summary.pdf>
3. British Columbia Centre for Disease Control. Clinical Guidance on COVID- 19 Vaccines for Persons with Autoimmune Rheumatic Diseases. [updated 1 Mar 2022, cited 6 May 2022]. Available from: [http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19\\_vaccine/ARD\\_Clinical\\_Guidance.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19_vaccine/ARD_Clinical_Guidance.pdf)
4. Canadian Network of MS Clinics. THE CNMSC COVID-19 RECOMMENDATIONS. [updated 14 Oct 2021, cited 6 May 2022]. Available from: <https://cnmsc.ca/Covid19VaccineGuidance?culture=en-CA>
5. Osteoporosis Canada Rapid Response Team. COVID-19 VACCINATION AND OSTEOPOROSIS DRUG THERAPY. [updated 1 Apr 2021, cited 6 May 2022]. Available from: <https://osteoporosis.ca/covid-19-vaccination-and-osteoporosis-drug-therapy/>
6. British Columbia Centre for Disease Control. Clinical Guidance on COVID- 19 Vaccines for Persons with Inflammatory Bowel Disease. [updated 1 Mar 2022, cited 6 May 2022]. Available at: [http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19\\_vaccine/IBD\\_Clinical\\_Guidance.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19_vaccine/IBD_Clinical_Guidance.pdf)
7. British Columbia Centre for Disease Control. Clinical Guidance on COVID- 19 Vaccines for People with Autoimmune Neuromuscular Disorders Receiving Immunosuppressive/Immunomodulating Therapy. [updated 1 Mar 2022, cited 6 May 2022]. Available from: [http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19\\_vaccine/Neuroimmunological\\_Clinical\\_Guidance.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19_vaccine/Neuroimmunological_Clinical_Guidance.pdf)
8. Saskatchewan Health Authority. COVID – 19 VACCINE CONTRAINDICATIONS & PRECAUTIONS BACKGROUND DOCUMENT [updated 6 May 2021; cited 6 May 2022] Available from: <https://www.ehealthsask.ca/services/Manuals/Documents/COVID-19-Vaccine-Contraindications-and-Precautions-Background-Document.pdf>
9. British Columbia Centre for Disease Control. Clinical Guidance on COVID- 19 Vaccines for People with Paroxysmal Nocturnal Hemoglobinuria and Atypical Hemolytic Uremic Syndrome. [1 Mar 2022, cited 6 May 2022] Available from: [http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19\\_vaccine/PNH\\_aHUS\\_Clinical\\_Guidance.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/COVID-19_vaccine/PNH_aHUS_Clinical_Guidance.pdf)
10. American Academy of Allergy, Asthma & Immunology. Immunosuppressive Medication for the Treatment of Autoimmune Disease. [homepage on the Internet]. [reviewed 28 Sep 2020; cited 6 May 2022]. Available from: <https://www.aaaai.org/Conditions-Treatments/Related-Conditions/immunosuppressive?msclkid=ad1bac63cd6211ec86015af96d4f3ad0>
11. Tsourdi E, Yu EW, Jan de Beur SM, Drake MT. Vaccination for Coronavirus Disease 2019 (COVID-19) and Relationship to Osteoporosis Care: Current Evidence and Suggested Approaches. *J Bone Miner Res*. 2021 Jun;36(6):1042-1047. doi: 10.1002/jbmr.4304. Epub 2021 Apr 14. PMID: 33831269; PMCID: PMC8249992.
12. Rosenson RS, Hegele RA, Fazio S, Cannon CP. The Evolving Future of PCSK9 Inhibitors. *J Am Coll Cardiol*. 2018 Jul 17;72(3):314-329. doi: 10.1016/j.jacc.2018.04.054. Epub 2018 Jul 9. PMID: 30012326.
13. DynaMed [Internet]. Ipswich (MA): EBSCO Information Services. 1995 - 2022. Record No. T922873, PCSK9 Inhibitors; [updated 2018 Nov 30, cited 2022 May 8, 2022]. Available from <https://www.dynamed.com/topics/dmp~AN~T922873>. Registration and login required.
14. Public Health Agency of Canada. Immunization of immunocompromised persons: Canadian Immunization Guide. Ottawa: Government of Canada; [updated 09 May 2021; cited 11 May 2022]. Available from <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-8-immunization-immunocompromised-persons.html>
15. Charlton A, Hazlewood G. Rheumatoid Arthritis. In: Therapeutics [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2022 [updated Apr 2021; cited 2022 Apr 29]. Available from: <http://www.myrxtx.ca>. Also available in paper copy from the publisher.
16. Crawley A, Jensen B. Rheumatoid Arthritis: Biologic Agents. RxFiles drug comparison charts. Saskatoon, SK: University of Saskatchewan. [updated 01 Aug 2021; cited 29 Apr 2022]. Available from: <https://www.rxfiles.ca/RxFiles/uploads/documents/members/cht-DMARD.pdf>

17. Lindblad A, Jensen B, Regier L. Inflammatory Bowel Disease. RxFiles drug comparison charts. Saskatoon, SK: University of Saskatchewan. [updated 01 Aug 2021; cited 29 Apr 2022]. Available from: <https://www.rxfiles.ca/RxFiles/uploads/documents/members/Cht-IBD-UC-Crohns.pdf>.
18. Langley R. Psoriasis. In: Therapeutics [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2022 [updated Feb 2022; cited 2022 Apr 29]. Available from: <http://www.myrxtx.ca>. Also available in paper copy from the publisher.
19. Mansell H, Rosaasen N. Solid Organ Transplantation (SOT): Drug Management chart. RxFiles drug comparison charts. Saskatoon, SK: University of Saskatchewan. [updated 01 Aug 2021; cited 29 Apr 2022]. Available from: <https://www.rxfiles.ca/RxFiles/uploads/documents/members/CHT-Transplantation.pdf>
20. Kaplan A. Asthma in Adults and Adolescents. In: Therapeutics [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2022 [updated May 2021; cited 2022 Apr 29]. Available from: <http://www.myrxtx.ca>. Also available in paper copy from the publisher.
21. Crawley A, Jensen B, Regier L. Asthma. RxFiles drug comparison charts. Saskatoon, SK: University of Saskatchewan. [updated 01 Mar 2022; cited 29 Apr 2022]. Available from: <https://www.rxfiles.ca/RxFiles/uploads/documents/members/CHT-Asthma.pdf>.
22. Herbert J, Crawley A, Jensen B. Multiple Sclerosis: Disease Modifying Therapies (DMTs). RxFiles drug comparison charts. Saskatoon, SK: University of Saskatchewan. [updated 01 Aug 2021; cited 29 Apr 2022]. Available from: <https://www.rxfiles.ca/RxFiles/uploads/documents/members/Cht-MS-treatment.pdf>.
23. Namaka M, Ethans K. Multiple Sclerosis. In: Therapeutics [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2022 [updated Jan 2022; cited 2022 Apr 29]. Available from: <http://www.myrxtx.ca>. Also available in paper copy from the publisher.
24. Lexi-Comp Online™, Lexi-Drugs Online™, Hudson, Ohio: Lexi-Comp, Inc.; 2022; cited 29 Apr 2022. Available from: <http://online.lexi.com>
25. Public Health Agency of Canada. Immunization of persons with chronic diseases: Canadian Immunization Guide. Ottawa: Government of Canada; [updated 23 Nov 2021; cited 20 Apr 2022]. Available from: Immunization of persons with chronic diseases: Canadian Immunization Guide - Canada.ca