

# MYASTHENIA GRAVIS: CAUTIONARY DRUGS LIST

*Some medications may make myasthenia gravis worse. It is important to weigh the risk of a medication worsening myasthenia gravis symptoms and the benefits the medication may provide with your doctor. Check with your neurologist/healthcare providers before surgery and before adding or stopping medications.*

**ANESTHETICS** are typically used before or during surgery to produce loss of consciousness for major surgeries or to relieve pain and anxiety for minor surgeries. **Patients should always talk to their doctor before surgery and make the anesthesiologist aware of their MG diagnosis.** Topical anesthetics, medication used to relieve pain or itching, are unlikely to worsen MG when used in small doses.

**ANTI-INFECTIVES** such as antibiotics or antimicrobial agents are used to treat infections and may worsen myasthenia gravis symptoms. Often this occurs within 1 to 2 days of starting the anti-infective medication. A few classes of antibiotics that have been associated with MG flare-up are **aminoglycosides, fluoroquinolones, and macrolides**. In some cases, anti-infective eye drops may exacerbate symptoms of ophthalmic myasthenia. Anti-infective ear drops and topical ointments/creams are generally considered safe.

**ANTICONVULSANTS** (or antiepileptics) are medications used to prevent or treat **seizures**. Many medications in this class are also used to treat **nerve pain** or **mood disorders** (such as bipolar disorder). Rarely, some medications in this class have been associated with worsening symptoms of Myasthenia Gravis.

## **CANCER MEDICATION**

**Immune Checkpoint Inhibitors** are used to treat a variety of cancer types. These medications should be used cautiously or avoided, when possible, in patients with Myasthenia Gravis, as they have been shown to exacerbate the condition. Cases of MG have been reported in patients who have had prior myasthenia and those who do not have a history of MG.

**CARDIOVASCULAR MEDICATION** treats conditions related to heart health. Medications that treat **coronary artery disease, hypertension, high cholesterol, and heart arrhythmias** can often be used safely in patients with Myasthenia Gravis, however, there are certain classes of medications that should be used cautiously. **Beta-blockers, calcium channel blockers, and statins** are cardiovascular medications that should be used with caution and monitoring. Some **antiarrhythmics** should be avoided unless administered in an emergency with no alternative options.

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## DENTISTRY

Many of the medications discussed in this document are used in dentistry, including **pain medications, antibiotics, anesthetics, and corticosteroids**. **Patients should always talk to their dentist before appointments.**

**EYE DROPS** (some eye drops) used for **glaucoma, pupil dilation**, or as an **anesthetic** should be used with caution as they may be partially absorbed into the circulation and worsen symptoms of Myasthenia Gravis.

**GLUCOCORTICOIDS** or **corticosteroids** reduce inflammation and suppress the immune system. These medications are often used to manage MG. Patients with severe MG may experience an exacerbation of symptoms during the first 2 weeks of treatment with high-dose glucocorticoids. Initiation at lower dosage and slow up-titration avoids this potential issue for people with severe MG.

**NEUROMUSCULAR BLOCKING MEDICATIONS** are used as potent muscle relaxants during surgery to prevent muscle movement (temporary paralysis). These medications are contraindicated in myasthenia gravis. **Patients should always talk to their doctor before surgery and make the anesthesiologist aware of their MG diagnosis.**

**OPIOID MEDICATIONS** or **narcotics** are used to treat pain. These medications have known potential serious risks, including addiction and respiratory depression (slowed breathing). Patients with Myasthenia Gravis should take particular caution, especially if their symptoms include respiratory compromise (difficulty breathing).

## OVER-THE-COUNTER MEDICATIONS/SUPPLEMENTS

**Magnesium supplements or OTC medications** containing higher amounts of magnesium, such as certain **antacids and laxatives** can worsen muscle weakness in patients with Myasthenia Gravis. Products that claim to boost the immune system may contain high amounts of magnesium. Small amounts of magnesium in foods and multivitamins are safe.

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**PSYCHIATRIC MEDICATIONS** play an instrumental role in treating mental conditions such as **depression, bipolar disorder, anxiety, schizophrenia, ADHD, or insomnia**. Many psychiatric medications can be safely used in patients with Myasthenia Gravis. Some types of medications, including **benzodiazepines**, some **first-generation antipsychotics, amphetamines and tricyclic antidepressants** (may also be used for **nerve pain**) should be used cautiously in patients with MG.

## MISCELLANEOUS

**Penicillamine**, a drug most commonly used for rheumatoid arthritis, is associated with the development of myasthenia gravis and should not be used without consulting with a neuromuscular specialist.

**Contrast agents** are used to make it easier to see the body's internal structures for different types of medical imaging, such as x-rays and MRIs. Older agents used were associated with worsening myasthenia gravis symptoms. Newer agents are less commonly associated with worsening symptoms. It is still good to let the radiologist know of a Myasthenia Gravis diagnosis.

**Botulinum Toxin Type A (Botox)**, used for cosmetic purposes and medical treatments, should be avoided when possible in patients with myasthenia gravis due to the risk of worsening symptoms. A discussion with a neuromuscular specialist should occur before use.

**The following list is not a comprehensive list and these drugs may affect each person differently. As always, check with your healthcare providers before surgery and before adding or stopping medications.**

## THE MYASTHENIA GRAVIS ASSOCIATION (MGA)

The Myasthenia Gravis Association is committed to supporting patients and families impacted by myasthenia gravis in the heartland.

For more information regarding our organization, please visit: <http://www.mgakc.org/>  
To contact our organization, please email us at [info@mgakc.org](mailto:info@mgakc.org) or call us at 816-256-4100  
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myasthenia gravis association  
**MGA**  
of the heartland

Approved by:  
the MGA Medical Advisory Committee  
2021

# APPENDIX:

## MEDICATIONS TO AVOID OR USE WITH CAUTION

This list is not comprehensive and these drugs may affect each person differently. Check with your neurologist/healthcare providers before surgery and before adding or stopping medications.

### Risk Level Key

- **Level 1 – Contraindicated/Avoid**
- **Level 2 – Use only in hospital setting**
- **Level 3 – Use with caution if other options not available**
- **Level 4 – Rarely worsens MG, monitor symptoms**
- **Level 5 – May cause a temporary form of MG**

ANESTHETICS		
Generic Name	Brand Name	Risk
Bupivacaine	Marcaine, Sensorcaine	3
Desflurane	Suprane	2
Isoflurane	Forane, Terrell	2
Prilocaine	Citanest	3
Procaine	Novocain	3
Sevoflurane	Ultane	2

ANTI-INFECTIVES		
Generic Name	Brand Name	Risk
Amikacin	AriKayce	2
Amoxicillin	Moxatag	4
Ampicillin		4
Azithromycin	Zithromax, Azasite, Zmax	3
Bacitracin		2
Chloroquine		3
Ciprofloxacin	Cipro	1
Clarithromycin	Biaxin	3
Clindamycin	Cleocin	2
Colistimethate	Coly-Mycin	2
Colistin	Coly-Mycin	2
Delafloxacin	Baxdela	1
Doxycycline	Vibramycin, Morgidox, Oraxyl, Acticlate, Doryx, Oracea, Adoxa	3
Erythromycin	E.E.S, EryPed, Erythrocin	3
Gatifloxacin	Zymaxid	1
Gentamicin	Gentak	2
Hydroxychloroquine	Plaquenil	3
Imipenem	Primaxin, Recarbrio	4
Levofloxacin	Levaquin	1

ANTI-INFECTIVES (Continued)		
Generic Name	Brand Name	Risk
Mefloquine	Lariam	3
Metronidazole	Flagyl	3
Minocycline	Ximino, Solodyn	3
Moxifloxacin	Moxeza, Vigamox, Avelox	1
Neomycin	Neo-Fradin	2
Nitrofurantoin	Macrochantin, Macrobid	3
Ofloxacin	Ocuflox, Fioxin	1
Paromycin		2
Penicillin G	Bicillin	4
Penicillin VK		4
Polymyxin	Coly-Mycin	2
Quinine	Qualaquin	3
Ritonavir	Norvir	3
Streptomycin		2
Sulfamethoxazole/Tri methoprim	Sulfatrim, Bactrim	4
Telithromycin	Ketek	1
Tetracycline		3
Tobramycin	Tobi, Bethkis, Tobrex, Kitabis	2
Vancomycin	Vancocin, Firvanq	2

ANTICONVULSANTS		
Generic Name	Brand Name	Risk
Carbamazepine	Carbatrol, Equetro, Tegretol	4
Ethosuximide	Zarontin	4
Fosphenytoin	Cerebyx	4
Gabapentin	Horizant, Neurontin, Gralise	3
Pentobarbital	Nembutal	4
Phenobarbital		4
Phenytoin	Dilantin	3

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CANCER MEDICATIONS		
Generic Name	Brand Name	Risk
Atezolizumab	Tecentriq	3
Avelumab	Bavencio	3
Cemiplimab	Libtayo	3
Cisplatin	Platinol	2
Durvalumab	Imfinzi	3
Fludarabine	Fludara	2
Ipilimumab	Yervoy	3
Nivolumab	Opdivo	3
Pembrolizumab	Keytruda	3

CARDIOVASCULAR MEDICATIONS		
Generic Name	Brand Name	Risk
Acebutolol	Sectral	3
Amlodipine	Norvasc, Katerzia, Caduet, Lotrel, Consensi, Tribenzor, Exforge, Azor, Twynsta	3
Atenolol	Tenormin	3
Atorvastatin	Lipitor, Caduet	3
Betaxolol		3
Bisoprolol	Ziac	3
Carvedilol	Coreg	3
Diltiazem	Cardizem, Cartia, Dilt-CD, Dilt-XR, Diltzac, Taztia, Tiadylt, Tiazac, Matzim	3
Felodipine		3
Isradipine		3
Labetalol	Normodyne	3
Lidocaine	Xylocaine	2
Lovastatin	Altoprev	3
Methyldopa	Aldomet	5
Metoprolol	Toprol, Kapsargo	3
Nadolol	Corgard	3
Nebivolol	Bystolic, Byvalson	3
Nicardipine	Cardene	3
Nifedipine	Procardia	3
Nisoldipine	Sular	3
Penbutolol	Levatol	3
Pindolol		3
Pravastatin	Pravachol	3
Procainamide		2
Propranolol	Inderal	3
Quinidine		2
Rosuvastatin	Crestor, Ezallor	3
Simvastatin	FloLipid, Zocor, Vytorin	3

CARDIOVASCULAR MEDICATIONS (Continued)		
Generic Name	Brand Name	Risk
Sotalol	Sotylize, Betapace, Sorine	3
Timolol		3
Verapamil	Verelan, Calan, Isoptin	3

EYE DROPS		
Generic Name	Brand Name	Risk
Acetazolamide	Diamox	3
Betaxolol	Betoptic	3
Bupivacaine		3
Carteolol	Ocupress	3
Ciprofloxacin	Ciloxan	1
Echothiophate	Phospholine Iodide	3
Gatifloxacin	Zymaxid	1
Levobunolol	Betagan	3
Levofloxacin	Quixin, Iquix	1
Metipranolol	Optipranolol	3
Moxifloxacin	Moxeza, Vigamox	1
Ofloxacin	Ocuflox	1
Proparacaine	Alcaine	3
Timolol	Betimol, Istalol	3
Tropicamide	Mydracyl	3

GLUCOCORTICOIDS		
Generic Name	Brand Name	Risk
Dexamethasone	Decadron, Dxevo, Hemady	4
Methylprednisolone	Depo-Medrol, Medrol, Solu-Medrol	4
Prednisone	Deltasone, Rayos	4

MISCELLANEOUS MEDICATIONS		
Generic Name	Brand Name	Risk
Botulinum Toxin	Botox, Dysport	1
Penicillamine	Cuprimine, Depen	1

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NEUROMUSCULAR BLOCKING AGENTS		
Generic Name	Brand Name	Risk
Atracurium		2
Cisatracurium	Nimbex	2
Pancuronium		2
Rocuronium	Zemuron	2
Succinylcholine	Anectine, Quelicin	2
Vecuronium		2

OPIOID MEDICATIONS		
Generic Name	Brand Name	Risk
Codeine	Brontex, Alfen, Gauifenesin, Virtussin, Lortuss	3
Hydrocodone	Hysingla, Zohydro, Vicoprofen, Lortab	3
Hydromorphone	Dilaudid	3
Levorphanol		3
Meperidine	Demerol	3
Methadone	Dolophine	3
Morphine	MS Contin, Embeda	3
Oxycodone	Oxycontin, Xtampza, Percocet, Endocet	3
Oxymorphone	Opana	3
Propoxyphene	Darvon	3
Tapentadol	Nucynta	3
Tramadol	Ultram	3

OTC/SUPPLEMENTS		
Generic Name	Brand Name	Risk
Magnesium Carbonate	Gaviscon, Antacid	
Magnesium Citrate	Citroma	
Magnesium Hydroxide	Milk of Magnesia, Mylanta, Maalox	
Magnesium Salicylate	Backache Relief	
Magnesium Salts	Mag-64, Uro-Mag	

PSYCHIATRIC MEDICATIONS		
Generic Name	Brand Name	Risk
Alprazolam	Xanax	4
Amitriptyline	Elavil	3
Amphetamine	Adzenys, Dyanavel, Evekeo, Adderall, Mydayis	3
Chlordiazepoxide	Librium, Librax, Limbitrol	4
Chlorpromazine	Thorazine	3
Clobazam	Sympazan, Onfi	4
Clomipramine	Anafranil	3
Clonazepam	Klonopin	4
Clorazepate	Tranxene	4
Desipramine	Norpramin	3
Dextroamphetamine	Adderall	3
Diazepam	Valium, Diastat, Valtoco	4
Doxepin	Silenor	3
Droperidol	Inapsine	3
Estazolam	Prosom	4
Fluphenazine	Prolixin	3
Flurazepam	Dalmane	4
Haloperidol	Haldol	3
Imipramine	Tofranil	3
Lithium	Eskalith	3
Lorazepam	Ativan	4
Midazolam	Nayzilam	4
Nortriptyline	Pamelor	3
Oxazepam	Serax	4
Perphenazine	Trilafon	3
Pimozide	Orap	3
Prochlorperazine	Compazine, Compro	3
Protriptyline	Vivactil	3
Quazepam	Doral	4
Temazepam	Restoril	4
Thioridazine	Mellaril	3
Triazolam	Halcion	4
Trifluoperazine	Stelazine	3
Trimipramine	Surmontil	3

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## DISCLOSURE

The following information was sourced and approved by the Myasthenia Gravis Association (MGA) Medical Advisory Committee (MAC). The MAC is committed to ensuring myasthenia gravis patients in the heartland area are informed and up to date on the latest developments in myasthenia gravis. Advice regarding cautionary medications should be obtained through consultation with a patient's physician who has examined that patient or is familiar with that patient's medical history. For more information regarding the MGA Medical Advisory Committee, please visit: <http://www.mgac.org/medical-advisory-committee.html>