

## Oral Medications for the Treatment of Multiple Sclerosis

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| Drug<br>Generic Name                              | Tecfidera<br>dimethyl fumarate  | Gilenya<br>fingolimod   | Aubagio<br>teriflunamide  |
|---|---|---|---|
| Frequency of Administration                       | Twice each day  | Once each day   | Once each day   |
| Relative Relapse Reduction compared to placebo    | 44-53%  | 55%   | 31%   |
| Mechanism of Action                               | Poorly understood, but interacts with Nrf2 pathway. Thought to have anti-inflammatory and anti-oxidant effects. | Keeps white blood cells in lymph nodes  | Slows the division of rapidly dividing cells (white blood cells)  |
| Workup prior to initiation                        | Complete Blood Count  | VZV (chicken pox) serology, Complete Blood count, Liver function tests, EKG (must be normal), Visit with ophthalmologist to rule out macular edema. First dose administered at MS Center and patient is observed for 6 hours. | Complete Blood Count, Liver function tests, Tuberculosis screen (PPD or T-spot test)  |
| Pharmacology                                      | Rapidly metabolized in the blood  | Metabolized slowly by the liver and if discontinued, levels decrease by half after seven days   | Metabolized very slowly in the liver and even after discontinuing the medication, levels remain high for months. If needed, there are medications to speed elimination from the body. |
| Monitoring  | Complete blood count every 6 months   | Complete blood count and liver function tests every 6 months. Ophthalmology evaluation 3 months after start.  | Liver function tests monthly for 6 months   |
| Side Effects                                      | Largely worst in the first month: flushing, abdominal cramping, diarrhea  | Generally well tolerated, but headache, back ache and malaise are common. White blood cells are routinely lowered by this medicine, and reflects the mechanism of action  | Generally well tolerated, but 13% of patients have hair thinning (re-timing of hair follicles) that largely resolves in several months  |
| Interactions                                      | None  | Antidepressants and antibiotics that can promote cardiac arrhythmias  |   |
| Contraindications and Cautions to use of medicine | <b>Caution:</b> Underlying gastrointestinal troubles  | <b>Contraindication:</b> coronary artery disease, cardiac arrhythmias, <b>Caution:</b> Poor vision, Diabetes mellitus, frequent herpes virus infections, strong family history of skin cancer, personal history of cancer     | <b>Contraindication:</b> Prior tuberculosis infection, <u>Age in child-bearing years for women</u>  |
| Pregnancy category                                | C   | C   | X   |