DISEASE-MODIFYING THERAPIES FOR MS

National Multiple Sclerosis Society

Updated **August 2023**. If you are viewing a printed version of this brochure, please visit nationalMSsociety.org/DMT for the most current version.

Although a cure for MS has not yet been discovered, a number of medications (also called disease modifying therapies, or DMTs) have been approved to treat MS. Permanent damage to the central nervous system (or CNS, which is made up of the brain, spinal cord and optic nerves) can occur early in the disease, even when a person has no symptoms and feels well. Early and ongoing treatment with DMTs may help prevent permanent damage in the CNS. Research has demonstrated the DMTs for relapsing forms of MS reduce the frequency and severity of MS relapses, reduce the development of new areas of damage in the CNS and slow the accumulation of disability. Disease modifying therapies don't generally improve everyday symptoms. Many symptoms of MS can be managed using other types of medications and non- medication strategies. Combining DMT use, symptom management and a healthy lifestyle is the optimal strategy for managing MS.

Working with your healthcare provider to find the best choice for you

The decision to take a DMT should be a shared decision made jointly between you and your healthcare provider. Each person's body or disease can respond to DMTs differently, and the DMT that is the best option for one person may not be the best for another person. In addition, a DMT that adequately controls your disease today may not do so in the future and you may need to change to a different DMT. Also make sure your provider knows what other health conditions and medications (including vitamins and supplements) you take as that can affect which DMTs are safe for you.

Help with DMT costs

Learn more about patient assistance programs to help with the cost of each DMT at **nationalMSsociety.org/assistanceprograms**. For additional information, connect to an MS Navigator at **1-800-344-4867** or **contactusnmss@nmss.org**.

DMTs at a Glance

The table below outlines information on each DMT. Scan the QR code or click on the link next to the DMT to view the medication guide which includes medication side effects and warnings.

Each DMT can cause a serious allergic reaction, and some make it unsafe for you to receive certain vaccines while you're taking them. Prior to starting any DMT, talk with your healthcare provider about any vaccines you should get or have recently received. Each DMT requires some safety monitoring. Talk with your healthcare provider about the monitoring that is required for the DMT you are taking and be consistent with it.

None of the DMTs are approved by the FDA for women who are pregnant or plan to become pregnant, or who are breastfeeding. It is important for women to discuss their plans for pregnancy with their healthcare provider so that they can decide together the best and safest treatment plan.

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TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Avonex® (interferon beta-1a) Biogen Approval: 1996 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	30 mcg intramuscular (into a large muscle) injection once weekly Pregnancy: Data do not suggest a clear relationship between use and major congenital malformations, but may cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Betaseron® (interferon beta-1b) Bayer Healthcare Pharmaceuticals Inc. Approval for RRMS: 1993 US; 1995 CAN Approval for SPMS: 1995 CAN for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	0.25 mg subcutaneous (under the skin) injection every other day Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

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Copaxone® (glatiramer acetate) Teva Neuroscience Approval: 1996 US; 1997 CAN Therapeutic equivalent to Copaxone: Glatiramer Acetate Mylan Pharmaceuticals Approval: 2017 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	20 mg subcutaneous (under the skin) injection every day, or 40 mg subcutaneous injection three times per week Pregnancy: Available human data are not sufficient to support conclusions about drug-associated risk for major birth defects and miscarriage	 Read the Copaxone **medication guide** for a comprehensive overview of side effects and risks associated with thismedication or scan the QR code above.  Read the Mylan glatiramer acetate **medication guide** for 20 mg or scan the QR code above.  Read the Mylan glatiramer acetate **medication guide** for 40 mg or scan the QR code above.

Injectable Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Extavia® (interferon beta-1b) Novartis Pharmaceuticals Approval: 2009 US; 2009 CAN, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	0.25 mg subcutaneous (under the skin) injection every other day Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Glatopa® (glatiramer acetate, generic equivalent of Copaxone) Sandoz – a Novartis company Approval: 2015 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	20 mg subcutaneous (under the skin) injection every day, or 40 mg subcutaneous injection three times per week Pregnancy: Available human data are not sufficient to support conclusions about drug-associated risk for major birth defects and miscarriage	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Injectable Treatments

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Kesimpta® (ofatumumab) Novartis Approval: 2020 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	20 mg subcutaneous (under the skin) injection at weeks 0, 1 and 2, followed by 20 mg once monthly starting at week 4 Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Plegridy® (pegylated interferonbeta-1a) Biogen Approval: 2014 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	63 mcg subcutaneous (under the skin) or intramuscular (into a large muscle) injection on day 1, 94 mcg on day 15, and 125 mcg on day 29 and every 14 days thereafter Pregnancy: Data do not suggest a clear relationship between use and major congenital malformations, but may cause fetal harm based on animal data.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Injectable Treatments

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Rebif® (interferon beta-1a) EMD Serono, Inc / Pfizer, Inc Approval: 1998 US; 2002 CAN, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	22 mcg or 44 mcg subcutaneous (under the skin) injection three times per week Pregnancy: Data do not suggest a clear relationship between use and major congenital malformations, but may cause fetal harm based on animal data.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Oral Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Aubagio® (teriflunomide) Sanofi Genzyme Approval: 2012 US; 2013 CAN, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	7 mg or 14 mg pill by mouth once daily Pregnancy: Contraindicated for use in pregnant women and in females of reproductive potential who are not using effective contraception because of the potential for fetal harm. Females should not take if they are pregnant or plan to become pregnant. Males should not take if their partner plans to becomes pregnant. Effective birth control should be used by males and females if either partner is taking Aubagio or still has Aubagio in their blood. Aubagio can remain in the blood for up to 2 years after stopping taking it. A healthcare provider can prescribe medication to lower Aubagio blood levels more quickly.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Bafiertam™ (monomethyl fumarate) Banner Life Sciences Approval: 2013 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in adults.	95 mg capsule by mouth twice daily for 7 days and 190 mg twice a day thereafter Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Oral Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Gilenya® (fingolimod) Novartis Pharmaceuticals Approval: 2010 US; 2011 CAN, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in patients 10 years and older.	0.5 mg capsule by mouth once daily for adults and children weighing greater than 40 kg or 0.25 mg once daily by mouth for children weighing less than or equal to 40 kg Pregnancy: May cause fetal harm based on animal data. Females who can become pregnant should use effective birth control during treatment and for 2 months after stopping	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Mavenclad® (cladribine) EMD Serono, Inc. Approval: 2019 US; 2017 CAN for the treatment of relapsing forms of MS, to include relapsing-remitting disease and active secondary progressive disease, in adults. Because of its safety profile, use is generally recommended for those who have had an inadequate response to, or are unable to tolerate, an alternate drug indicated for the treatment of MS.	Tablet given by mouth in two treatment courses, once per year for two years. Each treatment course has two cycles, which are 4-5 days long and about one month apart. The exact dose will depend on your weight Pregnancy: Contraindicated for use in pregnant women and in women and men of reproductive potential who do not plan to use effective contraception because of the risk of fetal harm It is not known if Mavenclad passes into your breast milk. Do not breastfeed on the days, on which you take Mavenclad and for 10 days after the last dose.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Oral Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Mayzent® (siponimod) Novartis Pharmaceuticals Approval: 2019 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	Increases each day over 4-5 days to the ongoing (maintenance) dose of a 1mg or 2 mg pill by mouth once daily. Your healthcare provider will do a blood test to determine whether you will take the 1 mg or 2mg maintenance dose and give you specific instructions for increasing the dose each day to reach the maintenance dose. Pregnancy: May cause fetal harm based on animal data. Tell your healthcare provider right away if you become pregnant while taking Mayzent or if you become pregnant within 10 days after stopping Mayzent. Females taking Mayzent should use effective birth control during treatment and for 10 days after stopping Mayzent.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Ponvory™ (ponesimod) Janssen Pharmaceuticals, Inc. Approval: 2021 US; for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in adults.	2mg pill by mouth on day one, increased incrementally to a maintenance dose of 20mg on day 15 taken once daily thereafter. Your healthcare provider will give you specific instructions for increasing the dose each day to reach the maintenance dose. Pregnancy: May cause fetal harm based on animal data. Women of childbearing potential should use effective contraception to avoid pregnancy during and for 1 week after stoppingtreatment.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Oral Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Tascenso ODT® (fingolimod) Cycle Pharmaceuticals Approval: 2021 US; for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in patients 10 years and older.	0.5 mg orally disintegrating tablet by mouth once daily for adults and children weighing greater than 40 kg or 0.25 mg once daily by mouth for children weighing less than or equal to 40 kg. Pregnancy: May cause fetal harm based on animal data. Females who can become pregnant should use effective birth control during treatment and for 2 months after stopping.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Tecfidera® (dimethyl fumarate) Biogen Approval: 2013 US; 2013 CAN, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, in adults.	120 mg capsule by mouth twice daily for one week, followed by 240 mg capsule twice daily thereafter Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Oral Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Vumerity® (diroximel fumarate) Biogen Approval: 2013 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in adults.	231 mg capsule by mouth twice daily for one week, followed by two 231 mg capsules taken twice daily thereafter Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Zeposia® (ozanimod) Bristol Myers Squibb Approval: 2020 US, for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing- remitting disease (RRMS) and active secondary progressive disease, in adults.	0.23 mg capsule by mouth once daily for days 1-4, followed by 0.46 mg once daily for days 5-7, then increased to 0.92 mg once daily on day 8 and thereafter. Pregnancy: May cause fetal harm based on animal data. Females who can become pregnant should use effective birth control	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Intravenous Infusion Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Briumvi™ (ublituximab-xiiy) TG Therapeutics Approval: 2022 US; for the treatment of relapsing forms of multiple sclerosis, which include clinically isolated syndrome, relapsing-remitting disease and active secondary progressive disease, in adults.	450 mg intravenous infusion (a needle placed in your vein) every 6 months (first dose: 150 mg on day one and 450 mg 2 weeks later) Pregnancy: May cause fetal harm based on animal data. Females of childbearing potential should use effective contraception to avoid pregnancy during and for at least 6 months after stopping treatment.	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Lemtrada® (alemtuzumab) Sanofi Genzyme Approval: 2014 US; 2014 CAN, for the treatment of relapsing forms of multiple sclerosis, to include relapsingremitting disease and active secondary progressive disease, in adults. Because of Lemtrada's safety profile, the FDA recommends that this medication generally be reserved for people who have had an inadequate response to two or more MS therapies.	12 mg per day intravenous infusion (a needle placed in your vein) for five consecutive days, followed by 12 mg per day on three consecutive days one year later Pregnancy: May cause fetal harm	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Intravenous Infusion Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Novantrone® (mitoxantrone) Available only as a generic medication Approval: 2000 US for reducing neurologic disability and/or the frequency of clinical relapses in patients with secondary (chronic) progressive, progressive relapsing, or worsening relapsing-remittingmultiple sclerosis (i.e., patients whose neurologic status is significantly abnormal between relapses)	12 mg/m² intravenous infusion (a needle placed in your vein) every 3 months. Lifetime cumulative dose limit of approximately 8–12 doses over 2–3 years (140 mg/m2) Pregnancy: May cause fetal harm when administered to a pregnant woman	Novantrone is rarely prescribed for MS. Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Ocrevus® (ocrelizumab) Genentech (a member of the Roche Group) Approval: 2017 US; 2013 CAN, for the treatment of relapsingforms of multiple sclerosis in adults, which include clinically isolated syndrome, relapsing-remitting disease (RRMS) and active secondary progressive disease, and primary progressive MS in adults.	600 mg intravenous infusion (a needle placed in your vein) every 6 months (first dose: 300 mg on day one and 300 mg 2 weeks later) Pregnancy: May cause fetal harm based on animal data	Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

Intravenous Infusion Treatments

TREATMENT (CHEMICAL NAME) MANUFACTURER FDA INDICATIONS	DOSE/ROUTE OF ADMINISTRATION PREGNANCY, FAMILY PLANNING & BREASTFEEDING	SIDE EFFECTS AND WARNINGS
Tysabri® (natalizumab) Biogen Approval: 2004 US, as a monotherapy (not in combination with any other MS disease-modifying treatment or other immune suppressant drugs) for the treatment of relapsing forms of MS, to include clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive disease, in adults.	300 mg intravenous infusion (a needle placed in your vein) once every 28 days. Must take place in an approved infusion facility Pregnancy: Can cause fetal harm	 Read the **medication guide** for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.
Tyruko® (natalizumab-sztn) Sandoz Biosimilar to Tysabri Approval: 2023 US, as a monotherapy (not in combination with any other MS disease-modifying treatment or other immune suppressant drugs) for the treatment of relapsing forms of MS, to include clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive disease, in adults.	300 mg intravenous infusion (a needle placed in your vein) once every 28 days. Must take place in an approved infusion facility Pregnancy: Can cause fetal harm	 Read the prescribing information and medication guide for a comprehensive overview of side effects and risks associated with this medication or scan the QR code above.

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Early and ongoing treatment with an FDA-approved therapy can make a difference for people with multiple sclerosis. Learn about your options by talking to your healthcare professional and contacting the Society at nationalMSsociety.org or 1-800-344-4867.

The Society publishes many other resources about various aspects of MS.
Visit nationalMSsociety.org/brochures or call 1-800-344-4867.

About the National Multiple Sclerosis Society

Founded in 1946, the National MS Society is a nationwide organization leading the global charge to create a world free of MS. As a movement by and for people affected by MS, the Society brings together people of diverse backgrounds to turn their passion and power into real results. Through the support of generous donors and members in the MS community, the Society funds cutting-edge research, drives change through advocacy, facilitates professional education, and provides programs and services to help all people affected by MS live their best lives.

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MS Navigator®: 1-800-344-4867

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