

## Working with MS Support Group\*

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### Agenda

3:00pm	Welcome!
	Brief Introductions/Member Check-in
3:15pm	<b>Infections, Vaccines, &amp; MS</b> "An ounce of prevention is worth a pound of cure." - Benjamin Franklin 1736
4:00pm	Member Sharings & Support
5:00pm	Adjourn

### Handouts & "News You Can Use":

It has long been recognized that multiple sclerosis may arise as a result of interactions between environmental triggers and host genetic factors, the combination of which may influence disease susceptibility or expression. (Infections and multiple sclerosis. Handbook of Clinical Neurology, 2014;122:p164)

<https://www.ncbi.nlm.nih.gov/pubmed/24507517>

Three factors are thought to contribute to the risk of developing MS, but more research is needed:

- 1) Genetics – family genetics, as well as cellular genetics
- 2) Geography – risk rises with distance from equator before age 15 yrs., but there are notable exceptions
- 3) Infectious agents –
  - a) Viruses: e.g., herpes simplex virus and Epstein-Barr Virus (EBV)
  - b) Bacteria: e.g., Chlamydia pneumoniae; Clostridium perfringens type B

Patients With Multiple Sclerosis Face Greater Infection Risk (by B. May, Neurology Advisor, October 12, 2018)

<https://www.neurologyadvisor.com/conference-highlights/ectrims-2018/patients-with-multiple-sclerosis-face-greater-infection-risk/>

MS patients had higher rates of any infection vs patients without MS (IRR 1.25; 95% CI, 1.21-1.29)

How childhood viral infections may later drive multiple sclerosis. (by M. Cohut., Medical News Today, June 29, 2019)

<https://www.medicalnewstoday.com/articles/325597.php>

Infections in patients with multiple sclerosis: Implications for disease-modifying therapy (by EG Celius, Acta Neurologica Scandinavica, published online OCT25, 2017)

<https://onlinelibrary.wiley.com/doi/full/10.1111/ane.12835>

Patients with multiple sclerosis have an increased risk of infections compared to the general population, even before treatment with DMTs.

Disease-modifying therapies and infectious risks in multiple sclerosis (A. Winkelmann, et. al. Nature Reviews Neurology volume 12, pages217–233 (2016))

[https://www.nature.com/articles/nrneurol.2016.21?WT.feed\\_name=subjects\\_myelin-biology-and-repair](https://www.nature.com/articles/nrneurol.2016.21?WT.feed_name=subjects_myelin-biology-and-repair)

MS treatments are also associated with an increased risk of infection.

Treatment of infections in MS (by MJ Almeida, Multiple Sclerosis News Today)

<https://multiplesclerosisnewstoday.com/treatment-of-infections-in-ms/>

Vaccinations do not raise risk of multiple sclerosis (by C Paddock. Medical News Today, August 02, 2019)

<https://www.medicalnewstoday.com/articles/325941.php>

In the 5 years before receiving a diagnosis, participants who developed MS had received *fewer* vaccinations than those who did not develop the condition. And there is *zero evidence that recent vaccination increases the likelihood of MS* or the onset of an initial MS episode.

## Vaccinations (Living Well with MS, NMSS)

<https://www.nationalmssociety.org/Living-Well-With-MS/Diet-Exercise-Healthy-Behaviors/Vaccinations>

It is recommended that people with MS receive vaccines according to the standard vaccine schedule.

However, the AAN recommends *against using live* vaccines in people with MS who are currently taking a disease modifying therapy (DMT).

## Will There Ever Be a Vaccine for MS?

<https://www.spokesman.com/stories/2021/mar/03/it-is-exciting-multiple-sclerosis-vaccine-could-be/>

### **A noninflammatory mRNA vaccine for treatment of experimental autoimmune encephalomyelitis**

(*Science* 08 Jan 2021: Vol. 371, Issue 6525, pp. 145-153)

The ability to control autoreactive T cells without inducing systemic immune suppression is the major goal for treatment of autoimmune diseases. The key challenge is the safe and efficient delivery of pharmaceutically well-defined antigens in a noninflammatory context. Here, we show that systemic delivery of nanoparticle-formulated 1-methylpseudouridine-modified messenger RNA (m1Y mRNA) coding for disease-related autoantigens results in antigen presentation on splenic CD11c<sup>+</sup>

antigen presenting cells in the absence of costimulatory signals. **In several mouse models of multiple sclerosis,**

**the disease is suppressed by treatment with such m1Y mRNA.** The treatment effect is associated with a

reduction of effector T cells and the development of regulatory T cell (T<sub>reg</sub> cell) populations. Notably, these T<sub>reg</sub> cells execute strong bystander immunosuppression and thus improve disease induced by cognate and noncognate autoantigens.

## Who Needs a Flu Vaccine and When?

<https://www.cdc.gov/flu/prevent/vaccinations.htm>

## **Next/Upcoming Meetings:**

June 13<sup>th</sup> – Meeting

July 11<sup>th</sup> – Meeting

**August – NO MEETING**/Take a break from the summer heat and go do something fun; expand your brain!

Sept 12<sup>th</sup> – Meeting

- \* "Working with MS" is a group of persons with Multiple Sclerosis (MS) or its symptoms who seek to offer each other, and others with MS, support, encouragement, and ways to approach challenges to working with MS. We are NOT health care professionals, counselors, physicians, attorneys, employment counselors, or representatives of public service agencies. Information provided at this site is purely informational and does NOT represent a recommendation of any kind, nor medical, legal, or other professional advice, and should be used only after and/or in consultation with the appropriate provider(s) (e.g., physicians, counselors, lawyers). Any opinions expressed on these pages are purely the opinion of the person who has authored it and does not represent the opinion of "Working with MS" or its members or sponsor(s).