

Too Much Salt Related to Autoimmune Diseases



By Kayla Slater and Julie Heinz

Overview of Study

- ☞ Reported in the journal, Nature (by Chicago Tribune)
- ☞ Studied mice, genetically engineered to develop MS
- ☞ High salt intake vs. moderate salt intake
- ☞ Got much worse with a high-salt diet (Western diet)
- ☞ "It's not bad genes. It's not bad environment. It's a bad interaction between genes and the environment,"
- Dr. David Hafler



Affects of high salt diet

☞ Already known affects of high-salt diet:

- Heart Disease
- Hypertension (high blood pressure)

☞ Now known affects of high-salt diet:

☞ Autoimmune Diseases:

- Multiple sclerosis (MS)
- Type I Diabetes



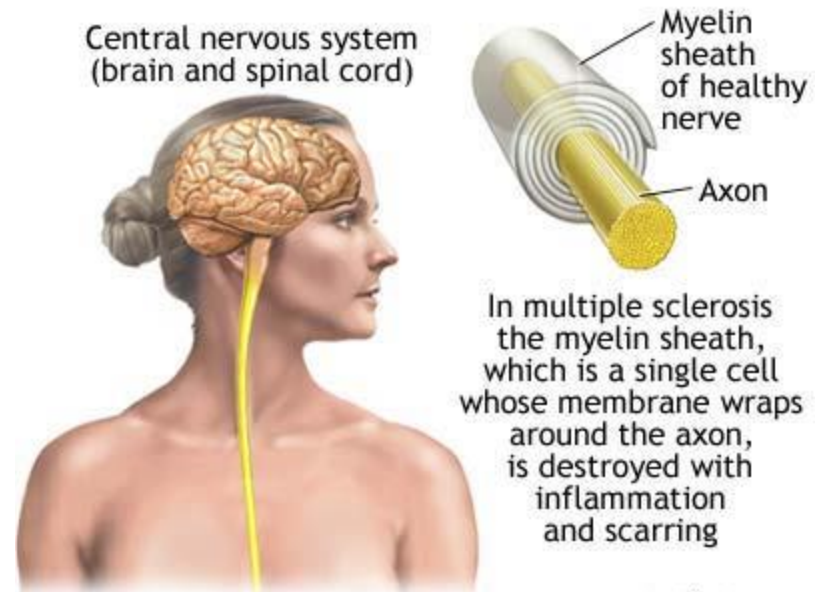
Multiple Sclerosis (MS)

☞ Affects/damages:

- The central nervous system (brain and spinal cord)
- The myelin sheath
- Slows down nerve cell signals between the cells
- Inflammation

☞ Symptoms:

- Numbness
- Muscle spasms
- Difficulty with coordination
- Lose of balance
- Weakness



Statistics of MS

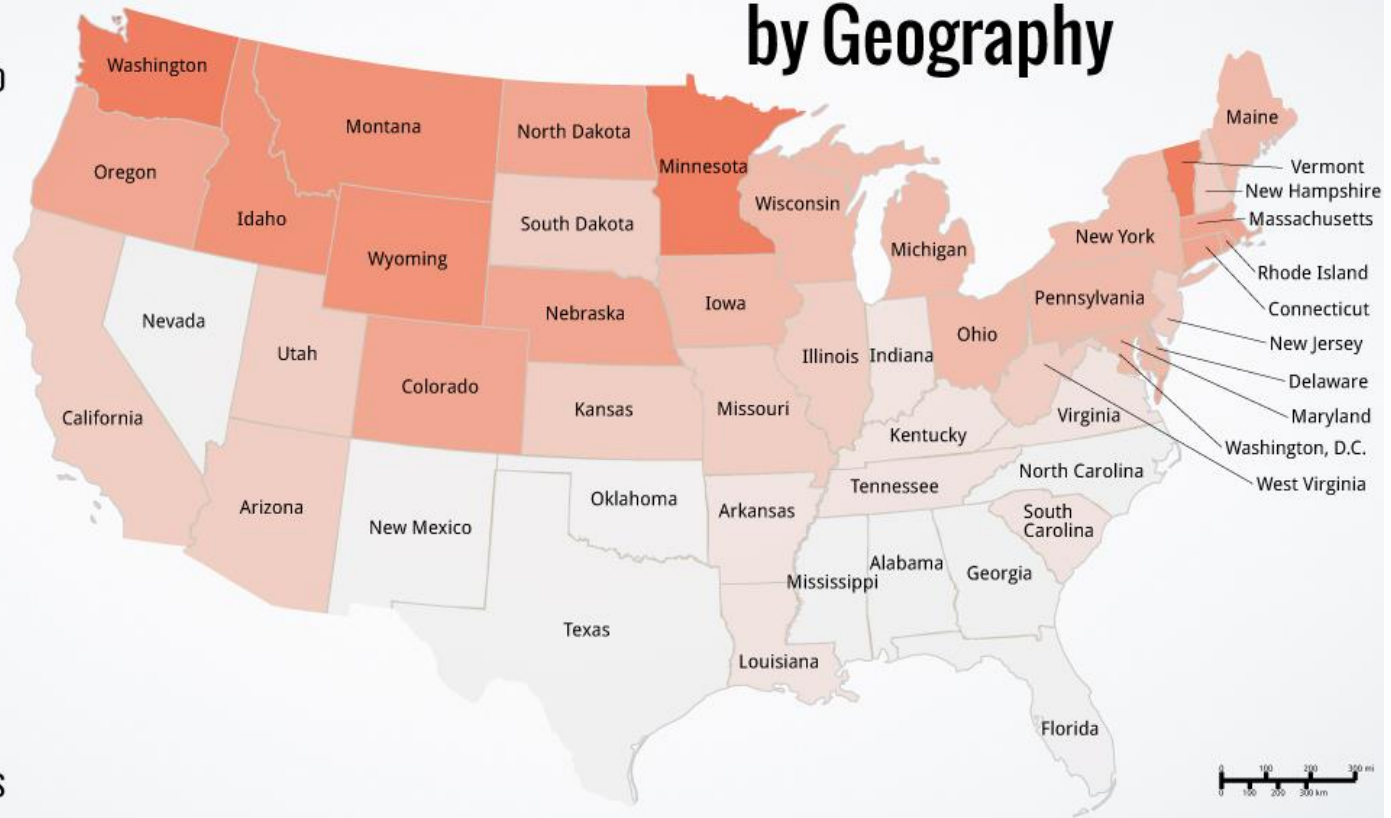
- ☞ Most common in women, Caucasian, above the 40° latitude line
- ☞ 1 in 750 Americans have chance of developing MS
- ☞ Genetics: 1 in 40 children of MS parents
- ☞ From the National Multiple Sclerosis Society



Multiple Sclerosis by Geography in U.S.

Multiple Sclerosis by Geography

CASE-CONTROL RATIO OF MS
A higher ratio indicates greater prevalence



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WWW.INVW.ORG/MS

PRODUCED BY: JASON ALORN/INVESTIGATEWEST SOURCE: BERETICH AND BERETICH (2009)

Hafler's Study

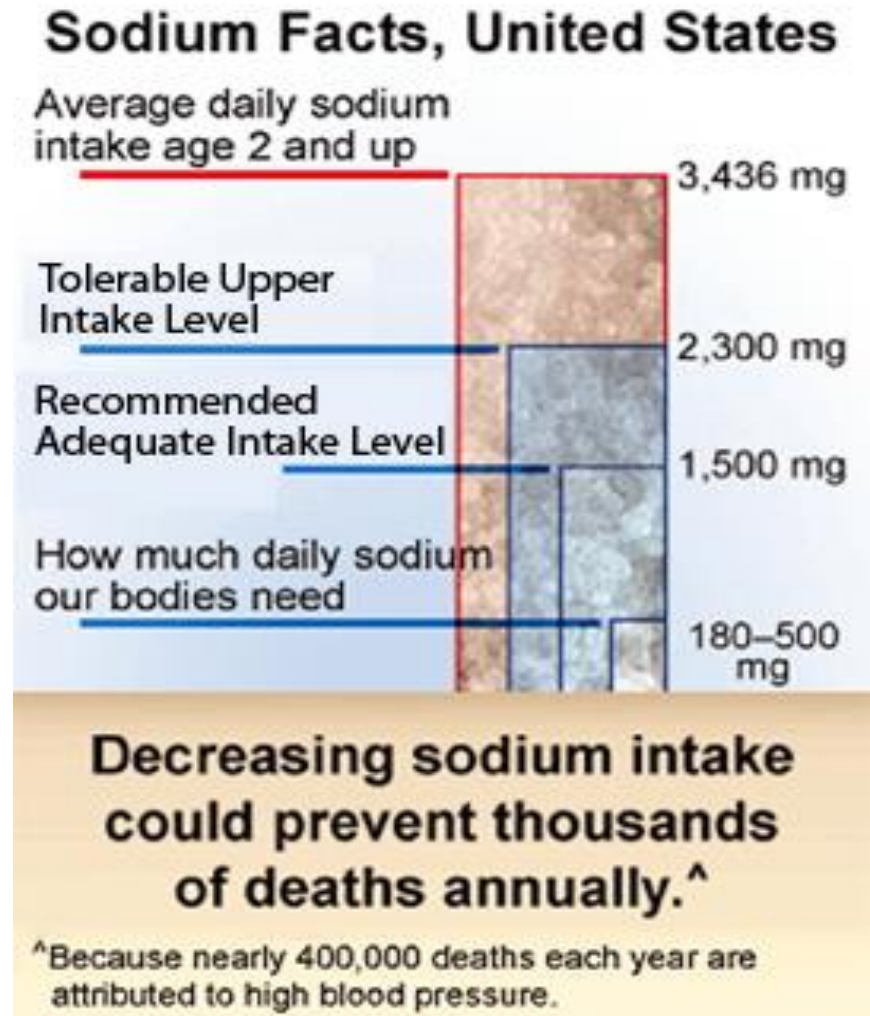
- ∞ Studied gut microbes in cell function in 100 healthy individuals
- ∞ Those that ate from a fast food restaurant more than once a week:
 - Increase in Th17 (auto immune cell)
 - Th17 promotes information against pathogens, but attacks healthy tissue

Results

- ∞ Adding high-salt diet to mice, increased the production of th17
- ∞ Mice genetically engineered with predisposition of MS, had a more severe case of the disease
- ∞ Those with a genetic history with MS, should take extra precaution in their salt intake

American High-Salt Diet

- ☞ Average Daily Sodium Intake: **3,436 mg**
- ☞ Daily Sodium Needed: **180-500 mg**
- ☞ More than **3,000mg** than needed or **6 times** as much salt



High-Salt Foods

- ☞ Pretzels: 385 mg
- ☞ 2 slices of pre-packaged deli meat: 362 mg
- ☞ Canned vegetables: 730 mg
- ☞ Canned soup: 744 mg
- ☞ Soy sauce: 1,024 mg
- ☞ Spinach artichoke dip: 2,500 mg
- ☞ Cheese fries: 2,800 mg



References

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