

Casual Friday Series

# **MS and Functional Considerations, Part 1**

A Biogenetix Clinical Presentation

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# Disclaimer

- *Information in this presentation is not intended, in itself, to diagnose, treat, reverse, cure, or prevent any disease. While this presentation is based on medical literature, findings, and text, The following statements have not been evaluated by the FDA.*
- *The information provided in this presentation is for your consideration only as a practicing health care provider. Ultimately you are responsible for exercising professional judgment in the care of your own patients.*



# Multiple Sclerosis

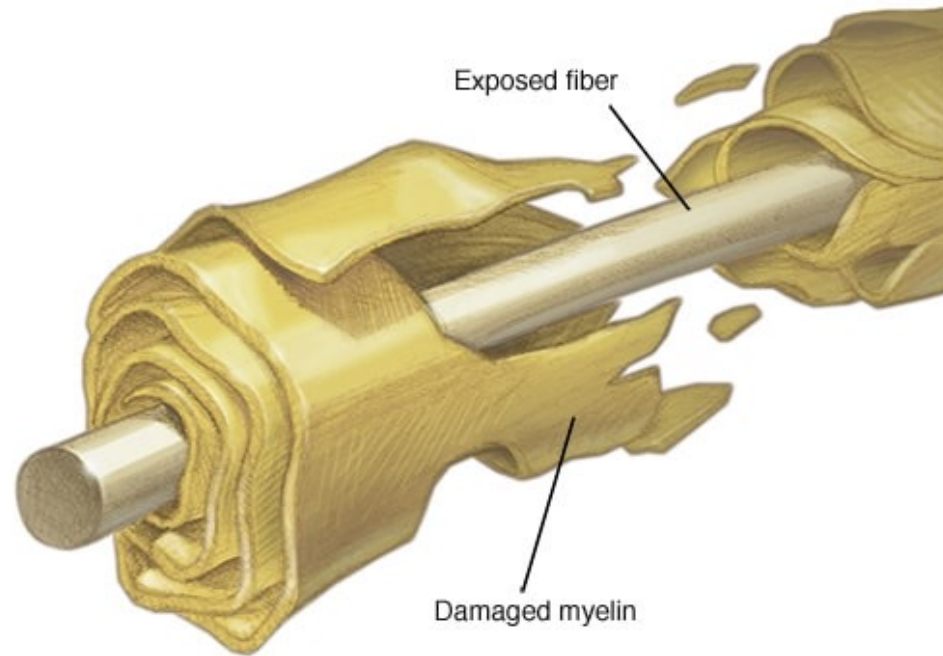
- A potentially disabling disease of the brain and spinal cord.
- The immune system attacks the protective sheath (myelin) that covers nerve fibers and causes communication problems between your brain and the rest of your body. Eventually, the disease can cause permanent damage or deterioration of the nerves.
- Modern Medicine: There's no cure for multiple sclerosis. However, treatments can help speed recovery from attacks, modify the course of the disease and manage symptoms.



Normal nerve



Nerve affected by MS



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## Symptoms:

- Numbness or weakness in one or more limbs that typically occurs on one side of your body at a time, or your legs and trunk.
- Electric-shock sensations that occur with certain neck movements, especially bending the neck forward (Lhermitte sign).
- Tremor, lack of coordination or unsteady gait.
- Partial or complete loss of vision, usually in one eye at a time, often with pain during eye movement.
- Prolonged double vision
- Blurry vision
- Slurred speech
- Fatigue
- Dizziness
- Tingling or pain in parts of your body
- Problems with sexual, bowel and bladder function.



## Types and Progression Patterns

- At least 50% of those with relapsing-remitting MS eventually develop a steady progression of symptoms, with or without periods of remission, within 10 to 20 years from disease onset. This is known as secondary-progressive MS.
- The worsening of symptoms usually includes problems with mobility and gait. The rate of disease progression varies greatly among people with secondary-progressive MS.
- Some people with MS experience a gradual onset and steady progression of signs and symptoms without any relapses, known as primary-progressive MS.



## MS Risk Factors to consider:

- Age (20-40)
- Sex (women 2-3x more likely)
- Infections (EBV)
- Heritage: white, northern European increased risk/rates of disease.
- Climate: Canada, northern USA
- Vit D Status: low levels and less sun exposure linked with increased risk.
- Already having another AI disease.
- Smoking



## Progressive symptoms:

- MM stiffness, spasms
- Paralysis, usually the legs are involved.
- Loss of bowel, bladder, and sexual function
- Forgetfulness, mood swings
- Depression
- Epilepsy
- Etc, etc.





Mayo Clinic: It isn't clear why MS develops in some people and not others. A combination of genetics and environmental factors appears to be responsible.





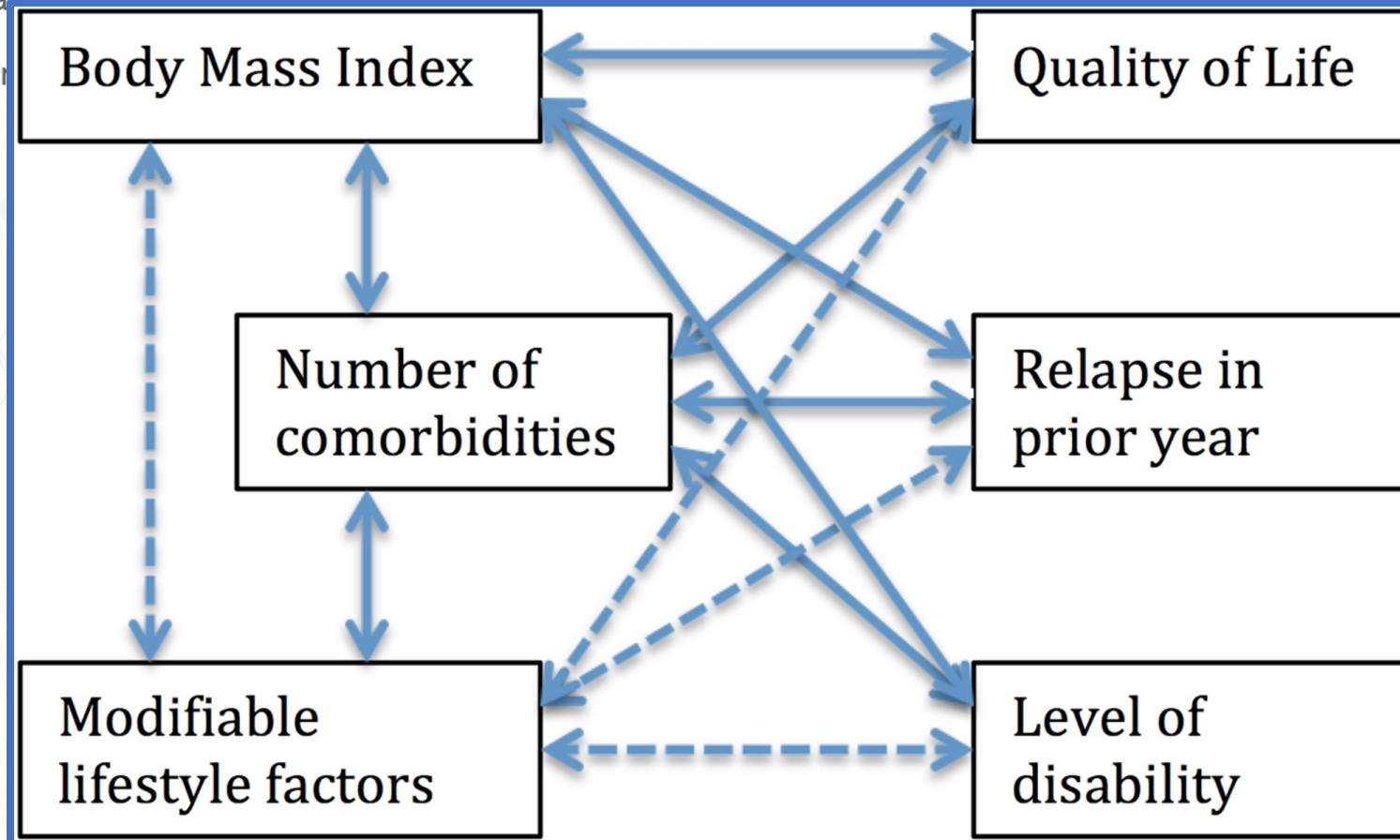
Lifestyle + Genetics = Chronic Health Condition



# Prevalence of Comorbidities, Overweight and Obesity in an International Sample of People with Multiple Sclerosis and Associations with Modifiable Lifestyle Factors

Claudia Helena Marek, Sandra Leanne Neate, Keryn Louise Taylor, Tracey Joy Weiland, George Alexander Jelinek

Published: February 2023

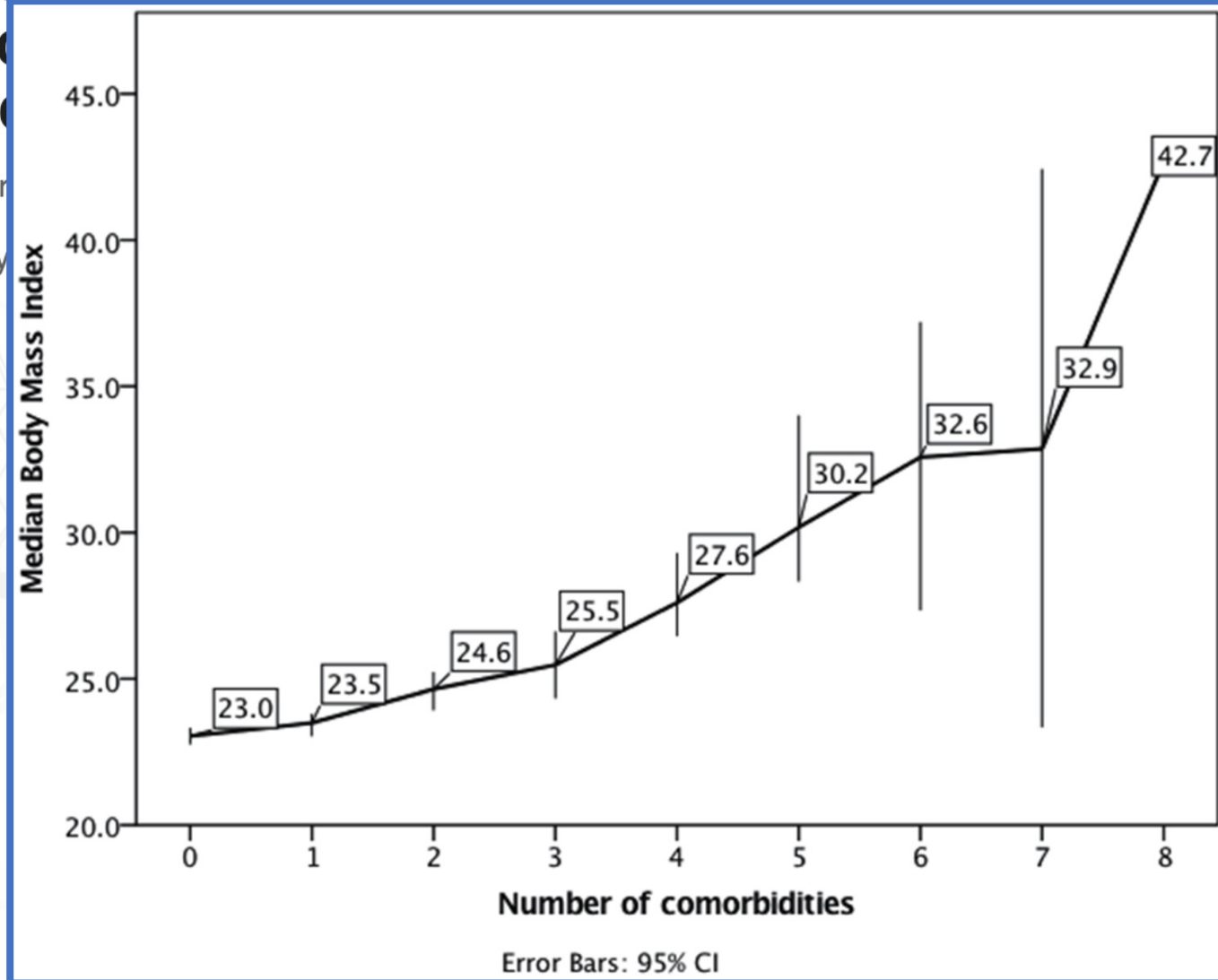


# Prevalence of Comorbidities. Overweight and Obesity in an International Association

Claudia Helena Mar

Published: February

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# Prevalence of Comorbidities, Overweight and Obesity in an International Sample of People with Multiple Sclerosis and Associations with Modifiable Lifestyle Factors

Claudia Helena Merck, Sandra Leanne Nestor, Karen Louise Taylor, Tracey Jay Weiland, George Alexander Jalinski

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Health outcomes for PwMS in our sample were better for those with lower BMI. Our data showed that overweight and obese PwMS reported lower mental and physical health HRQOL compared to those with normal weight while controlling for age, gender and level of disability and number of comorbidities. However, only obesity was associated with a clinically significant decrease of >5 points in physical HRQOL. A very small proportion in our sample was underweight (4.2%), and there were no differences in HRQOL from those with normal weight. Spanish data has shown that overweight PwMS had lower general and mental health scores compared to those with normal weight, however did not distinguish between overweight and obese, and found no differences in other quality of life scales of the SF-36, possibly due to the small number of people in the study[28]. Another study showed that obese PwMS scored lower on several QOL domains compared with non-obese PwMS but this study did not distinguish between overweight and normal weight[29]. In the general population, both underweight and obese people report lower QOL scores[30].



# Prevalence of Comorbidities, Overweight and Obesity in an International Sample of People with Multiple Sclerosis and Associations with Modifiable Lifestyle Factors

Claudia H

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The relationship between weight, comorbidities and MS health outcomes is complex and difficult to disentangle and is likely to be affected by adverse health behaviors. Adjusted regression analysis showed that being overweight, obese or a former or current smoker were associated with an increase in the number of comorbidities; while healthy diet, physical activity (borderline significant) and moderate alcohol consumption were associated with decreased number of comorbidities. While we are unable to draw conclusions on the temporality or causality of these associations, due to the design of the study, these results suggest that further studies should assess these variables over time to elucidate causality. These relationships between healthy lifestyle, obesity and comorbidities may be expected, however, the impact of increasing risk of comorbidities may be of greater significance in PwMS who are already at risk of developing progressive physical disability. And while obesity and comorbidities including back pain, depression and anxiety may lead directly to decreased quality of life, obesity may also interfere with health and wellbeing indirectly through decreased physical activity<sup>[42]</sup> and quality of sleep<sup>[43]</sup>. Preventing or treating comorbidities and obesity in PwMS should be an important goal in MS management<sup>[44]</sup>. Advice regarding healthy lifestyle including diet<sup>[19]</sup>, smoking<sup>[20, 45]</sup>, and physical activity<sup>[18, 42]</sup> may be helpful in decreasing the risk for comorbidity, as well as improving health and wellbeing in its own right<sup>[46]</sup>.

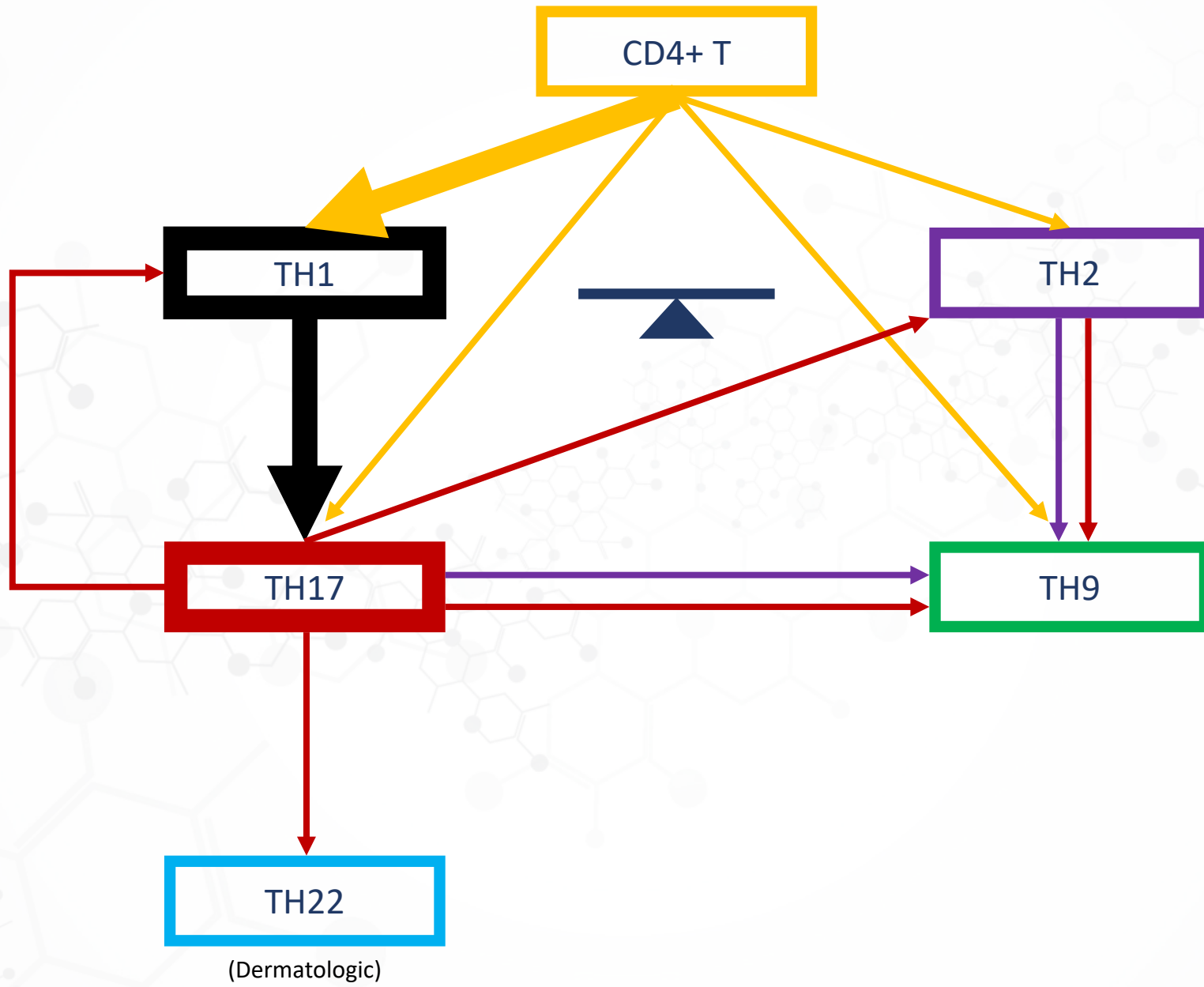


Check the viewpoint.

Are we questioning the right thing?

Are we targeting the correct enemy?





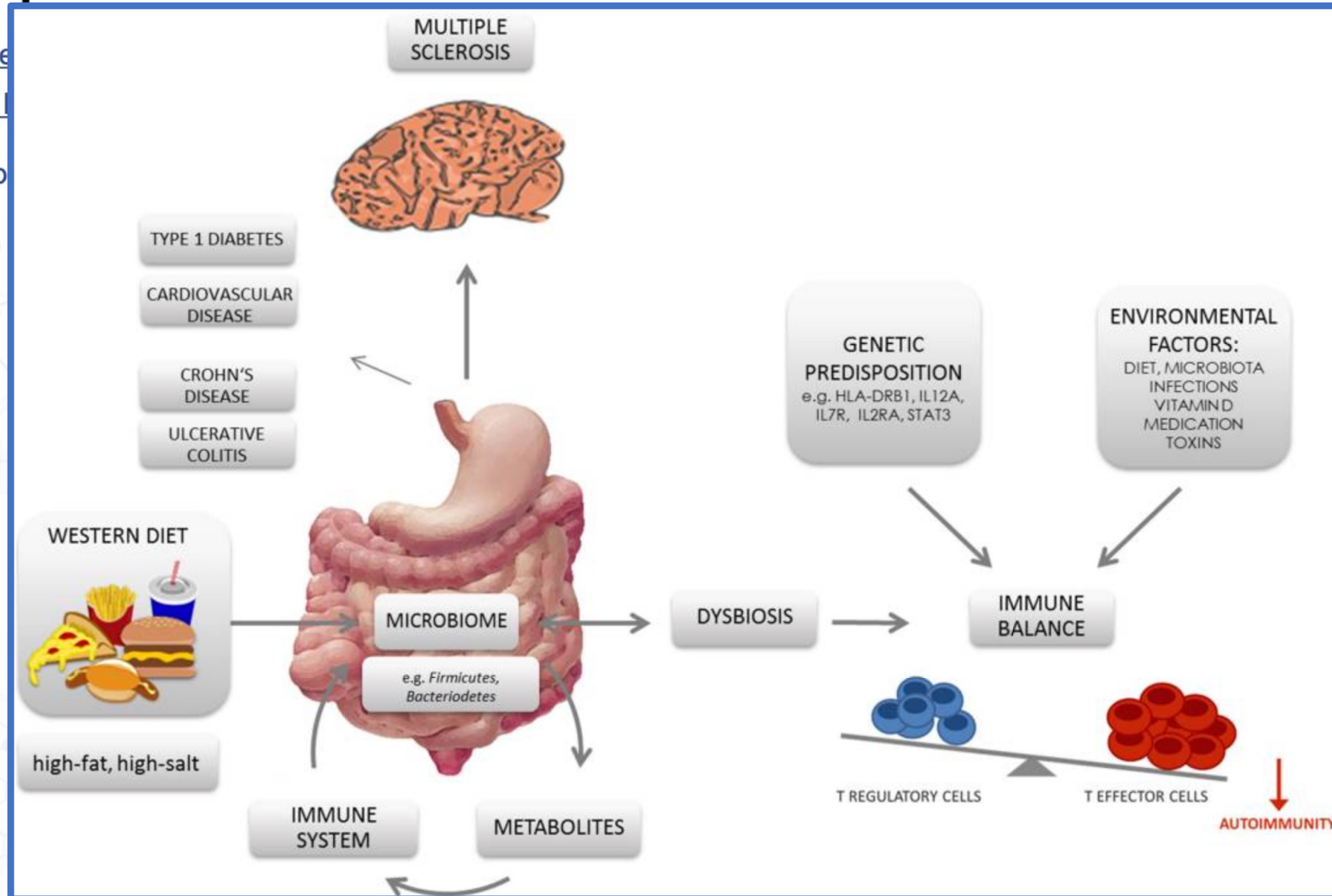


## Environmental factors in autoimmune diseases and their role in multiple sclerosis

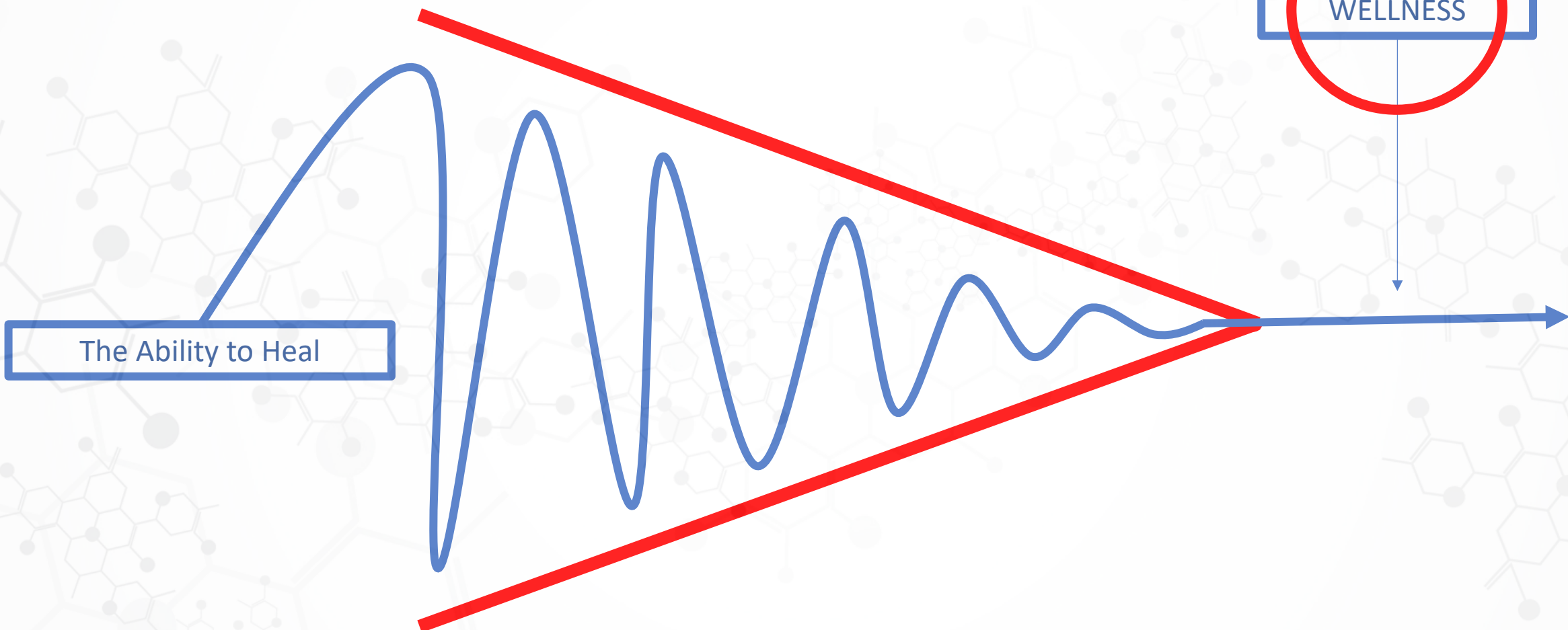
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# Building Protocols



The Ability to Heal

WELLNESS



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