



Effects of vitamin D and body mass index on relapse hazard in multiple sclerosis

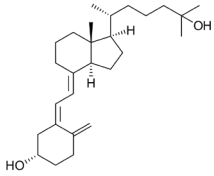
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Environmental/lifestyle risk factors in MS



Low levels
25-hydroxyvitamin D₃



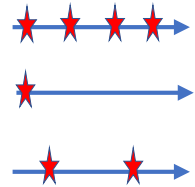
Obesity



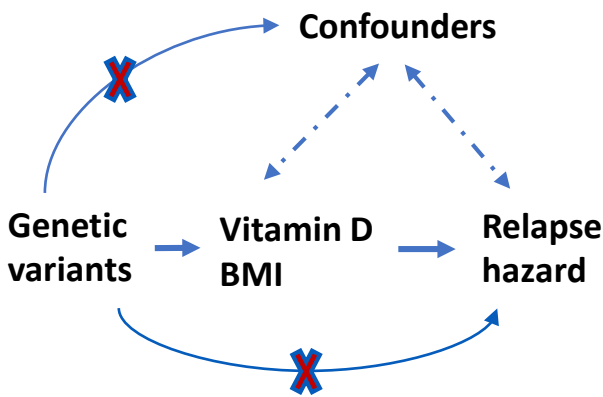
Effects on relapse hazard in MS?



★ relapse



Methodology: Mendelian randomization



Instrumental variables for two-sample MR

Exposure	Outcome	SNPs
25-hydroxyvitamin D₃ Jiang X et al. Nat Commun 2018	Relapse hazard Vandeborgh M et al. Ann Neurol 2021	6
25-hydroxyvitamin D₃ Revez JA et al. Nat Commun 2020		103
Body mass index (BMI) Yengo L et al. Hum Mol Genet 2019		606

Our Mendelian randomization analyses indicate a causal role of genetically predicted vitamin D in relapse hazard, with higher levels of vitamin D being protective.

Exposure	N SNPs	HR	95% CI	P Value
Vitamin D				
Jiang et al. 2018	6	0.21	0.05-0.83	0.025
Revez et al. 2020	103	0.57	0.39-0.85	0.006
Body mass index				
Yengo et al. 2018	606	0.88	0.63-1.23	0.453

Hazard ratio for relapse (95% CI)
 per genetically predicted increase in exposure

Genetically predicted 25-hydroxyvitamin D₃ levels decrease the hazard of a relapse occurring with 40%-80%. In contrast, there is no evidence of a causal effect of body mass index on relapse hazard in multiple sclerosis.