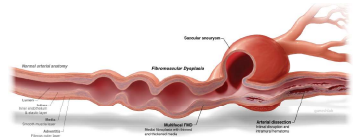


# Does Fibromuscular Dysplasia Cause Chronic Kidney Disease? A Two-Sample Mendelian Randomization Study

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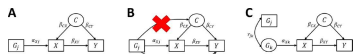
## Introduction

Fibromuscular dysplasia (FMD) is a systemic disease of artery walls that decreases target organ perfusion. Approximately 90% of FMD cases are women. Investigators have identified chronic kidney disease (CKD) as a possible consequence.



- FMD often affects renal arteries [Oli+12].
- FMD complications include stroke, dissection, & aneurysm [Oli+12].

## Mendelian Randomization



[Lee+22]

## CKD GWAS [18]

- 194,174 female UK Biobank subjects [Byc+18]



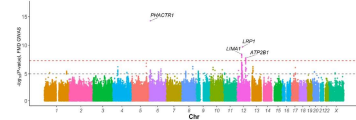
We failed to detect a causal effect of FMD on CKD. However, due to the small FMD GWAS sample size, we had limited power.



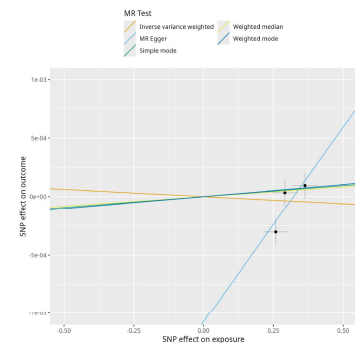
Take a picture to visit the Github repository

## FMD GWAS Meta-analysis [Geo+21]

- Six case-control studies from USA and Europe
- 1556 cases & 7100 controls
- Tested 5.5 million SNPs
- Identified four risk loci for FMD: *PHACTR1*, *LRP1*, *LIMA1*, *ATP2B1*



## MR Results



## Conclusion

- No MR evidence that FMD causes CKD
- Larger FMD GWAS needed

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## References

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