

Review of: "The Rural-Urban Divide: Insights from Immuno-Genetic Profiles and Implications for Health"

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Potential competing interests: No potential competing interests to declare.

The paper effectively elucidates the genetic and immunological underpinnings of rural-urban health disparities, offering a unique perspective on the role of environmental and lifestyle factors in disease etiology. Despite limitations, its insights are valuable for public health and biomedical research, particularly in the context of global health transitions. Future studies addressing methodological constraints and expanding the geographic scope would further solidify its contributions to understanding and mitigating health inequities.

Limitations and Future Directions:

1. Incorporating proteomics, metabolomics, and microbiome analyses would provide a more comprehensive picture of the rural-urban divide.
2. Tracking rural populations undergoing urbanization would reveal dynamic changes in health and gene expression profiles over time.
3. Expanding research to other regions would contextualize findings and highlight universal versus region-specific trends.
4. Detailed investigations into specific gene-environment interactions are crucial for dissecting causal mechanisms.
5. Testing targeted health interventions based on findings (e.g., microbiome modulation) could validate causal pathways and inform policy.