**Cardiovascular, Cancer, and Infectious Disease Research: Three Decades of Epidemiological Evidence from the VHM&PP Study**

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**Abstract**

**Introduction:** This presentation will first introduce the EpiCenter Innsbruck at the Medical University of Innsbruck, that conducts population health research in cardiovascular disease, cancer, and infectious disease. Our methodological portfolio includes epidemiological and statistical approaches, causal inference techniques with emphasis on mediation analyses, and more recent expansion to AI-based prediction methods.

**Data Sources:** Our analyses utilize several clinical trials and epidemiological studies, primarily the Bruneck Study and the Vorarlberg Health Monitoring and Promotion Programme (VHM&PP).

**Research Overview:** This presentation covers selected studies conducted with the VHM&PP dataset. These studies include examinations of long-term tracking patterns of cardiovascular risk factors and documentation of secular and temporal trends in these factors over time. Our investigations of gamma-glutamyltransferase and uric acid have contributed to understanding CVD mortality risk, alongside analyses of sex-specific patterns in CVD risk factors and outcomes. Through mediation analyses, we have estimated direct and indirect effects of CVD risk factors on mortality. Similar analytical approaches were applied to cancer incidence and mortality outcomes. As part of the international Me-Can consortium, we contributed to research on metabolic syndrome and cancer. Recent work has addressed obesity-related cancer, comparing metabolically healthy and unhealthy obese individuals, providing insights into the heterogeneity of obesity phenotypes. Additional studies examined the TYG index in chronic kidney disease and, during the pandemic, we investigated the relationship between long-term body mass index and COVID-19-related intensive care requirements.

**Conclusion:** This body of work demonstrates the value of long-term population-based cohorts in characterizing disease patterns and advancing our understanding of modifiable risk factors.