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Overlapping patterns and unique differences: a study into immunological variation within and between populations

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Overlapping patterns and unique differences

A study into immunological variation within and between populations

1. Even within a single urban center differences in the immune system can be detected among children with different socio-economic backgrounds (*this thesis*)
2. By using minimally invasive sample collection methods that require few laboratory facilities, differences in the immune system can be studied in a standardized way in LMICs (*this thesis*)
3. Environmental and lifestyle factors greatly impact the immune system as differences in immune profiles are observed among population in relation to rural/urban residency, lifestyle score and socioeconomic status (SES) (*this thesis*)
4. Harmonization of studies across geographical areas is challenging but crucial to elucidate vaccine hyporesponsiveness (*this thesis*)
5. Dietary transition towards more westernized diets due to urbanization induces a pro-inflammatory immune phenotype and impacts the key metabolic pathways that are linked to non-communicable diseases (*Temba GS. et al. Nature Medicine 2025*)
6. Modelling of the human immune responses *in vitro* by employing a tonsillar organoid system model enables studying interindividual variability and provide a deeper understanding of the immunological variation (*Wagoner et al. Cell Stem Cell 2024*)
7. Baseline immune signatures that are predictive for the vaccine response enables identification of targets to be modulated before vaccination to improve vaccination response (*Tsang et al. Trends in Immunology 2020*)
8. System biological approaches holds a great potential to accelerate vaccine research and development, as by using these approached predictors and mechanisms of durable vaccine responses can be uncovered (*Cortese et al. Nature Immunology 2025*)
9. For collaborations across countries and cultures it is true that if you want to go fast, you should go alone, but if you want to go far, the only way is to go together (*African proverb*)
10. Op het moment dat alle voor de hand liggende oplossingen uitgeput lijken, helpt het om te denken “zo niet, dan toch” (*Nederlands gezegde*)