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Branched-chain amino acids and trimethylamine N-oxide as biomarkers of cardiometabolic outcomes

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Propositions Belonging to the PhD thesis

**Branched-Chain Amino Acids and Trimethylamine N-oxide
as Biomarkers of Cardiometabolic Outcomes**

José Luis Flores Guerrero

1. Higher plasma concentrations of BCAA are associated with an elevated risk of incident type 2 diabetes, independently of traditional risk factors and insulin resistance. *This thesis.*
2. Higher plasma concentrations of BCAA are associated with an elevated risk of hypertension, independently of traditional risk factors and renal function. *This thesis.*
3. A multimarker which integrates branched-chain amino acids and lipoproteins subfractions improves the risk assessment for type 2 diabetes and hypertension. *This thesis.*
4. Trimethylamine-N-oxide plasma concentrations are associated with higher mortality risk in patients with type 2 diabetes and non-alcoholic fatty liver disease. *This thesis.*
5. Plasma concentrations of trimethylamine-N-oxide are associated with higher risk of graft failure in renal transplant recipients. *This thesis.*
6. The Mahalanobis distance of circulating biomarkers represents a measure of homeostasis loss that occurs before the onset of type 2 diabetes. *This thesis.*
7. We are not making science for science. We are making science for the benefit of humanity. *Françoise Barré-Sinoussi.*
8. Observational studies are an interesting and challenging field which demands a good deal of humility, since we can claim only to be groping toward the truth. *William Cochran.*
9. Borders are man-made fictions; inequality is a man-made reality for millions. *Lyndsey Stonebridge.*
10. Calculus is fundamentally naive, almost childish in its optimism... change can be sudden, discontinuous, and wrenching. Calculus draws its power by refusing to see that. *Steven Strogatz.*
11. Like the flower that blooms to unveil the heart that is not there. *Alejandra Pizarnik.*
12. There is another world but it is this one. *Paul Éluard.*
13. Ik'il u ka'h ka' kuxtal (it is the wind, our life).