# Tuberculosis & type 2 diabetes
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**Stellingen behorende bij het proefschrift getiteld "Tuberculosis & Type 2 Diabetes"**
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1. Hyperglycemia cannot fully explain the increased susceptibility to *Mycobacterium tuberculosis* (*Mtb*) in diabetes (DM) patients (from a macrophage point-of-view). (this thesis)

2. The pro-atherogenic phenotype of tuberculosis (TB)-DM patients could contribute to TB susceptibility or reactivation. (this thesis)

3. Oxidized low-density lipoprotein (oxLDL) treatment of human macrophages supports *Mtb* intracellular survival as a result of lysosomal dysfunction, providing a proof of concept for a contribution of increased levels of oxLDL as a potential risk factor for TB development during DM. (this thesis)

4. TB and TB-DM are associated with marked changes in plasma levels of amine metabolites, which normalize during anti-TB therapy. (this thesis)

5. Accelerated foam cell biogenesis during TB-DM could support both primary *Mtb* infection by interfering with mycobacterial growth inhibition and promote (future) reactivation by providing a nutritionally rich niche for replication.

6. Future prospective studies should elucidate whether pharmacological normalization of blood lipid levels can reduce the risk of DM patients to develop active TB, or lead to improved TB and TB-DM treatment outcomes when given in conjunction with standard antibiotic regimens.

7. To effectively utilize potential diagnostic or predictive metabolic biomarker signatures for TB or TB-DM in clinical or field settings, current methodologies for quantification of these metabolites will have to be translated to user-friendly tests.

8. Metabolomics studies on TB-DM will need to advance from cross-sectional to prospective patient cohorts to substantiate a possible causal role of specific metabolites for TB-DM development.

9. There is nothing wrong with using a reductionist model as an entry point for studying complex chronic diseases. However, always keep the following in mind:

$$\left( \frac{\int [x^2 - \varepsilon \lim_{n\to\infty}\left(1+\frac{[Proteins]}{n}\right)^n] \triangleq \varphi \cdot {}_1^n Y}{\sqrt[{[Epigenetics]}]{[Genetics]\times\vec{\pi}} \div \frac{-b\pm\sqrt{b^2-4ac}}{2e^{-i\omega-[Time]}}} \right. $$
$$\left. \frac{}{\sum\frac{\Delta y}{\Delta x} \cap [pH] \Big/ \sqrt[3]{37°C} + \left(\frac{[Training]}{6{,}02214076\times10^{23}}\right)} \right) + [A\ ton\ of\ glucose] \neq Diabetes$$

10. The following quote holds words to live by when dealing with ever failing experiments: "*Laughter and tears are both responses to frustration and exhaustion, to the futility of thinking and striving anymore. I myself prefer to laugh, since there is less cleaning up to do afterward.*" (Kurt Vonnegut, Palm Sunday: An Autobiographical Collage, 1981)