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## Genetics and epidemiology of glaucoma and myopia

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## Propositions accompanying the thesis

### **Genetics and epidemiology of glaucoma and myopia**

1. Glaucoma and its related endophenotypes (e.g. intraocular pressure and central corneal thickness) are largely influenced by genetic factors. (This thesis)
2. Age, ethnicity, and study design are the major sources of heterogeneity in glaucoma-related endophenotype heritability studies.
3. There is an inverse relationship between age and heritability, indicating that glaucoma-related endophenotypes are increasingly influenced by environmental factors later in life. (This thesis)
4. Post-GWAS (genome-wide association analysis) bioinformatic analysis of glaucoma candidate genes prioritized 142 most likely associated genes suggesting that these genes are involved in glaucoma development by multiple mechanisms including coding, transcription, and manipulation of targeted gene expression. (This thesis)
5. Extracellular matrix (ECM), transforming growth factor beta (TGF- $\beta$ ) signaling, cardiovascular and blood vessel development, and the retinoic acid receptor signaling pathways are the most overrepresented pathways in glaucoma pathogenesis. (This thesis)
6. Autonomic dysfunction, represented by heart rate variability, has a negative relationship with glaucoma, whereas blood pressure-related measurements, including hypertension, and antihypertensive medication use (especially angiotensin-converting enzyme inhibitors and calcium-channel blockers), have a positive association with glaucoma prevalence. (This thesis)
7. A set of self-administered refractive error-related questions could be used as an effective tool to capture proxy-inferred myopic cases in a population-based setting. (This thesis)
8. Tell me and I forget. Teach me and I remember. Involve me and I learn. *Benjamin Franklin*
9. Be the reason someone smiles. Be the reason someone feels loved and believes in the goodness in people. *Roy T. Bennett*
10. When you live on a round planet, there is no choosing sides. *Wayne W. Dyer*