

### Genetics and life course epidemiology of cardiometabolic disease: towards personalized medicine

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#### Stellingen behorende bij het proefschift getiteld

### "GENETICS AND LIFE COURSE EPIDEMIOLOGY OF CARDIOMETABOLIC DISEASE : TOWARDS PERSONALIZED MEDICINE"

- 1- Pharmacological modulation of the genes associated with fasting triglycerides suffices to lower both fasting and postprandial triglyceride concentrations. (This thesis, Chapter 2)
- 2- Addressing multiple targets to lower triglyceride levels is more beneficial than selecting one target for coronary artery disease prevention. (This thesis, Chapter 3 & 4)
- 3- Since age-dependent effects of genetic variants are not well described, conclusions based on MR analyses for the population as a whole need to be interpreted with caution. (This thesis, Chapter 6)
- 4- Although the bodyweight trajectories of recent Dutch generations are evidence of a more obesogenic environment, this environment apparently sets a country-specific upper limit for body weight increase over the life course. (This thesis, Chapter 5)
- 5- Interventions that target the whole population should be the first step in cardiometabolic disease prevention. (This thesis, Chapter 5)
- 6- Genetic variants of *LPL* gene and its modulators should be incorporated into nutritional interventions for overweight and obese individuals.

(de Luis Roman D, Primo D, Izaola O, Aller R. Association of the APOA-5 Genetic Variant rs662799 with Metabolic Changes after an Intervention for 9 Months with a Low-Calorie Diet with a Mediterranean Profile. *Nutrients*. 2022;14(12):2427).

7. Cholesterol-lowering or triglyceride-lowering interventions that are not accompanied by commensurate changes in apolipoprotein B should not be considered for coronary artery disease prevention.

(Richardson TG, Sanderson E, Palmer TM, et al. Evaluating the relationship between circulating lipoprotein lipids and apolipoproteins with risk of coronary heart disease: A multivariable Mendelian randomisation analysis. *PLoS Med.* 2020;17(3):e1003062).

## 8- A healthy lifestyle reduces the risk of obesity even in those that are genetically predisposed.

(Chermon D, Birk R.*FTO*Common Obesity SNPs Interact with Actionable Environmental Factors: Physical Activity, Sugar-Sweetened Beverages and Wine Consumption.*Nutrients*. 2022;14(19):4202).

# 9- Strategies for cardiovascular disease treatment and prevention should not be the same for all age groups.

(Simino J, Shi G, Bis JC, et al. Gene-age interactions in blood pressure regulation: a large-scale investigation with the CHARGE, Global BPgen, and ICBP Consortia. *Am J Hum Genet*. 2014;95(1):24-38).

#### 10- Chocolate consumption helps life immediately and on the long term.

(DC, Zhang DD, Liu XJ, Zhang RY, Sun HH, Liu FY, Chen X, Cheng C, Liu LL, Zhou QG, Zhang M, Hu DS. Chocolate consumption and risk of cardiovascular diseases: a meta-analysis of prospective studies. *Heart*. 2019;105:49-55).