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I received my PhD at the University of Lille in 2003 and became a post-doctoral fellow at the University of Toronto. I then joined Inserm in 2008 as an Associate research Professor and became a Research Director in 2018.

We focus our research on the link between the biological clock and cardiometabolic diseases. It has long been known that the biological clock plays a crucial role in various aspects of physiology ranging circadian rhythms in sleep patterns, blood pressure and immune response to metabolism. Disruptions of the clock caused by shift work, frequent jet lag, exposure to light at night and night-time eating increase the risk of developing metabolic (obesity, dyslipidemia, type 2 diabetes, NAFLD), inflammatory and cardiovascular (atherosclerosis, myocardial infarction) disorders. Focusing on the nuclear receptors and clock components Rev-erbs, we have demonstrated that the Rev-erbs controls the circadian expression/activation of genes and proteins involved in hepatic lipid and bile acid metabolism, muscle mass and mitochondrial function, in macrophage response to DAMPs through the control of NLRP3 and is important the the myocardial response to ischemia/reperfusion injury.

Clock perturbations as a common contributor to NAFLD, dyslipidemia and atherosclerosis

Non-alcoholic fatty liver disease (NAFLD) is rapidly becoming a global health problem. NAFLD is associated with a greater risk of cardiovascular disease (CVD). NAFLD and CVD share several common risk factors including obesity, insulin resistance and type 2, as well as atherogenic dyslipidemia (ie increased triglycerides and sdLDL, low HDL-cholestrol levels). In addition, (metabolic) inflammation is a common feature/driver of NAFLD and CVD. The biological generates circadian rhythms in various aspects of physiology, including (hepatic) lipid metabolism and inflammatory pathways. Disruptions of the clock caused by shift work, frequent jet lag, exposure to light at night and night-time eating increase the risk of developing metabolic (obesity, dyslipidemia, type 2 diabetes, NAFLD), inflammatory and cardiovascular (atherosclerosis, myocardial infarction) disorders. Thus, clock alterations may be seen as a common contributor to NAFLD and CVD.