We are conducting research projects in the field of the developmental origins of adult health and disease (DOHaD), with a particular attention to the intrauterine growth restriction (IUGR) and perinatal hypoxia.

Adverse events occurring in utero or soon after birth could induce long-term adverse effects, thus increasing the risk to develop chronic diseases in adulthood. For example, individuals born after IUGR have an increased risk to develop cardiovascular and metabolic diseases later in life.

Our research projects aim to better understand cellular and molecular mechanisms implicated in the developmental programming of pathological responses, in order to identify early biomarkers and to design novel therapeutic strategies and/or preventive interventions.

Our projects include investigations of vascular reactivity, performed using isolated vascular rings in organ chambers, with a particular attention to the nitric oxide (NO)/cyclic GMP relaxing pathway. Our experiments aim to identify vascular dysfunctions, and the related mechanisms, both in the endothelium and smooth muscle.

Finally, we pay a particular attention to the sexual dimorphism in the observed alterations. Indeed, sex is an important biological factor, which has been often neglected. However, there is increasing evidence that males and females display important differences in physiological responses and susceptibility to diseases, in particular in the field of cardiovascular diseases. Our research team observed several differences in vascular physiology and pathology dep ending on the sex of the individual.