## Contents

**Chapter 1**: General Introduction and Outline of the Thesis 9

**Chapter 2**: The Involvement of Perivascular Adipose Tissue in Obesity-Associated Microvascular Dysfunction and Insulin Resistance 17

**Chapter 3a**: Insulin-induced Microvascular Recruitment in Skin and Muscle are Related and Both are Associated With Whole Body Glucose Uptake 67

**Chapter 3b**: Phenotyping the Microcirculation with Contrast-Enhanced Ultrasound 87

**Chapter 4**: Perivascular Adipose Tissue Control of Insulin-Induced Vasoreactivity in Muscle is Impaired in db/db Mice 91

**Chapter 5**: AMPK Regulates Microvascular Perfusion and Insulin-Induced Microvascular Recruitment Through Control Over eNOS and Endothelin-1 117

**Chapter 6**: Bone Marrow-Derived JNK2-Positive Cells in Perivascular Adipose Tissue Blunt Microvascular Insulin-Induced Vasodilation Early During Nutrient Excess 143

**Chapter 7**: Insulin-Induced Changes in Skeletal Muscle Microvascular Perfusion are Regulated by Perivascular Adipose Tissue in Women 169

**Chapter 8**: Discussion 191

**Summary** 219

**Nederlandse samenvatting** 225
List of Publications 233

List of author affiliations 237

Biografie/Biography 241

Dankwoord/Acknowledgments 245