

# PREVALENCE OF $\beta$ -2 RECEPTOR POLYMORPHISM AND RELATIONSHIP OF THIS POLYMORPHISM TO MODEL ASSESSING MACROVASCULAR ENDOTHELIAL FUNCTION



**CURRENT STATUS OF PROJECT:** Ongoing

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## INTRODUCTION

The assessment of endothelial function as a determinant of cardiovascular health is becoming more important, as endothelial dysfunction has been shown to be a marker of cardiovascular prognosis. Over the years, endothelial function assessments are achieved via numerous means, for example venous occlusion plethysmography or brachial artery flow mediated dilatation. They are however either operator dependent or are tedious which make them unsuitable to be used either clinically or in large population studies. Recently, pulse wave analysis which is simple, non-invasive and reproducible has been shown to be a promising method in assessing endothelial function. Before it is widely used however, it need to be determined if genetic polymorphism, in particular  $\beta_2$ -receptor polymorphism may affect its measurements.

## OBJECTIVES

1. To determine the prevalence of  $\beta_2$  receptor polymorphism in our population.
2. To determine if this polymorphism affect the model used in assessing macrovascular endothelial function.

## METHODOLOGY

Study Design: Cross-sectional study.

Study Population: This study will involve 400 healthy volunteers.

Study Protocol:

Clinical Clinical part of the study involves measurement of endothelial function by using Sphygmocor combined with pharmacological challenge, i.e. sublingual GTN and Salbutamol.

Genotyping  $\beta_2$  receptor polymorphisms to be studied are Arg16/Gly, Gln27/Glu and Thr164/Ile. The proposed method to be optimised is Allele Specific Multiplex PCR which was developed and published by Romaino *et al.*

Expected outcome:  $\beta_2$  polymorphism may affect model assessing macrovascular endothelial function.