# Important parts Thesis Ruben Deneer

**Introduction**

It has become clear that bariatric surgery has a positive effect that extends beyond weight loss and includes improvement in diabetes, hypertension, dyslipidemia and reduction of overall mortality

there is no uniform definition of how patients are identified as having co-morbidities

to use data mining techniques to develop a score that can objectively quantify the severity of co-morbidities present in bariatric patients based on biomarkers, both before and after surgery

However, in this study the goal is not to predict the pre-operative probability of remission but to quantify the severity of co-morbidities and monitor improvement in a patient before and after surgery.

**Background**

There are different types of bariatric surgery but this study is limited to primary gastric sleeve (SG) and gastric bypass (RYGB) surgery

Initially SG was labeled as a restrictive procedure because the weight loss was attributed to a reduction in stomach size. However, it later became apparent that modifications of gastrointestinal hormones play a significant role.

In similar fashion to SG, RYGB also has a beneficial effect on co-morbidities.

To assess the metabolic health of patients before and after bariatric surgery, the Catharina Hospital in Eindhoven makes use of an extensive bariatric laboratory panel. This panel includes blood tests with markers related to complete blood count, kidney function, liver function, inflammation, lipid spectrum, coagulation, glucose metabolism, thyroid function, mineral and vitamin status

Both diabetes and dyslipidemia can be diagnosed from the results of the markers contained in the glucose metabolism and lipid spectrum sub-panels, respectively.

From literature, evidence was found to conclude that hypertension can be observed from changes in several biomarkers (i.e. leukocytes, CRP, urea, GGT, etc.) contained in the bariatric lab panel.