

**Effects of bariatric surgery (Sleeve
Gastrectomy) on serum visfatin level and
insulin resistance in obese diabetic and
obese non diabetic cases**

Thesis

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List of Abbreviations

Abb.	Full term
ADA	American Diabetes Association
AHA	American Heart Assotiation
AHI	Apnea Hypopnea Index
AIDS	Acquired immune deficiency syndrome
ALI	Acute lung Injury
ALT	Alanine aminotransferase
AST	Aspartate aminotransferase
BMI	Body mass index
BPD	Biliopancreatic diversion
BPD DS	Biliopancreatic diversion with duodenal switch
CAD	Coronary artery disease
CCK	Cholecystokinin
CHD	Coronary heart disease
Chol	Cholesterol
CKD	Chronic kidney disease
CNS	Central Nervous System
CT	Computerized Axial tomography
CVD	Cardio vascular disease
DJBS	Duodenal-Jejunal bypass sleeve
DM	Diabetes Mellitus
EBWL	Excess body weight loss
ELISA	Enzyme liked Immunoassay
EWL	Excess weight loss
FFAs	Free fatty acids
FPG	Fasting plasma glucose
GAD	Glutamic acid decaroxylase
GDM	Gestational diabetes

List of Abbreviations

Abb.	Full term
GERD	Gastroesophageal Reflux Disease
GF	Growth factor
GFR	Glomerular filtration rate
GH	Growth hormone
GIP	Gastric inhibitory polypeptide
GLP-1	Glucagon-like peptide 1
GLUT	Glucose transporters
HAART	Highly Active Antiviral Therapy
HbA1c	Hemoglobin A1c
HDL	High density lipoprotein
HIF-1	Hypoxia inducible factor-1
HNF1A	Hepatocyte nuclear factor 1 alpha
HOMA	Homeostasis model assessment
HOMA-IR	Homeostasis model assessment of insulin resistance
IAA	Insulin antibodies
ICA	Islet cell cytoplasm antibodies
IFG	Impaired fasting glucose.
IGS	Implantable gastric stimulator
IGT	Impaired glucose tolerance
IL	Interleukin
IPF	Insulin promoter factor
IR	Insulin Resistance
IRS	Insulin receptor Substrate
LADA	Latent autoimmune diabetes in adults
LAGB	Laparoscopic adjustable gastric banding
LDH	Lactate dehydrogenase
LDL	Low density lipoprotein
LES	Lower esophageal sphincter
LSG	Laparoscopic sleeve gastrectomy

List of Abbreviations

Abb.	Full term
MCP-1	Monocyte chemoattractant protein 1
MODY	Maturity onset diabetes of the young
NADH	Reduced β -nicotinamide adenine dinucleotide
NAFLD	Non Alcoholic fatty liver disease
Nampt	Nicotine amide phosphoribosyl transferase
NASH	Non alcoholic steatohepatitis
NGF	Nerve growth factor
NIDDM	Non insulin dependent diabetes mellitus
NIH	National Institutes of Health
Ob	Obese gene
OGTT	Oral glucose tolerance test
OSA	Obstructive Sleep Apnea
PAI-1	Plasminogen activator inhibitor type-1
PAPR	Peroxisome Proliferators Activator Receptor
PBEF	Pre Beta Colony Enhancing Factor
PCOS	Polycystic ovary syndrome
PI	Phosphatidylinositol
QUICKI	Quantitative insulin sensitivity check index
RBP-4	Retinol-binding protein-4
RCT	Randomized Control Trial
RIA	Radioimmunoassay
RNS	Reactive Nitrogen Species
ROS	Reactive oxygen species
RYGB	Roux-en-Y-Gastric bypass
SC	Subcutaneous
SFT	Skin fold thickness
SOS	Swedish Obese Subjects
SPARC	Secreted protein acidic and rich in cysteine
TCF7L2	Transcription factor 7-like 2

☞ List of Abbreviations ☜

Abb.	Full term
TGs	Triglycerides
THP-1	Human acute monocytic leukemia cell line
TNF-α	Tumor necrosis factor alpha
TZDS	Thiazolidinediones
Vaspin	Visceral adipose tissue-derived serpin
VAT	Visceral adipose tissue
VBG	Vertical banded gastroplasty
VF	Visfatin
VTE	Venous thromboembolism
WAT	White adipose tissues
WC	Waist circumference
WHO	World Health Organization
WHR	Waist hip ratio

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Introduction

Adipose tissue, apart from its classical role as an energy storage depot, is also a major endocrine organ that secretes many biologically active factors, whose local and circulating levels are affected by the degree of adiposity (*Terra et al., 2013*).

In obese individuals, adipose tissue releases increased amounts of hormones, pro-inflammatory cytokines and other factors that are involved in the development of insulin resistance which is accompanied by dysfunction of pancreatic islet β -cells with failure to control blood glucose levels increasing the risk and development of type 2 diabetes (*Khan et al., 2006*).

Visfatin is a recent described adipokine that is highly expressed in visceral fat and localized to the blood stream and has various functions, including the activation of insulin receptor and has insulin mimetic effects, lowering blood glucose and improving insulin sensitivity (*Rongvaux et al., 2010*).

Bariatric surgery is an effective treatment for obesity (*Magee et al., 2011*). Patients tend to lose weight rapidly after surgery, with a negative energy balance in the first few weeks (*Czupryniak et al., 2007*).

Laparoscopic Sleeve Gastrectomy is a technically less complex surgical procedure which is promising for the treatment of obesity and type 2 Diabetes Mellitus (*Zimmet and Alberti, 2012*).

Increased plasma visfatin levels after weight loss surgeries indicate a role for visfatin in improved insulin sensitivity (*Botella et al., 2008*), yet in 2013 *Hosseinzadeh and coworkers* reported a decrease in serum visfatin levels after bariatric surgery induced weight reduction with no significant correlation between changes of visfatin, BMI, waist circumference, and insulin resistance and suggested Further studies to clarify these associations.