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## **Insulin resistance in obese patients with type 2 diabetes mellitus : effects of a very low calorie diet**

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**Insulin Resistance in Obese Patients  
with Type 2 Diabetes Mellitus:  
Effects of a Very Low Calorie Diet**

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**Insulin Resistance in Obese Patients  
with Type 2 Diabetes Mellitus:  
Effects of a Very Low Calorie Diet**

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## ABBREVIATIONS

Acrp	Complement-related protein 30
ADD1/SREBP	Adipocyte determination and differentiation factor/sterol regulatory element-binding protein
AgRP	Agouti-related protein
AMPK	Adenosine monophosphate kinase
aP2	Fatty-acid binding protein
apM1	Adipose most abundant gene transcript-1
ASBG	Adjustable silicone gastric banding
AS160	Akt substrate of 160 kD
ASP	Acylation-stimulating protein
ATP	Adenosine triphosphate
AUC	Area under the plasma concentration-time curve
BAT	Brown adipose tissue
bHLH	Basic helix-loop-helix
BIA	Bioelectrical impedance analysis
BMI	Body mass index
BPD	Biliopancreatic diversion
BSA	Body surface area
cAMP	Cyclic adenosine monophosphate
CART	Cocaine-amphetamine-related transcript
C/EBP	CCAAT (is piece of DNA)/enhancer-binding protein
CHD	Coronary heart disease
CNS	Central nervous system
COS cells	Monkey cells immortalised with simian V40 virus
CRH	Corticotropin-releasing hormone
CT-scan	Computer tomography scan
Cys	Cysteine
DAG	Diacylglycerol
DM	Diabetes mellitus
DNA	Deoxyribonucleic acid
EGP	Endogenous glucose production
ER	Energy restriction
FAS	Fatty acid synthase
FAT/CD36	Fatty acid transporter/CD36
FFA	Free fatty acids
FFM	Fat free mass
FIZZ	Found in inflammatory zone



## Abbreviations

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FPG	Fasting plasma glucose
GAP	GTP-ase activating protein
Gdp 28	Gelatin-binding protein
GH	Growth hormone
GLUT-4	Glucose transporter-4
G6Pase	Glucose-6-phosphatase
GS	Glycogen synthase
GSK-3	Glycogen synthase kinase-3
GTP	Guanosine triphosphate
HbA <sub>1c</sub>	Glycosylated haemoglobin
HDL	High density lipoprotein
HGO	Hepatic glucose output
HNF	Hepatic nuclear factor
IL-6	Interleukin-6
IMCL	Intramyocellular lipids
IRS	Insulin receptor substrate
JAK	Janus kinase
kD	Kilo Dalton
LBM	Lean body mass
LCFA	Long-chain fatty acids
LDL	Low density lipoprotein
M	Glucose metabolised
MCR <sub>i</sub>	Metabolic clearance rate of insulin
MODY	Maturity-onset diabetes of the young
mRNA	messenger-RNA (ribonucleic acid)
MRI	Magnetic resonance imaging
MRS	Magnetic resonance spectroscopy
α-MSH	Alpha-melanocyte-stimulating hormone
MW	Molecular weight
N	Nitrogen
NEFA(s)	Non-esterified fatty acid(s)
NMR	Nuclear magnetic resonance
NOGD	Non-oxidative glucose disposal
NPY	Neuropeptide Y
Ob-Rb	Long isoform of the leptin receptor
PDK-1	Phosphoinositide-dependent kinase-1
PEPCK	Phospho-enolpyruvate carboxykinase
PI3K	Phosphatidylinositol 3-kinase
PIP2	Phosphatidyl-inositol-3,4-biphosphate

PIP3	Phosphatidyl-inositol-3,4,5-triphosphate
PKB	Protein kinase B
PKC	Protein kinase C
POMC	Pro-opiomelanocortin
PPAR- $\gamma$	Peroxisome proliferator-activated receptor gamma
PRAS 40	Proline-rich Akt substrate of 40 kDA
PTEN	Phosphatase and tensin homologue
PTP1B	Protein tyrosine phosphatase 1B
$R_a$	Rate of appearance of a flux
$R_d$	Rate of disappearance of a flux
RELM	Resistin-like molecule
RIA	Radioimmuno assay
RR	Relative risk
RQ	Respiratory quotient
RXR	Retinoid X receptor
SD	Standard deviation
SEM	Standard error of the mean
SHIP	SH2-domain-containing inositol 5-phosphatase
STAT	Signal transducers and activators of transcription
TC	Total cholesterol
TG	Triglycerides
TNF- $\alpha$	Tumour necrosis factor alpha
TZD	Thiazolidinedione derivative
$\dot{U}co_2$	CO <sub>2</sub> production
$\dot{U}o_2$	O <sub>2</sub> consumption
VBG	Vertical banding gastroplasty
VLCD	Very low calorie diet
VLDL	Very low density lipoprotein
WAT	White adipose tissue
WHO	World health organization
WHR	Waist to hip ratio



*"Wie schrijft die blijft"*



Ter herinnering aan mijn moeder

*" Zij die menen zonder trainen kans te hebben op succes  
Oh die dommerds, oh die stommerds leren straks een harde les"*

Voor mijn vader

