METABOLIC SYNDROME

Prof.Dr.Nuray Arı, 2018

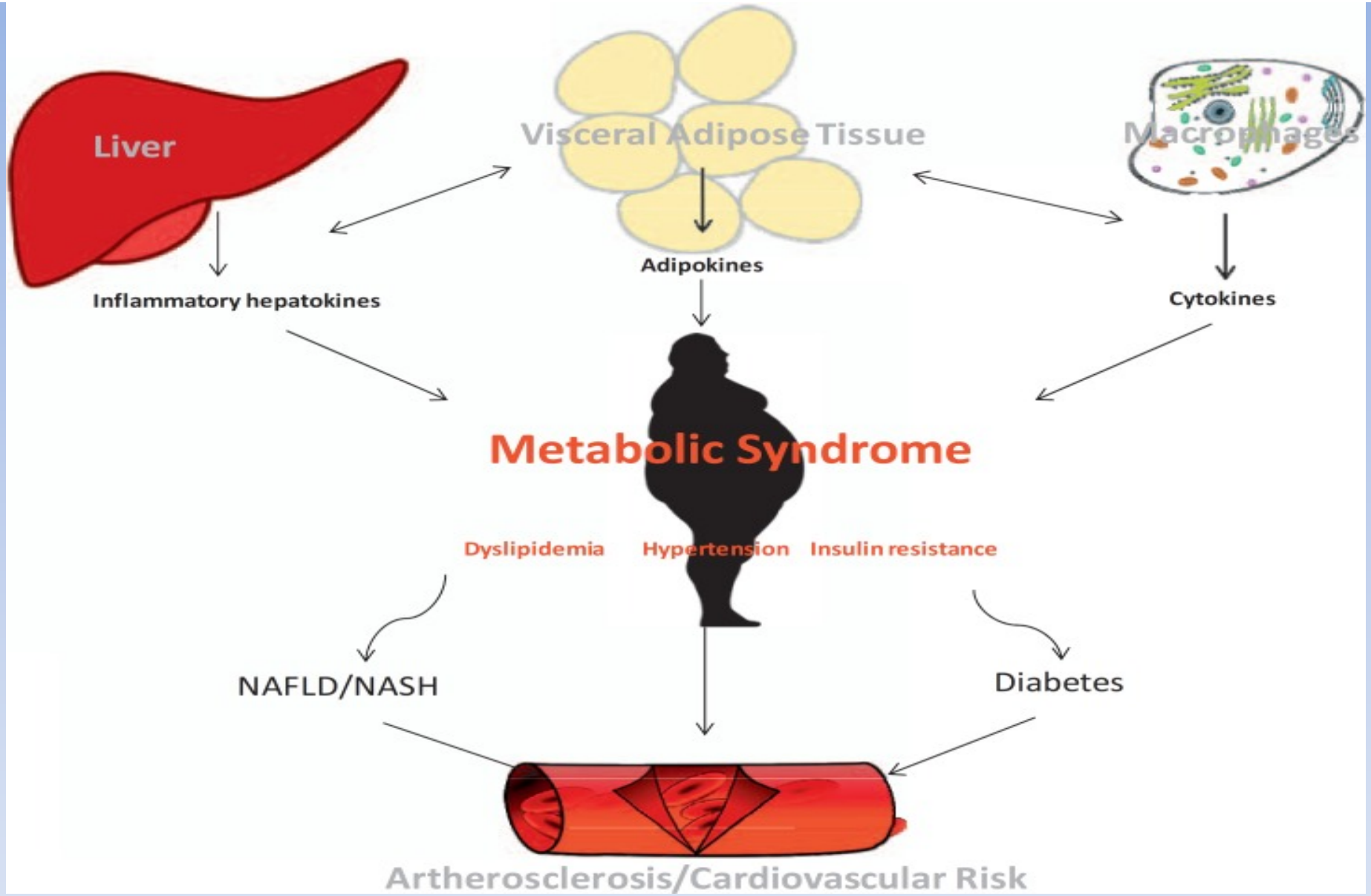
Visc Med. 2016 , 32(5):336-341. Epub 2016 Sep 19.

Clinical Scenario of the Metabolic Syndrome.

Brede S, Serfling G, Klement J, Schmid SM, Lehnert H.

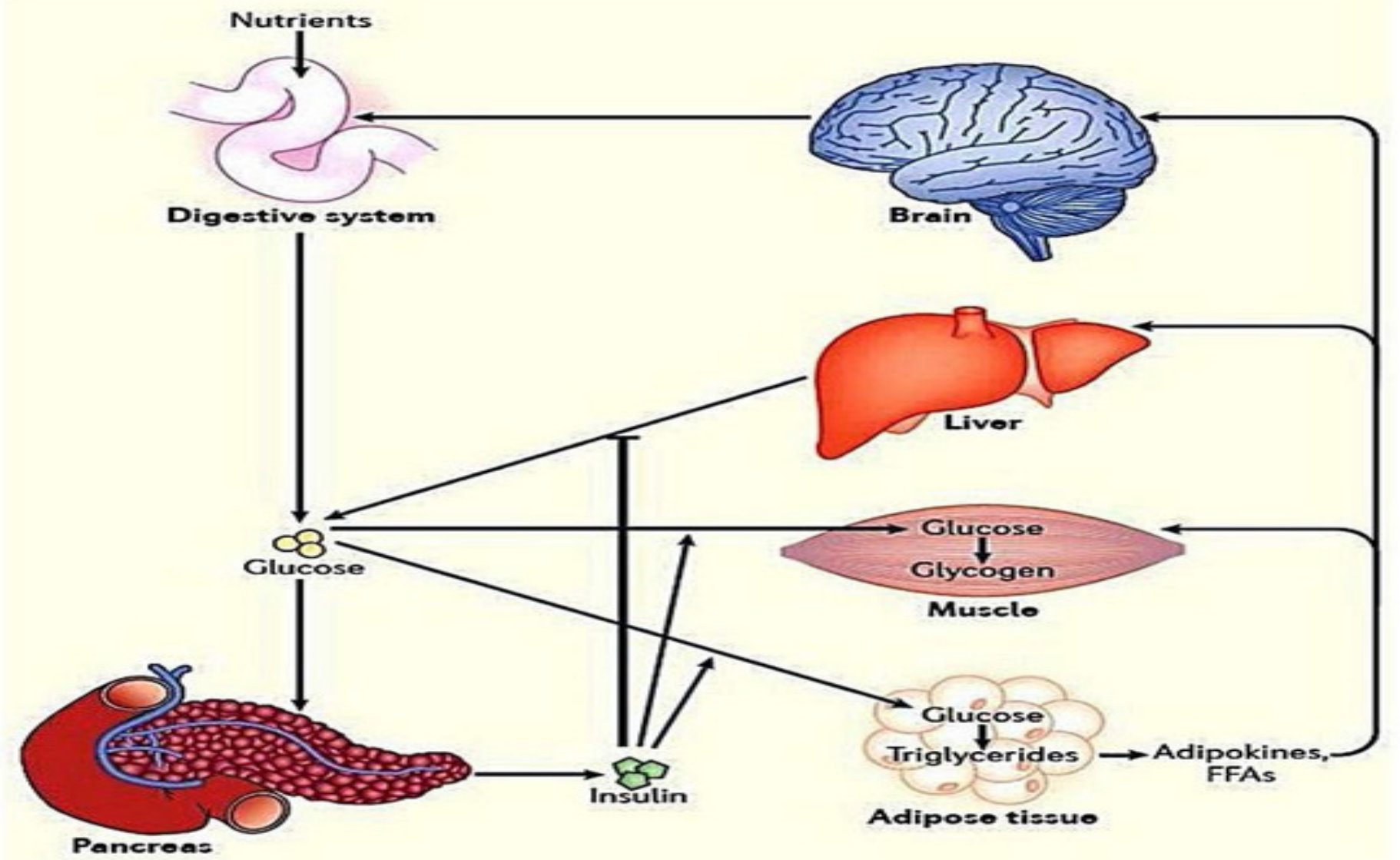
Abstract

The term metabolic syndrome (MeS) refers to a cluster of associated symptoms composed of impaired fasting glucose, abdominal obesity, hypertension, and dyslipidemia. MeS is associated with an increased risk of cardiovascular and diabetes-associated morbidity and mortality. The increased amount of visceral fat together with a chronic inflammatory state predisposes to the development of arteriosclerosis. Furthermore, insulin resistance (IR) and dyslipidemia are associated with fatty liver disease. In addition, MeS is linked to non-cardiovascular diseases such as cancer as well as psychiatric or endocrine disorders. Here, we discuss the clinical impact of MeS in cardiovascular and non-cardiovascular diseases to highlight the importance of prevention, early diagnosis, and multifactorial treatment of high-r



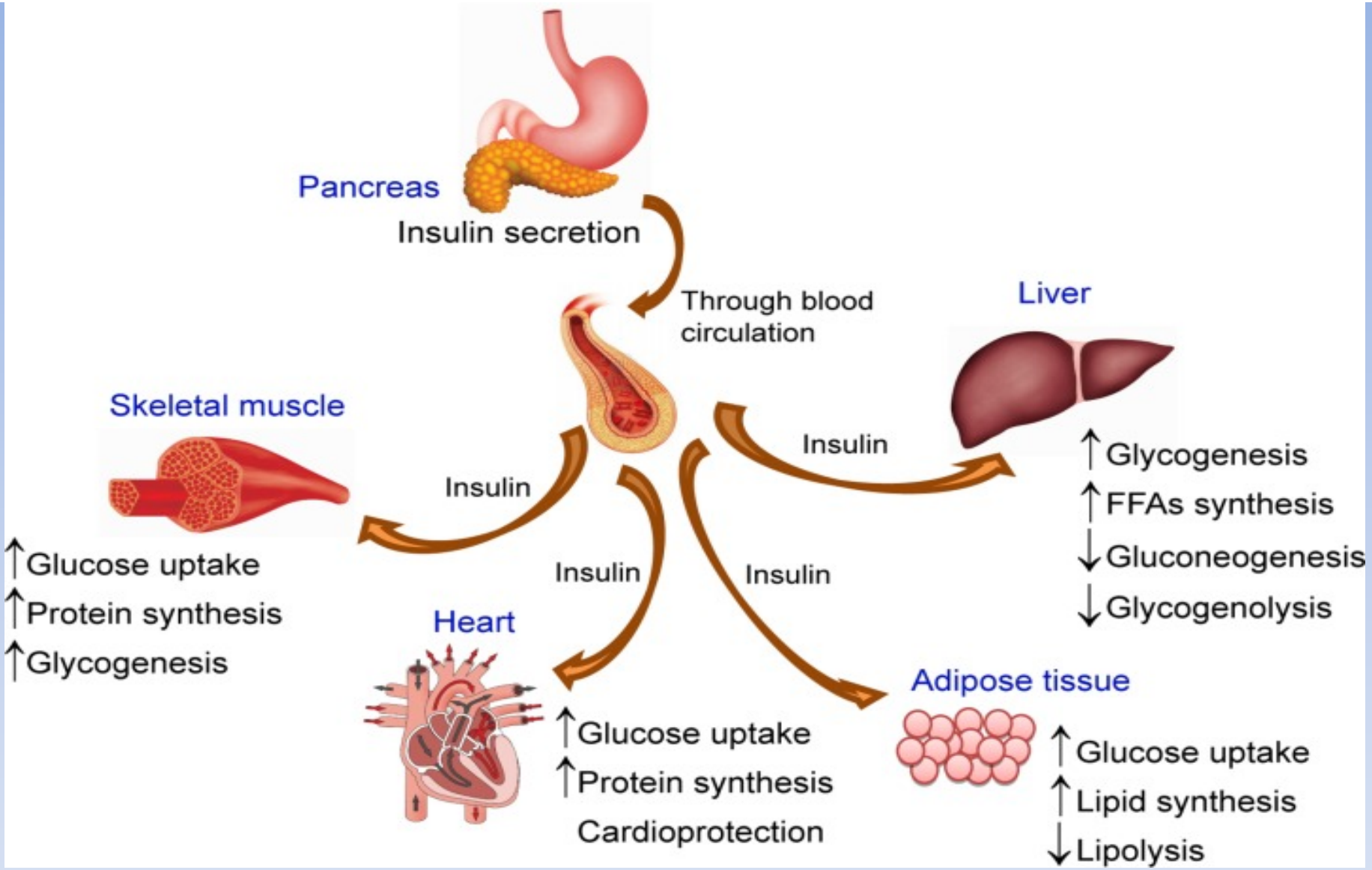
Pathogenesis of elevated cardiovascular risk in the MeS.

Visc Med. 2016 Oct;32(5):336-341. Epub 2016 . ***Clinical Scenario of the Metabolic Syndrome.*** *Brede S et al.*



The whole-body glucose homeostasis.

Molecules **2018**, *23*(2), 258; doi:10.3390/molecules 23020258 Sayem et al.



Insulin actions on many tissues.

Biomol Ther (Seoul). 2017 Jan; 25(1): 44–56. Mangmool S et al

Visc Med. 2016 Oct;32(5):319-326. Epub 2016 Oct 7.

Metabolic Vascular Syndrome: New Insights into a Multidimensional Network of Risk Factors and Diseases.

Scholz GH, Hanefeld M.

Abstract

BACKGROUND:

Since 1981, we have used the term metabolic syndrome to describe an association of a dysregulation in lipid metabolism (high triglycerides, low high-density lipoprotein cholesterol, disturbed glucose homeostasis (enhanced fasting and/or prandial glucose), gout, and hypertension), with android obesity being based on a common soil (overnutrition, reduced physical activity, sociocultural factors, and genetic predisposition). We hypothesized that main traits of the syndrome occur early and are tightly connected with hyperinsulinemia/insulin resistance, procoagulation, and cardiovascular diseases.

METHODS:

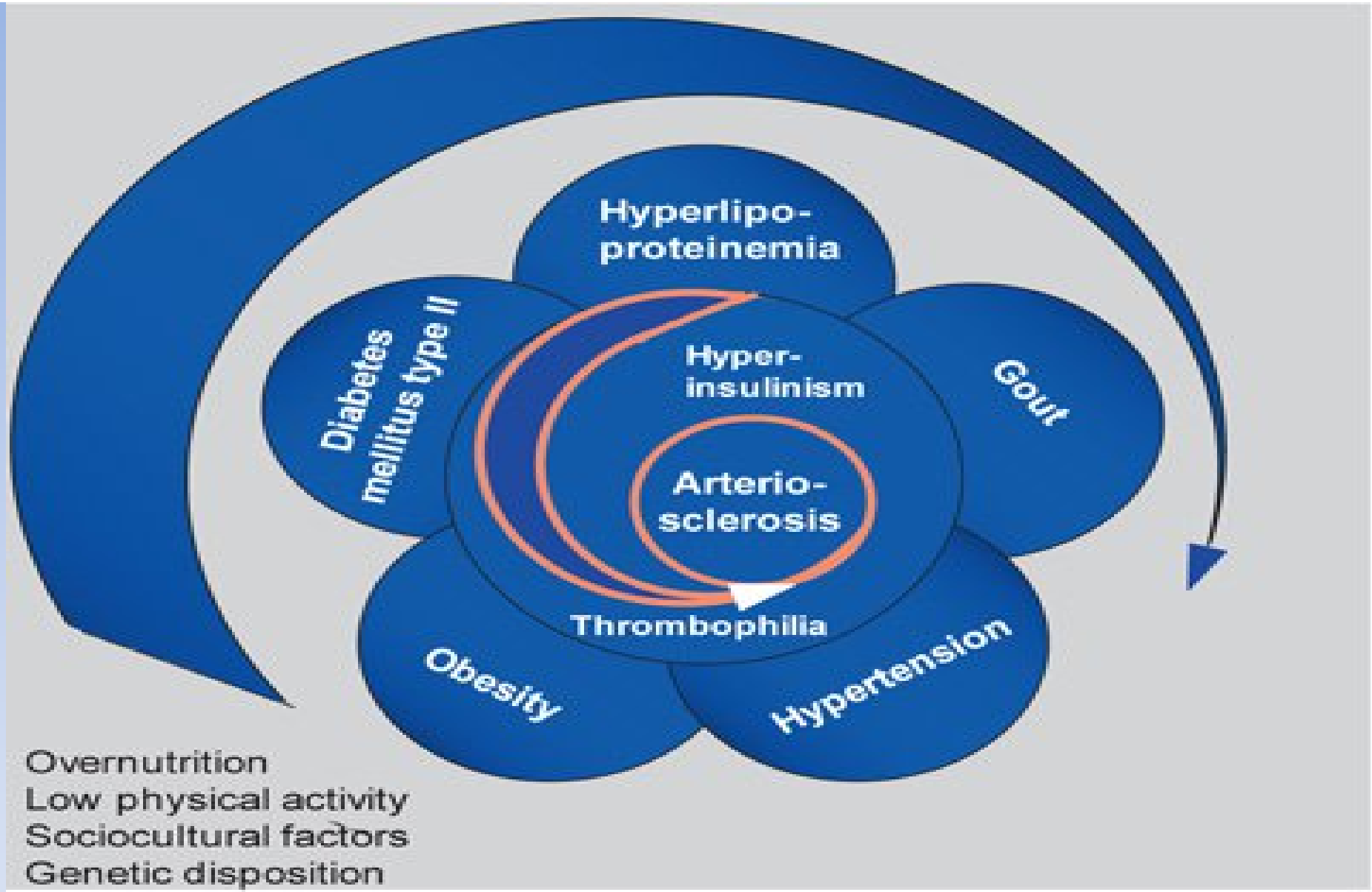
To establish a close link between the traits of the metabolic vascular syndrome, we focused our literature search on recent original work and comprehensive reviews dealing with the topics metabolic syndrome, visceral obesity, fatty liver, fat tissue inflammation, insulin resistance, atherogenic dyslipidemia, arterial hypertension, and type 2 diabetes mellitus.

RESULTS:

Recent research supports the concept that the metabolic vascular syndrome is a multidimensional and interactive network of risk factors and diseases based on individual genetic susceptibility and epigenetic changes where metabolic dysregulation/metabolic inflexibility in different organs and vascular dysfunction are early interconnected.

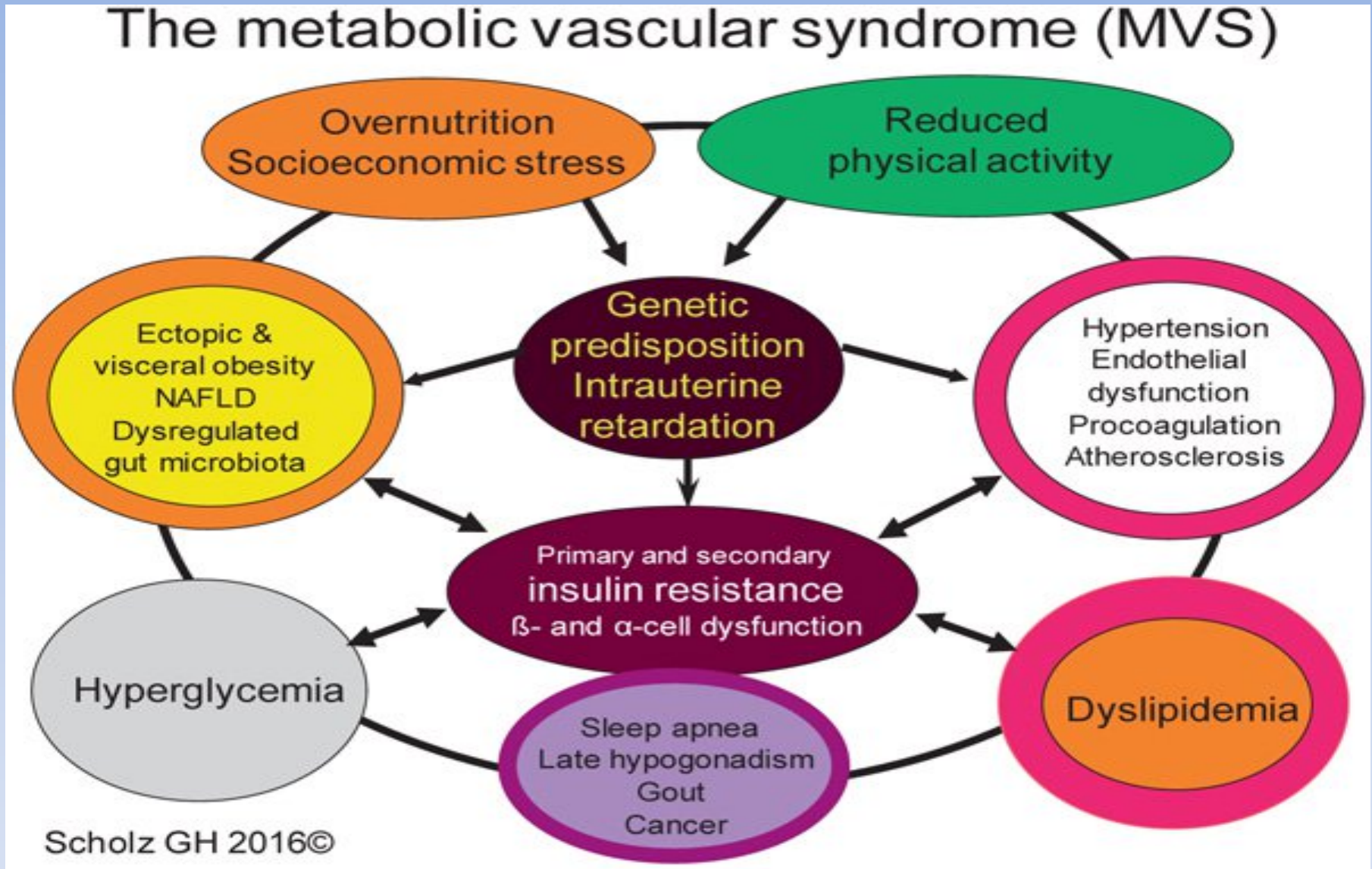
CONCLUSION:

The metabolic vascular syndrome is not only a risk factor constellation but rather a life-long abnormality of a closely connected interactive cluster of developing diseases which escalate each other and should continuously attract the attention of every clinician.



Historic description of the metabolic syndrome .

Visc Med. 2016 Oct;32(5):319-326. Epub 2016 Oct 7. **Metabolic Vascular Syndrome: New Insights into a Multidimensional Network of Risk Factors and Diseases.** Scholz GH and Hanefeld M.



The multidimensional network of the metabolic vascular syndrome

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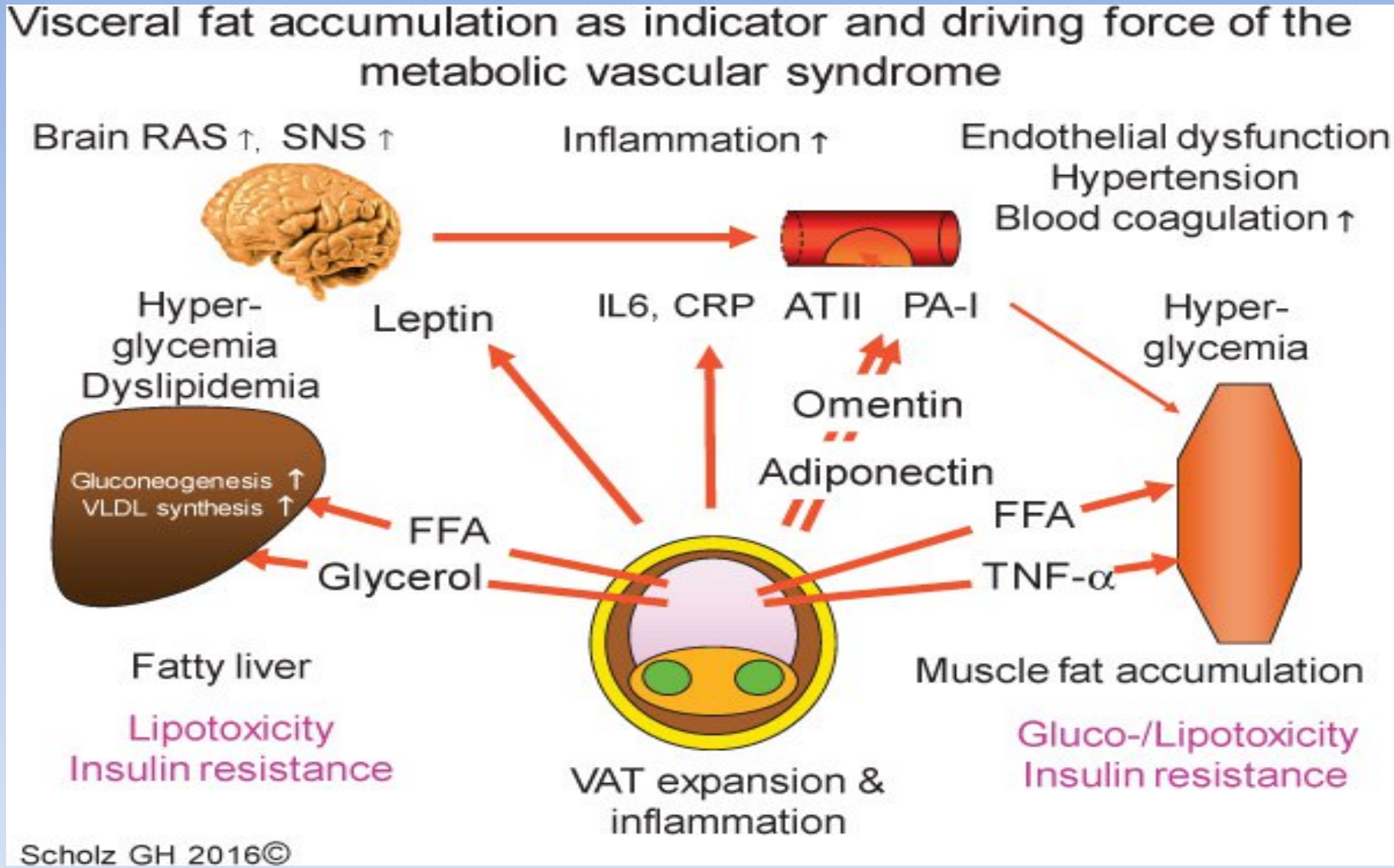
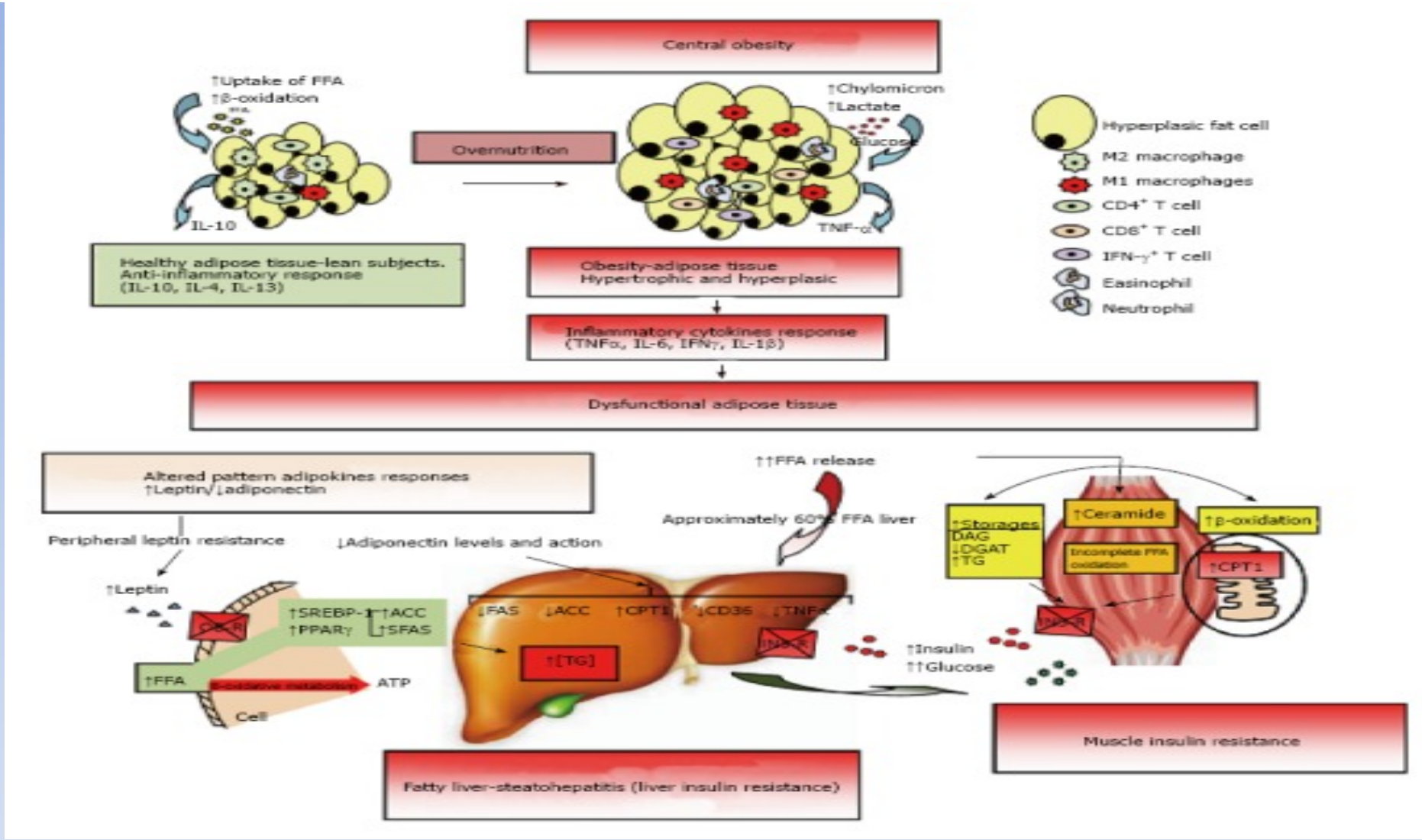


Effects of visceral obesity and ectopic fat depots on liver, vasculature, and muscle.

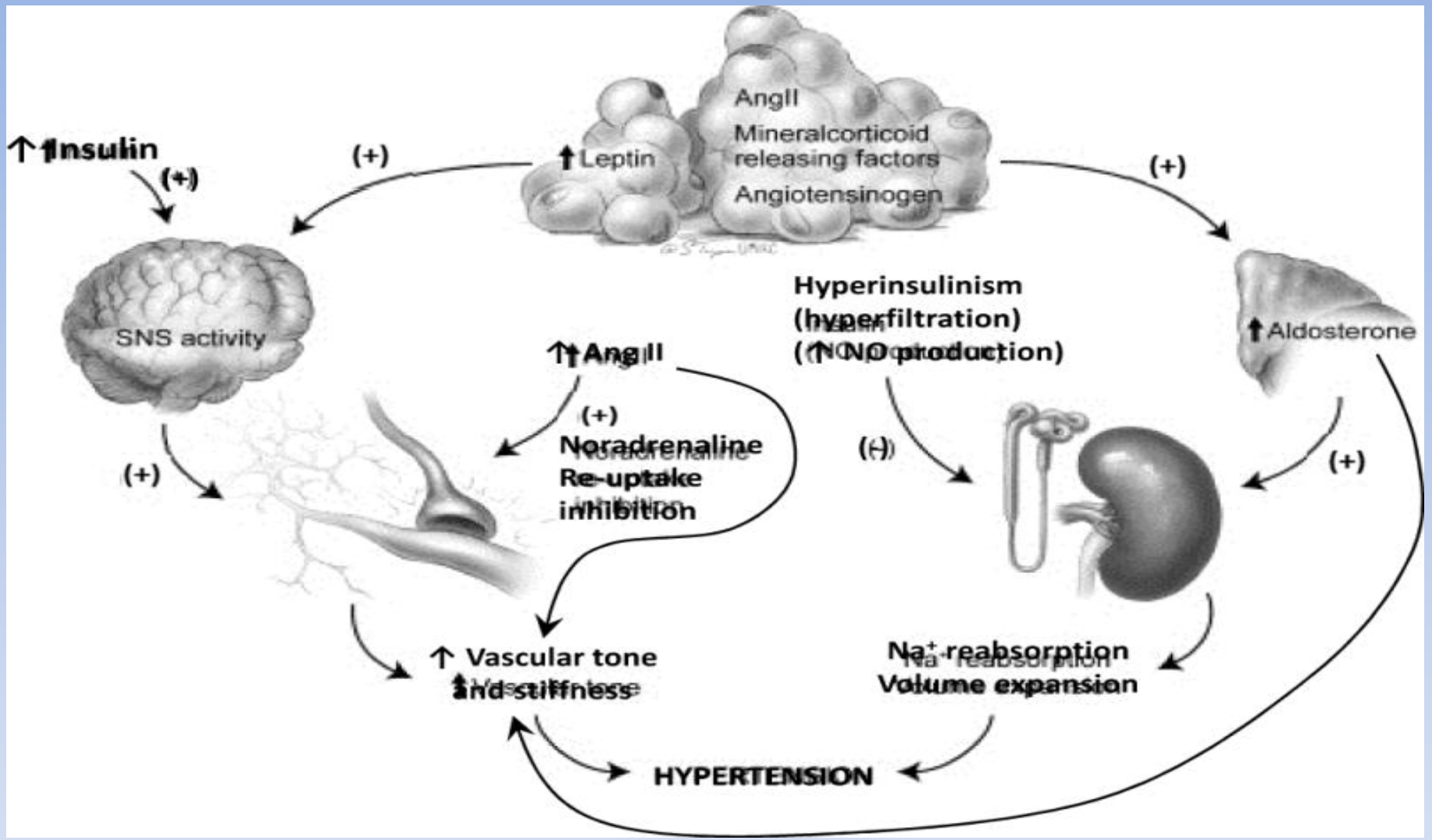
Visc Med. 2016 32(5):319-326. Epub 2016 Oct 7. Metabolic Vascular Syndrome: New Insights into a Multidimensional Network of Risk Factors and Diseases. Scholz GH and Hanefeld M.



Dysfunctional adipose tissue

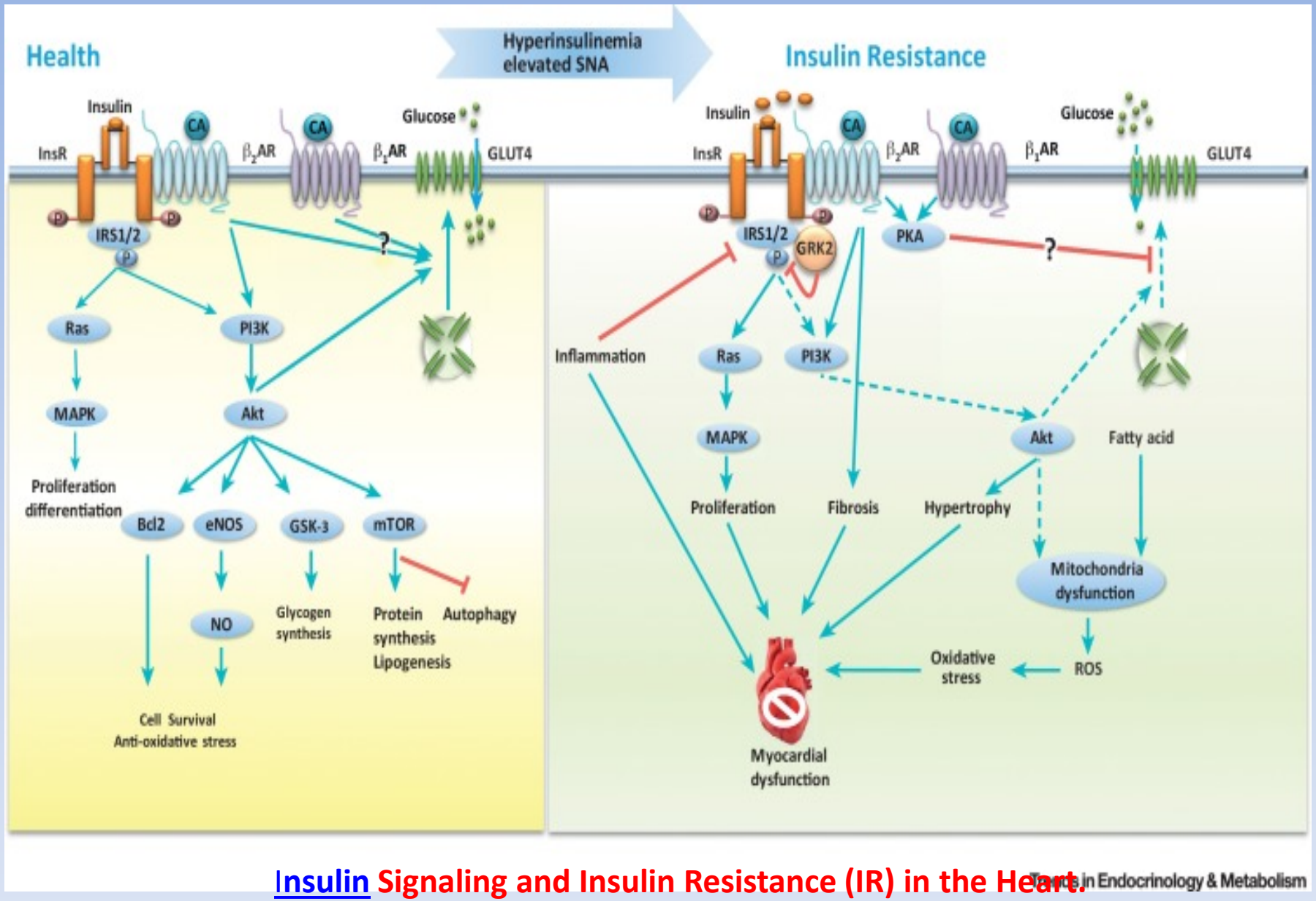
Early central obesity is associated with a low-grade chronic inflammatory state characterized by slow infiltration of macrophages which are an important source of inflammation of this adipose tissue

World J Diabetes. 2016 Nov 15;7(19):483-514. ***Nutrition, insulin resistance and dysfunctional adipose tissue determine the different components of metabolic syndrome.*** *Paniagua JA*



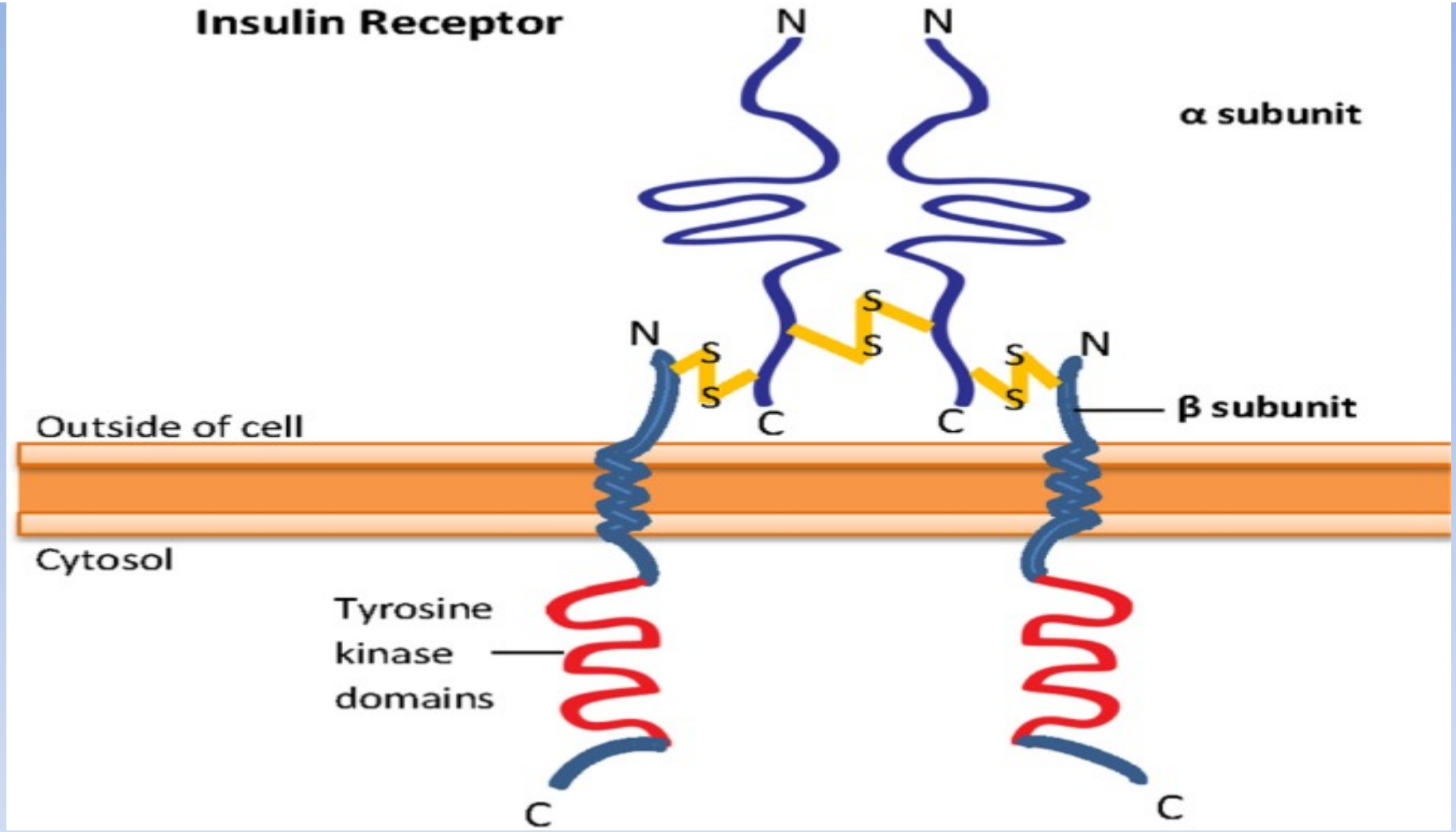
Coordinated influence of obesity, insulin resistance, activation of the RAAS and the SNS in the pathophysiology of hypertension in the CMS.

Med Clin North Am. 2017 Jan;101(1):129-137. doi: 10.1016/j.mcna.2016.08.009. The Renin Angiotensin Aldosterone System in Obesity and Hypertension: Roles in the Cardiorenal Metabolic Syndrome. Cabandugama PK et al.



Insulin Signaling and Insulin Resistance (IR) in the Heart.

Trends Endocr Metab., Volume 28, Issue 6, June 2017, Pages 416-427 Insulin and β Adrenergic Receptor Signaling: Crosstalk in Heart. QinFu et al.



Structure of insulin receptor.

Insulin receptor is a heterotetrameric receptor that contains two α subunits, which is extracellular and has the ligand-binding domain, and two β subunits, which consist of extracellular, transmembrane and intracellular domains. The tyrosine kinase domain of the receptor is present at the intracellular β subunits.

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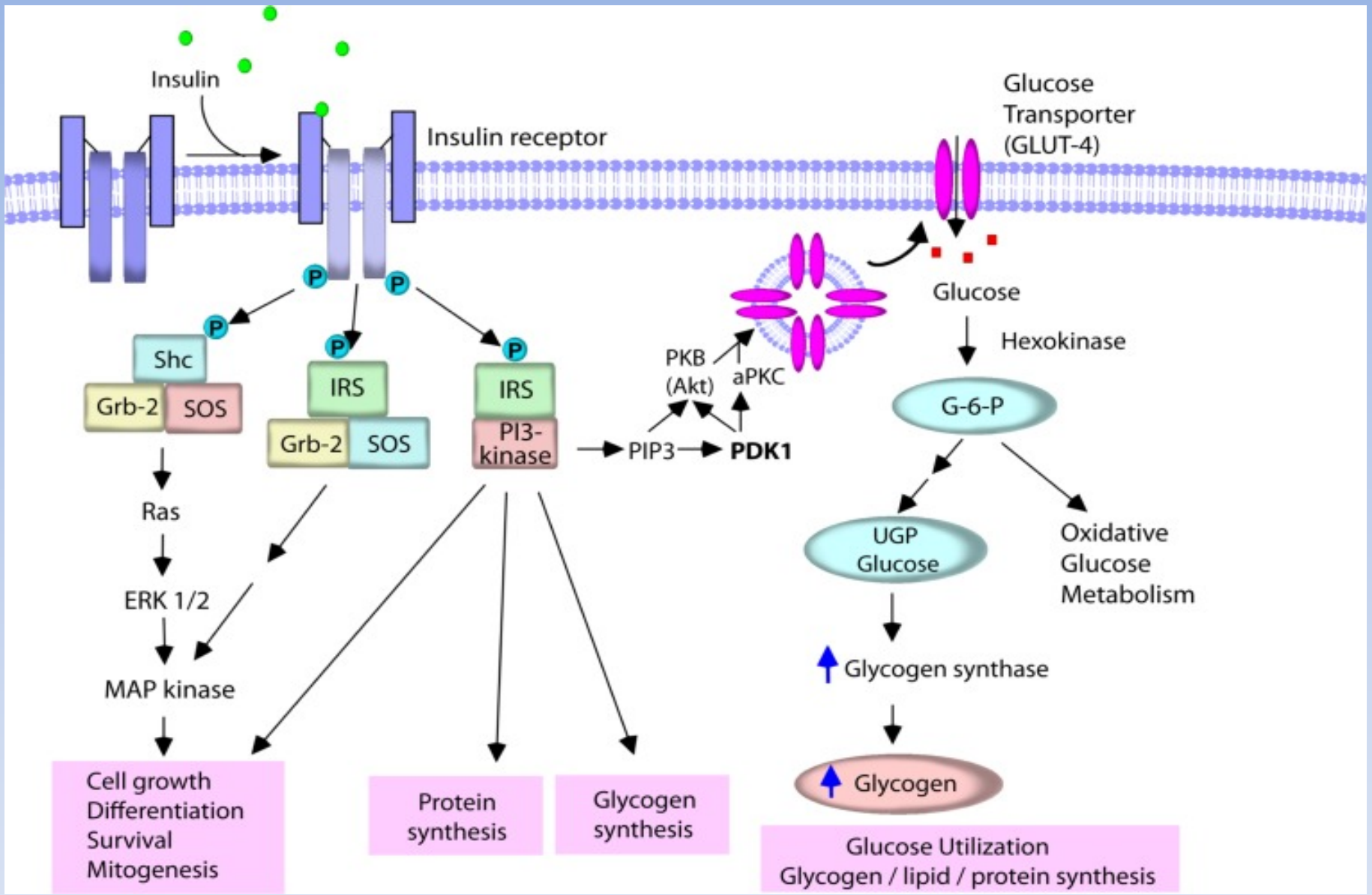

Insulin signaling pathway.

Biomol Ther (Seoul). 2017 Jan; 25(1): 44–56. Mangmool S et al