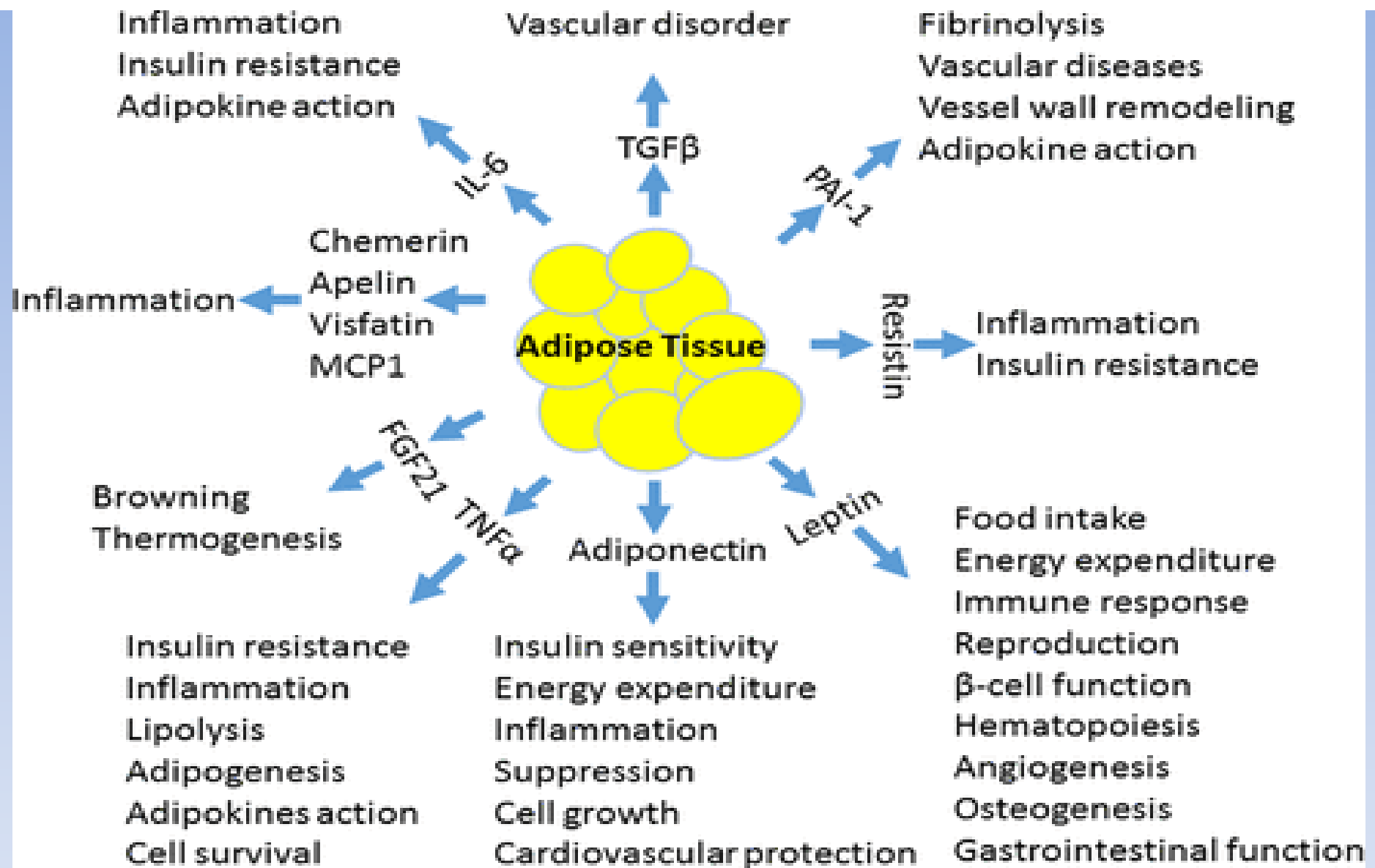


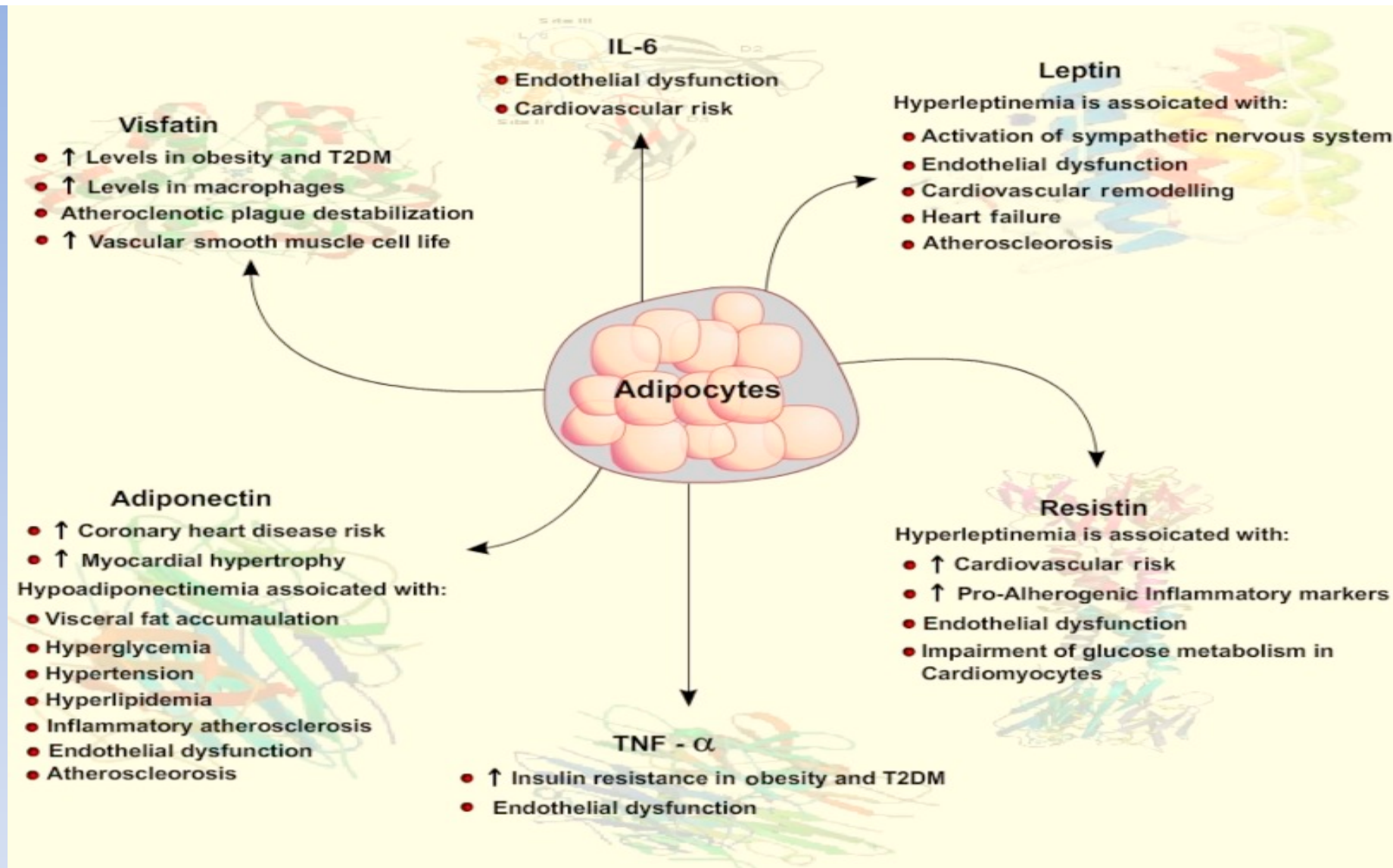
DIABETES and ADIPOCYTOKINES

Prof.Dr.Nuray ARI, 2018



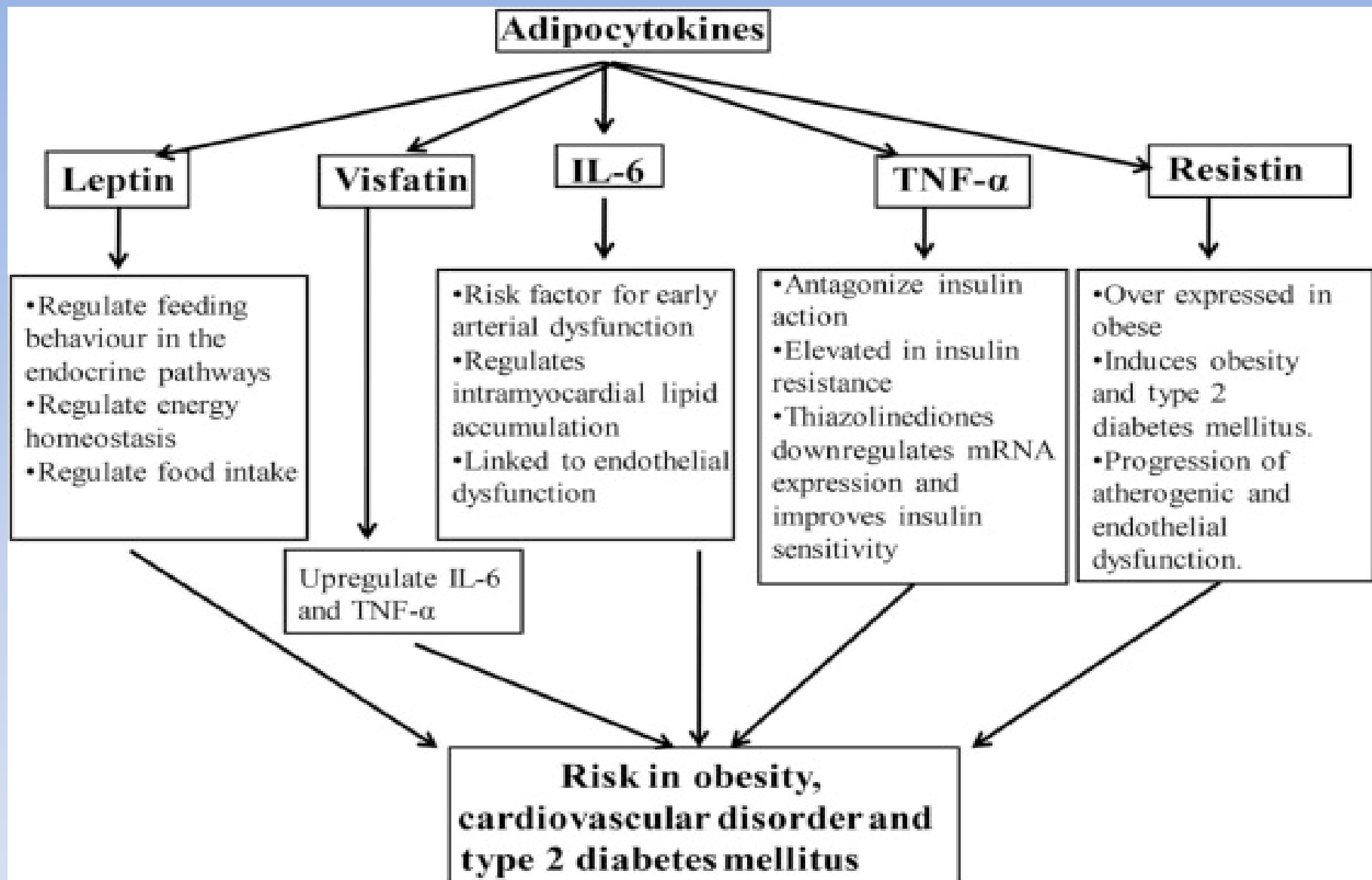
The physiological functions of adipokines.

[J Endocrinol.](#) 2016 231(3):R77-R99. Adipose tissue in control of metabolism. [Luo L](#), [Liu M](#).



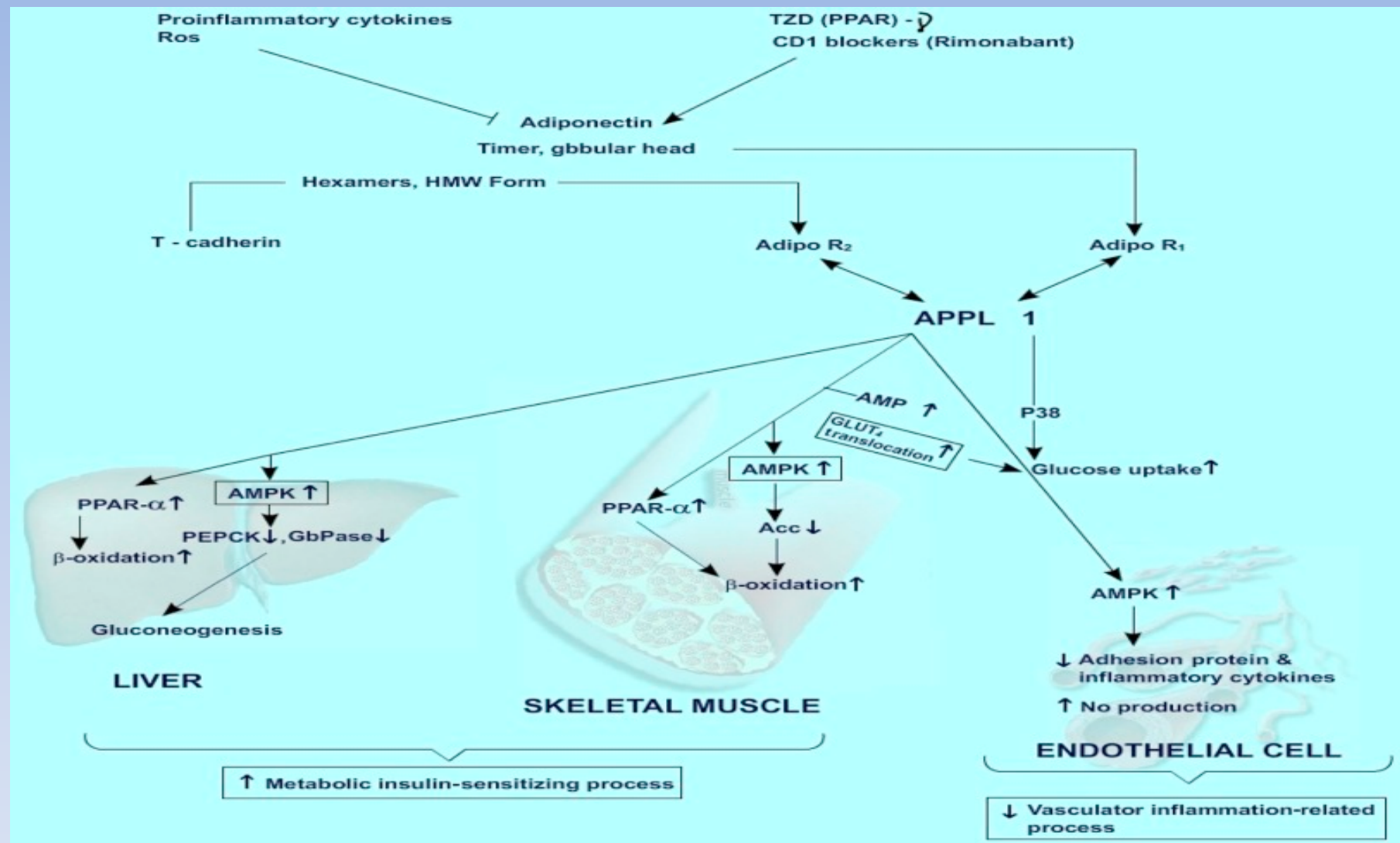
Schematic representation of adipocytokine action in various metabolic disorders.

Can J Diabetes. 2017 Emerging Role of Adipocytokines in T2 Diabetes as Mediators of Insulin Resistance and Cardiovascular Disease. Jagannathan R et al.



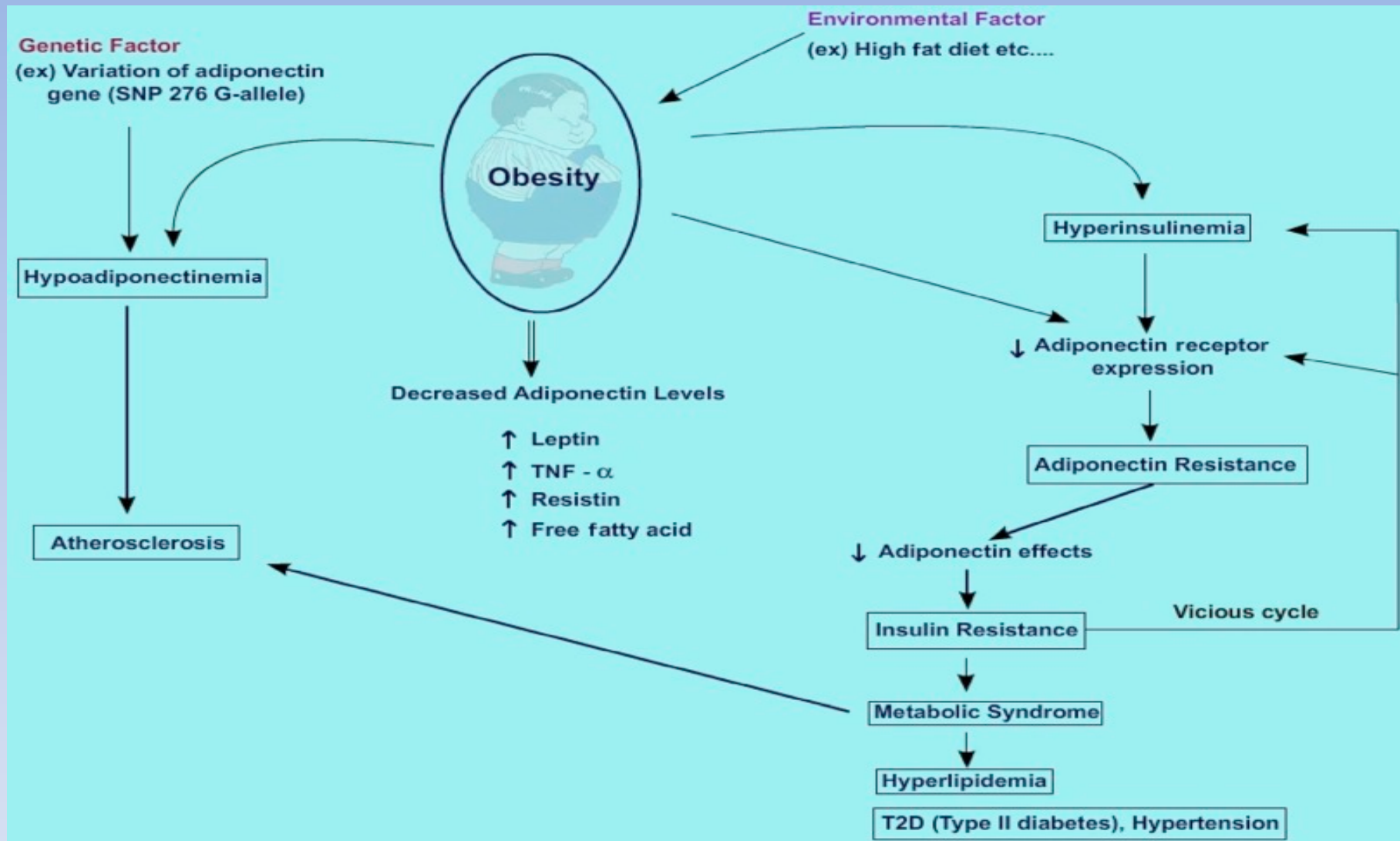
Summary explaining the role of various adipocytokines and their risk in obesity, type 2 diabetes and cardiovascular disease.

Can J Diabetes. 2017 *Emerging Role of Adipocytokines in T2 Diabetes as Mediators of Insulin Resistance and Cardiovascular Disease.* Jagannathan R. et al.

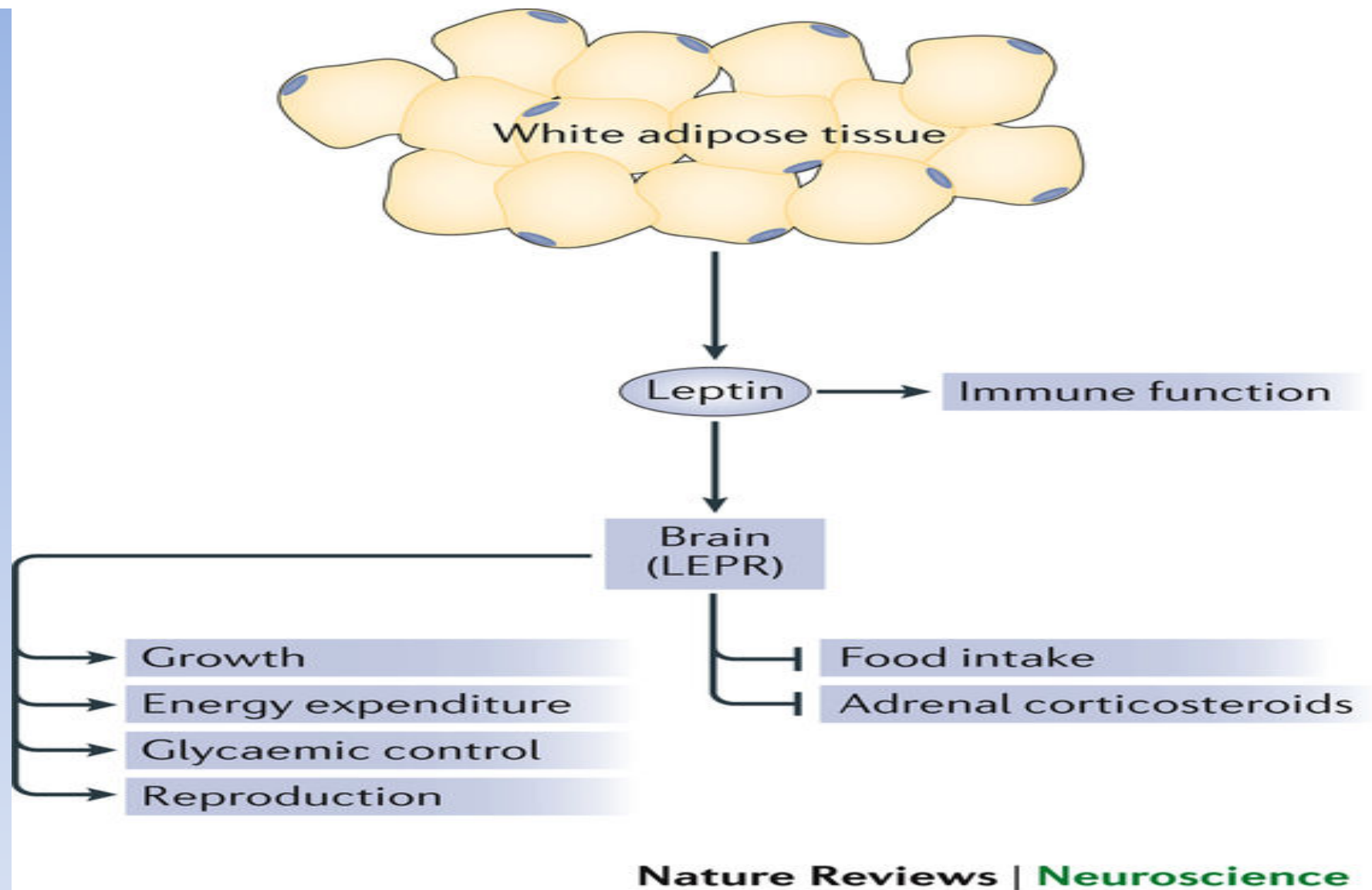


Schematic representation of **adiponectin** regulation in skeletal muscle, liver and endothelial cells.

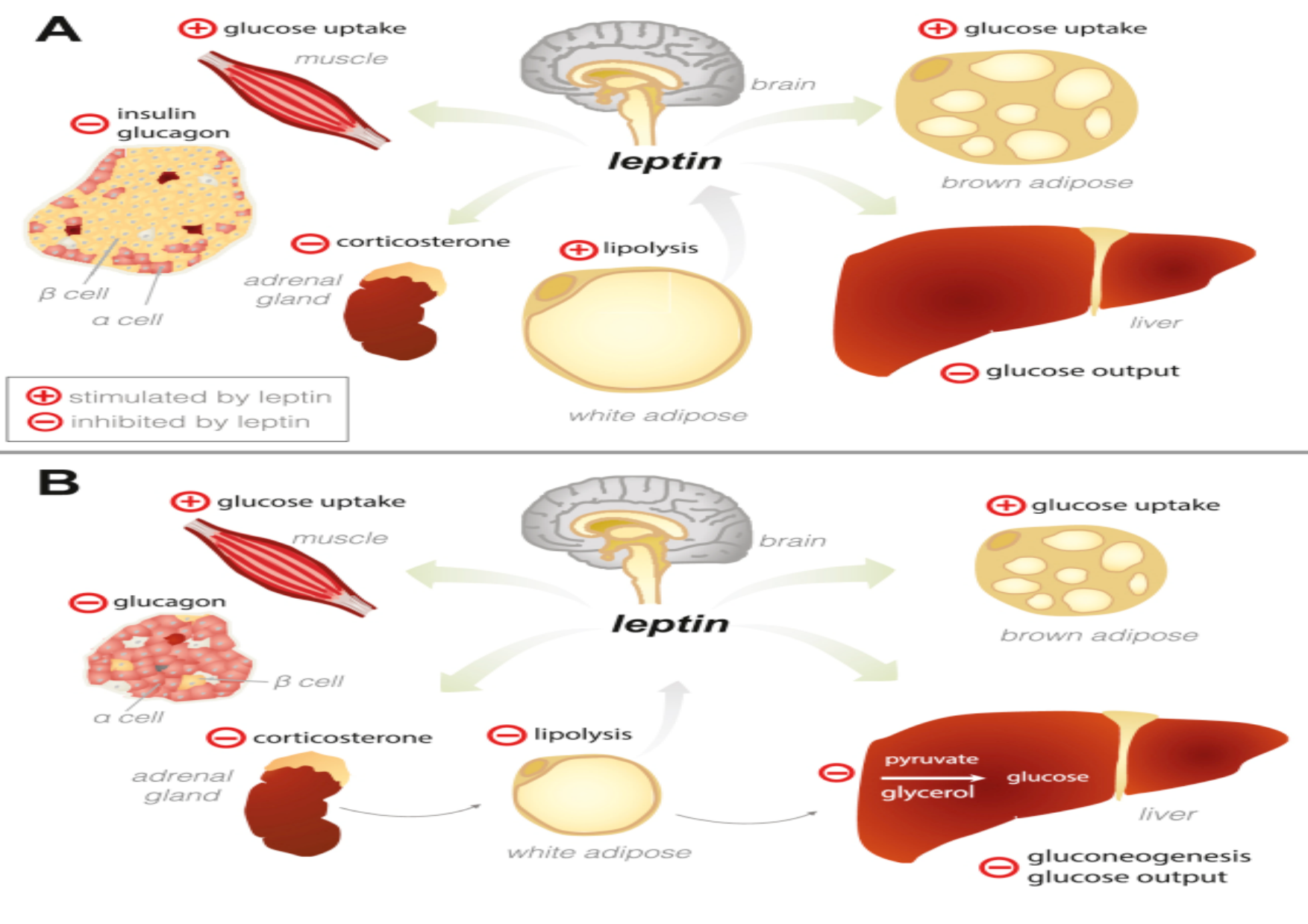
[Can J Diabetes.](#) 2017 Emerging Role of Adipocytokines in T2 Diabetes as Mediators of Insulin Resistance and Cardiovascular Disease. [Jaganathan R et al.](#)



Schematic representation of **adipocytokines** in obesity, adiponectin resistance, insulin resistance and atherosclerosis. [Can J Diabetes](#). 2017 **Emerging Role of Adipocytokines in Type 2 Diabetes as Mediators of Insulin Resistance and Cardiovascular Disease**. [Jaganathan R et al.](#)

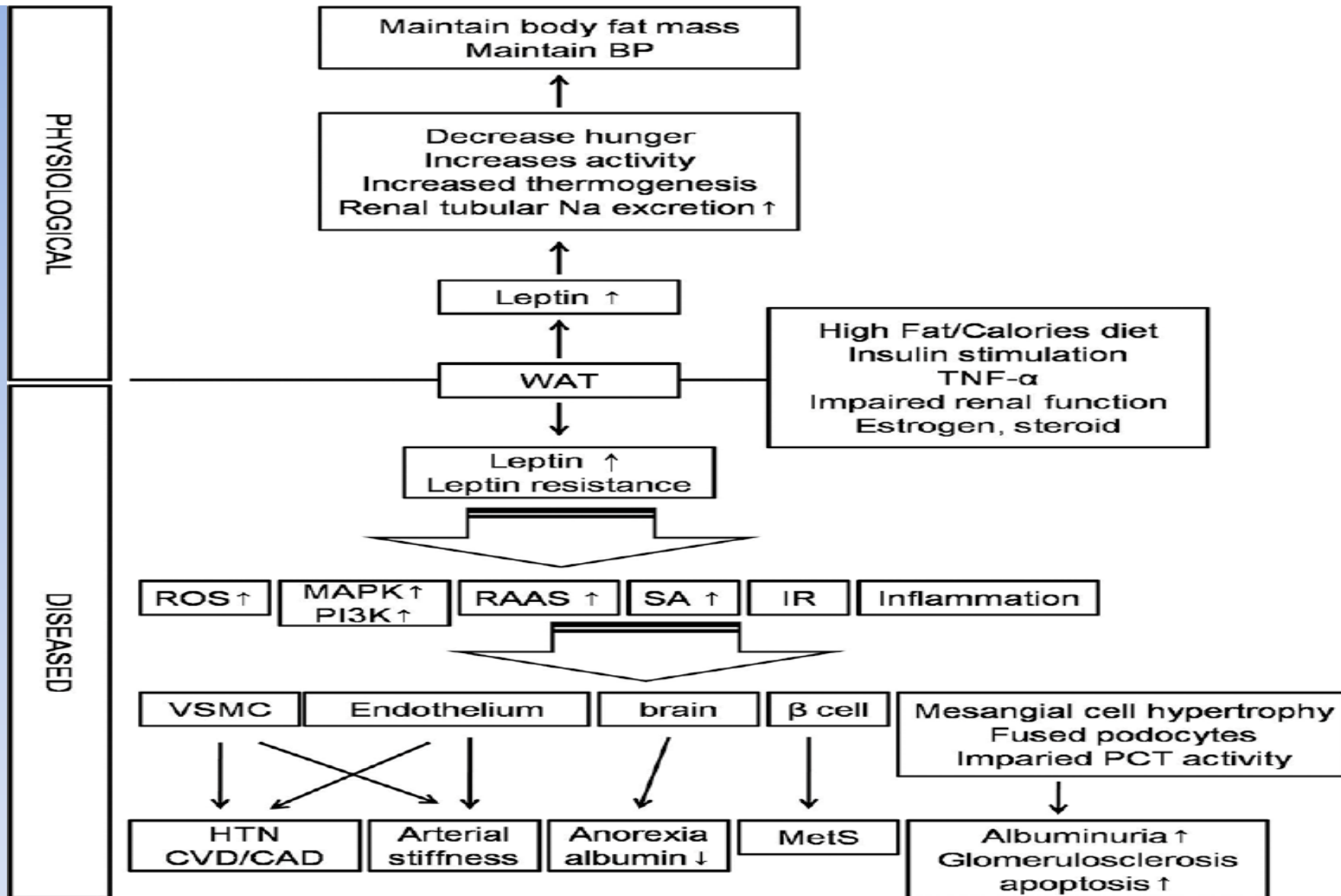


Cells of [white adipose tissue](#) secrete leptin in approximate proportion to their triglyceride content. Circulating leptin binds to the long form of the leptin receptor (LEPR) in the brain and, in doing so, promotes growth, energy expenditure, glycaemic control and reproduction. Leptin also suppresses food intake and the production of adrenal corticosteroids. Leptin also influences the production and function of immune cells. [Leptin and the maintenance of elevated body weight](#). Pan WW, Myers MG Jr. Nat Rev Neurosci. 2018 ,19(2):95-105

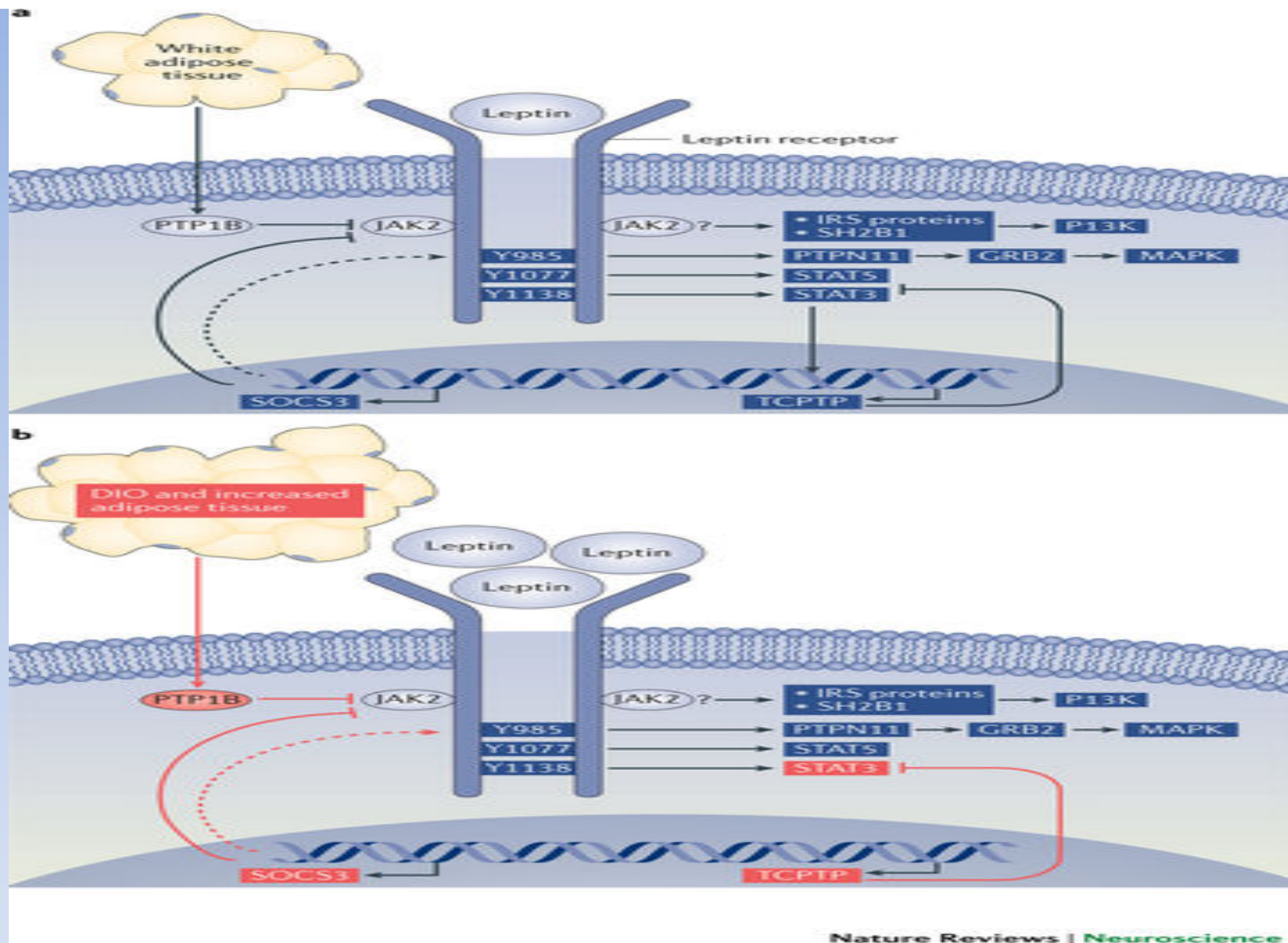


[The glucoregulatory actions of leptin.](#)

Mechanisms underlying the glucoregulatory effects of leptin in lean or insulin deficient rodents. Anna M. D'souza, et al. Mol Metab. 2017 6(9):1052-1065



Schematic presentation of the multiple roles of leptin in physiological regulation (upper half) and pathophysiological (lower half) conditions in humans



a . In individuals with normal body weight, circulating leptin binds to its receptor, which activates tyrosine-protein kinase JAK2, resulting in the phosphorylation of leptin receptor (LEPR) tyrosine residues Y985, Y1077 and Y1138. **b** . In obesity, increased adipose mass increases leptin production and thus circulating leptin concentrations. The consequent increase in LEPR signalling promotes increased expression of SOCS3 and TCPTP; obesity also increases PTP1B expression. These mechanisms blunt the amplitude of the response to increased leptin concentrations. DIO, diet-induced obesity; P13K, phosphoinositide 3-kinase. [Leptin and the maintenance of elevated body weight](#). Pan WW, Myers MG Jr. Nat Rev Neurosci. 2018,19(2):95-105