

# PREFACE

Obesity is a nationwide epidemic in the United States. It is interrelated with Type 2 diabetes and other diseases, such as cardiovascular disease, certain cancers, osteoarthritis, and asthma. The chief causes are excessive caloric intake in the forms of fat and sugar, endocrine disorders, lack of exercise, genetics, certain medications, and psychiatric illness. In view of the fact that fat tissue is now understood to be an endocrine gland in its own right and a great deal of basic biochemistry is involved, this book focuses on fundamental aspects of research into this subject.

[Chapter 1](#) is entitled “Hormonal regulation of lipogenesis” by L.L. Gathercole, S.A. Morgan, and J.W. Tomlinson. Next, Y. Winter, R. Sankowski, and T. Back focus on genetics in “Genetic determinants of obesity and related vascular diseases” ([Chapter 2](#)). “*Brd2* gene disruption causes ‘metabolically healthy’ obesity’: epigenetic and chromatin-based mechanisms that uncouple obesity from Type 2 diabetes” is the subject of F. Wang, J.T. Denney, and G.V. Denis ([Chapter 3](#)). “The *TBC1D1* gene: structure, function, and association with obesity and related traits” is discussed in [Chapter 4](#) by L. Fontanesi and F. Bertolini. In [Chapter 5](#), J.T. Heiker and N. Klöting report on “Replication initiator 1 (Repin 1) in adipose tissue function and human obesity.”

Moving more into the endocrine aspects, “Adipokines in childhood obesity” is the topic of G.Á. Martos-Mareno, V. Barrios, J.A. Chowen, and J. Argente ([Chapter 6](#)). “Gut hormones and obesity: physiology and therapies” is reviewed by R. Scott, T. Tan, and S. Bloom ([Chapter 7](#)). D. Cai discusses “Neuroinflammation in overnutrition-induced diseases” in [Chapter 8](#). S.C. Ranieri, S. Fusco, and G. Pani focus on “P66<sup>shcA</sup>: linking mammalian longevity with obesity-induced insulin resistance” in [Chapter 9](#). “The emerging role of constitutive androstane receptor (CAR) and its crosstalk with liver X receptors (LXRs) and peroxisome proliferator-activated receptor  $\alpha$  (PPAR $\alpha$ ) in lipid metabolism” is the subject of L. Xiao, J. Wang, M. Jiang, W. Xie, and Y. Zhai ([Chapter 10](#)).

Other aspects include “Lecithin cholesterol acyltransferase deficiency protects from diet-induced insulin resistance and obesity—novel insights from mouse models” by D.S. Ng ([Chapter 11](#)). Next, S. Mitsutake and Y. Igarashi report on “Sphingolipids in lipid microdomains and obesity” in [Chapter 12](#). “Ghrelin: at the interface of obesity and reward” is reviewed

by H. Schellekens, T.G. Dinan, and J.F. Cryan ([Chapter 13](#)). G. Chen and Z. Pang introduce “Endocannabinoids and obesity” in [Chapter 14](#). “Lipocalin 13 regulation of glucose and lipid metabolism in obesity” is offered by Y. Zhou and L. Rui ([Chapter 15](#)).

With regard to specific enzymes, J.K. Kemper, S.-E. Choi, and D.H. Kim report on “Sirtuin 1 deacetylase: a key regulator of hepatic lipid metabolism” ([Chapter 16](#)) and H. Cho contributes “Protein tyrosine phosphatase 1B (PTP1B) and obesity” ([Chapter 17](#)).

Finally, in [Chapter 18](#), R. Sato reviews “Nomilin as an anti-obesity and anti-hyperglycemic agent.”

The illustration on the cover of this book is reproduced from [Fig. 12.4 of Chapter 12](#).

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