How fat works, by Philip A. Wood, presents a biochemist and molecular geneticist’s viewpoint on how dietary fats are normally metabolized and stored in the body and how derangements in these processes can lead to obesity and the metabolic syndrome. This book covers an extraordinary range of topics, from the molecular and biochemical details of cellular cholesterol homeostasis and fatty acid oxidation to metabolic responses to different dietary regimens, metabolic adaptations to exercise, and diet and drug therapies for hyperlipidemia. Wood also looks at public health aspects of obesity and media coverage of the obesity epidemic and the risk for developing metabolic syndrome. This book covers an extraordinary amount of ground. Although he often stops to repeat his main points, many readers may get lost in the molecular details, rapid switches between topics, and often less-than-clear illustrations.

Some readers may be disappointed, given the title of the book, with the depth of coverage of the subjects of adipose tissue and adipocyte metabolism. For example, the emerging concept of the lipid droplet as a dynamic subcellular organelle that is surrounded by a family of lipid proteins that regulate triglyceride deposition and release (2) is not described. The reader will also not have the opportunity to gain a full appreciation of the elaborate biochemical cascades that modulate adipocyte fat storage and release, nor appreciate fully how adipocyte metabolism is altered in human obesity and may contribute to the development of comorbidities. Although the endocrine functions of fat cells and adipose tissue are mentioned, they are not well described from either the basic scientific or clinical points of view.

This book emphasizes the central concept of energy balance: that energy intake (calories) must balance energy expenditure for body weight to remain stable. Although Woods does make clear the essential concept that high-fat diets are due to a decrease in total caloric intake, his discussion of the effectiveness of Atkins-style and low-glycemic-index diets is infiltrated with anecdotes and personal opinions, detracting from the overall high quality of this book.

The analysis of the behavioral literature in this book is less comprehensive and academically rigorous than the analyses and descriptions of the metabolic processes. Important concepts for understanding the regulation of energy and fat intake such as dietary variety and energy density are not clearly evaluated. In one section the author seems to suggest that “willpower” can usually overcome metabolic abnormalities that predispose to obesity. The emerging concept (3) that alterations in fuel metabolism and the neuroendocrine regulation of food intake may drive obese individuals to maintain a higher body weight is not clearly described.

In summary, this timely book raises many key issues in the field of obesity and lipid metabolism and will be useful to supplement courses for medical and graduate students. A strength of the book is that it connects the basic biochemistry and molecular biology of lipid metabolism to the clinical situation. Despite some shortcomings, the book will be a good catalyst for generating discussions of the controversial issues in the field. It also provides the reader with an understanding of the breadth of new knowledge that will be necessary in order to attack the obesity epidemic.