

Contents

Preface	ii
1. Normal energy metabolism and its control	I
Introduction	I
Catabolism	2
Anabolism	II
2. Starvation	17
Gluconeogenic phase	18
Protein conservation phase	23
Salt and water metabolism in starvation	25
3. Diabetes mellitus	27
Definition	27
Aetiology	27
Alterations in metabolism	27
Physiological and biochemical adaptations	30
Treatment	31
Complications of diabetes mellitus	31
4. Trauma	33
The initial shock (ebb) phase	33
The hypermetabolic (flow) phase	34
The recovery phase	36
5. Exercise	38
Anaerobic exercise	39
Aerobic exercise	42
6. Obesity	48
Control of caloric intake	49
Control of caloric expenditure	49
Causes of obesity	52
Clinical aspects of obesity	54
Treatment of the obese patient	55

7. Calcium metabolism	57
The control of intracellular calcium	57
The control of extracellular calcium	60
Calcium homeostasis in response to feeding	66
Hypercalcaemia	67
Hypocalcaemia	68
8. Cholesterol metabolism	73
Whole body cholesterol homeostasis	73
Transport of cholesterol in the circulation	79
Gallstones	85
Atherosclerosis	86
9. The kidney and hormones	91
Ion and water balance	91
Ions	92
The regulation of water excretion	96
Renal hormone synthesis	98
Appendix	100
Index	103