
Contents

Preface	vii
Contributors	ix

Section 1: PHYSIOLOGY AND BIOCHEMISTRY

1. Intermediary Metabolism	3	13. The Role of Abnormal Polyol Metabolism in Diabetic Complications	117
Leonard S. Jefferson and James R. Neely		Rex S. Clements, Jr.	
2. Hormonal Antagonists of Insulin	27	14. Platelet Function in Diabetes Mellitus	129
R. Philip Eaton and David S. Schade		John A. Colwell and Perry V. Halushka	
3. Glucagon Structure, Biosynthesis, and Metabolism	35	15. Nonenzymatic Glycosylation of Protein: Its Role in Diabetes	136
Howard S. Tager		H. Franklin Bunn	
4. Insulin and Its Biosynthesis	42	16. Structure of the Basement Membrane	146
John M. Chirgwin		R. Østerby	
5. Insulin Action: Physiological and Biochemical Aspects	48	17. Chemistry of the Basement Membrane	156
Rachmiel Levine		Margo Panush Cohen	
6. Somatomedins and Nonsuppressible Insulin-like Activity	56	18. Diabetic Complications: An Overview	165
William H. Daughaday		Michael Brownlee	
7. Glucagon	63	19. Metabolism during Catabolic States of Starvation, Diabetes, and Trauma in Humans	172
Philip Raskin		O. E. Owen, G. A. Reichard, Jr., J. M. Kinney, G. Boden, M. S. Patel, and D. G. Sapir	
8. Prostaglandins and Diabetes	71	20. Exercise and Diabetes	185
R. Paul Robertson		Stephen H. Schneider and Neil Ruderman	
9. Gastrointestinal Hormones	79	21. Diabetes and Plasma Lipoproteins	192
Eugene Straus		W. Virgil Brown and Henry N. Ginsberg	
10. Somatostatin and Diabetes Mellitus	89	22. Integrating Actions of the Central Nervous System	200
Michael Berelowitz		Lawrence A. Frohman	
11. Functional Morphology of the Islets of Langerhans	95		
Michael C. Appel and Arthur A. Like			
12. Normal and Abnormal Pancreatic β -Cell Function and Metabolism	108		
Franz M. Matschinsky and Pamela Trueheart Burch			

Section 2: OBESITY

23. Obesity	215	24. Characterization of the Syndromes of Obesity	219
George F. Cahill, Jr.		Ethan A. H. Sims	

xvi **Contents**

25. Mechanisms of Appetite Regulation	227	Animals	273	62. Di
Sebastian P. Grossman		John P. Mordes, Walter A. Muller, and		lite
26. Radioimmunoassay and Plasma Hormones	237	Aldo A. Rossini		
Don S. Schalch		32. Spontaneous Diabetes and Obesity in	283	63. In
27. The Radioreceptor Assay	242	Rodents		or
Robert G. Spanheimer, Robert S. Bar,		D. L. Coleman and B. N. Brodoff		
and Jesse Roth		33. Obesity and Diabetes in Humans	294	64. Su
28. Insulin Resistance and Insulin Action in		John H. Karam		
Obesity and Noninsulin-Dependent (Type		34. Psychological Factors in Obesity	301	65. Pr
II) Diabetes Mellitus	250	Joel A. Grinker and Gordon G. Ball		
Jerrold M. Olefsky		35. Anorexia Nervosa	310	66. Inf
29. Energy Metabolism and Obesity	261	Jack L. Katz		
Edward S. Horton and Elliot Danforth,		36. Treatment for Obesity	322	67. Ge
Jr.		George A. Bray		abe
30. The Fat Cell and Human Adipose Tissue	269	37. Surgical Management of Morbid Obesity	333	68. Pa
Per Björntorp		Peter R. Holt and Donald P. Kotler		
31. Experimental and Spontaneous Diabetes in				

Section 3: CLINICAL DIABETES

38. Trace Elements and Minerals in Diabetes	343	51. Usage of Insulin in Type I and Type II Diabetes	480	70. The
Walter Mertz		T. S. Danowski		Di
39. Classification and Natural History of Dia-		52. Bioengineering in Diabetes	487	71. Oc
betes Mellitus	349	F. J. Service		C
Stefan S. Fajans		53. Islet Cell Replacement	495	72. Ren
40. Immunological Aspects of Diabetes	355	Paul E. Lacy		
W. James Irvine		54. Transplantation of the Pancreas in Insulin-	500	
41. Genetics	364	dependent Diabetes		
J. M. Friedman and Philip J. Fialkow		David E. R. Sutherland, Frederick C.		
42. Genetic Syndromes with Diabetes	374	Goetz, and John S. Najarian		
R. Neil Schimke		55. Parameters of Diabetes Control	508	
43. The Viral Etiology of Diabetes	381	T. S. Danowski, Paul M. Ohlsen, and		
Elliot J. Rayfield and Ji-Won Yoon		J. H. Sunder		
44. The Epidemiology of Diabetes Mellitus	387	56. Goals of Treatment and Importance of	517	
Peter H. Bennett		Control		
45. Diagnosis of Diabetes Mellitus	400	George D. Molnar and Paul G. St. John		
Rodolfo Alejandro and Jay S. Skyler		Hammond		
46. Nondiabetic Mellitarias	407	57. Acidosis and Coma in the Diabetic	526	
Jay S. Skyler		Robert A. Kreisberg		
47. Spontaneous and Drug-Induced Hypoglycemia	414	58. Treatment of Acidosis in Diabetic Children	536	
Holbrooke S. Seltzer		and Adults		
48. Diabetes Associated with Endocrine and		Abbas E. Kitabchi and George A.		
Neurotransmitter Diseases	437	Burghen		
Harold E. Lebovitz		59. Hyperosmolar Hyperglycemic Nonketotic	545	
49. Nutritional Approaches in Diabetes Care	448	Coma		
Steven B. Leichter and Cynthia A. Chan-		Hugh J. Carroll and Man S. Oh		
dler		60. Metabolic Effects of Alcohol of Significance	552	
50. Oral Hypoglycemics and Drug Interactions		in the Diabetic		
with Them and Insulin	462	Gary G. Gordon and A. Louis Southren		
J. Edward Jackson and Rubin Bressler		61. Childhood Diabetes Mellitus	557	
		Lester Baker and Kenneth R. Lyen		

Section

83. Insu

P

84. Psy

S

85. Sexu

S

86. Cam

Index

62. Diagnosis and Treatment of Diabetes Mellitus in the Elderly	566	Eli A. Friedman	
Mayer B. Davidson			
63. Infection in Patients with Diabetes Mellitus or Obesity	577	73. End Stage Diabetic Nephropathy: Dialysis and Treatment	671
Robert W. Tofte and L. D. Sabath		Christina Comty and Fred Shapiro	
64. Surgery in Diabetes	584	74. Organ Replacement in End Stage Diabetic Nephropathy	679
Frank C. Wheelock, Jr., and Gary W. Gibbons		Thomas D. Davin, Frederick Goetz, and Carl Kjellstrand	
65. Pregnancy and Diabetes	593	75. Diabetic Neuropathy	687
Steven G. Gabbe		P. K. Thomas	
66. Infants of Diabetic Mothers	601	76. The Gastrointestinal System in Diabetes	697
Robert Schwartz, Richard M. Cowett, and John A. Widness		Jamie S. Barkin and Jay S. Skyler	
67. General (Extrapancreatic) Pathology in Diabetes Mellitus	611	77. Peripheral Vascular Disease	702
James I. Berkman		Herbert Dardik, Ibrahim M. Ibrahim, Barry C. Sussman, Mark Kahn, and Irving I. Dardik	
68. Pathology of the Pancreas in Diabetes	622	78. The Foot of the Diabetic	722
W. Gepts		Heinz I. Lippmann	
69. The Use of Isotopes in Diagnosis of Diabetes	634	79. Diabetes as a Risk Factor for Atherosclerotic Cardiovascular Disease	735
Dalton W. Shreeve		W. B. Kannel	
70. The Oral Complications of Diabetes	640	80. Heart Disease and Cerebrovascular Complications in Diabetes	741
Robert J. Genco and James A. McMullen		Manuel Tzagournis and James M. Falko	
71. Ocular Complications of Diabetes Mellitus	651	81. The Skin in Diabetes	749
George H. Bresnick		Ruth Kimmelstiel Freinkel	
72. Renal Consequences of Diabetes	664	82. "Pancreatic" Diabetes Mellitus	757
		Christopher D. Saudek	

Section 4: SOCIOECONOMIC ASPECTS OF DIABETES

83. Insurability and Employability of Diabetes	765	Luther B. Travis and Deborah Speegle Hull	
Paul S. Entmacher			
84. Psychological Aspects of Diabetes	769	87. Patient Education and Compliance in the Management of Diabetes	790
Stuart J. Youngner and Robin N. Moir		Donnell D. Etzwiler and Lois A. Mainman	
85. Sexual Problems in the Diabetic	777	88. Socioeconomic Impact of Diabetes Mellitus	799
Steven B. Levine		Leona V. Miller	
86. Camps, Camping, and Travel	784		
Index			805