

TABLE OF CONTENTS

Types & Diagnosis Of Diabetes	4
Type 1 Diabetes Management	23
Type 2 Diabetes Management	59
Special Concerns (Complications)	92
Referral Guidelines	119

Note: The authors, editors, and publisher have attempted to ensure that dosage recommendations are in agreement with those accepted at the time of publication. Dosage schedules may change from time to time in light of new information. For this reason, and also to avoid any inappropriate dosing due to a printing error, you are strongly urged to check the manufacturer's labeling before prescribing any drug mentioned in this publication.

TYPES & DIAGNOSIS OF DIABETES

VITAL STATISTICS OF DIABETES (2007 & 2011) ..	5
TYPES OF DIABETES	6
TYPE 1	7
TYPE 2	8
OTHER SPECIFIC ETIOLOGIES	9
GESTATIONAL DIABETES MELLITUS (GDM)	10
SCREENING	11
DIAGNOSTIC TESTING	12
DIAGNOSTIC CRITERIA	13
ORAL GLUCOSE TOLERANCE TEST	14
PRE-DIABETES	15
SELF-MONITORING BLOOD GLUCOSE	16
SMBG: TESTING METHODS	17
CONTINUOUS GLUCOSE MONITORING (CGM)	18
A1C (GLYCATED HEMOGLOBIN)	22

TYPE 1 DIABETES

VITAL STATISTICS (2007 & 2011)	24
CLINICAL PRESENTATION & DIAGNOSIS	25
PATHOGENESIS	26
TYPE 1: TREATMENT GOALS	27
PATIENT EDUCATION	29
INSULIN PREPARATIONS	30
INSULIN ACTION TIMES	31
INSULIN ADMINISTRATION & ABSORPTION	32
DEVICES & PENS	33
INSULIN REQUIREMENTS	34
TYPICAL INSULIN INJECTION REGIMEN	35
BASAL BOLUS THERAPY	36
CSII: INSULIN PUMP THERAPY	38
CSII: CONCERNS	40
CSII: METHODOLOGY	41
INSULIN ADJUSTMENTS	42
CORRECTION BOLUS	43
AIM FORMULAS	44
SMBG FREQUENCY	45
SMBG LEVELS	46
DIET	47
CALORIC NEEDS	48
EXERCISE	49
HYPOGLYCEMIA	51
DIABETIC KETOACIDOSIS (DKA)	53
DKA TREATMENT	54
SICK DAY MANAGEMENT	55
AMYLIN ANALOG PRAMLINTIDE	56
ISLET CELL AND PANCREAS TRANSPLANTS	58

TYPE 2 DIABETES

INSULIN RESISTANCE .....	.60
PATHOGENESIS .....	.62
DIABETES PREVENTION PROGRAM .....	.65
AACE/ADA TREATMENT GOALS .....	.66
SMBG FREQUENCY .....	.67
DIET THERAPY .....	.68
EXERCISE .....	.71
SULFONYLUREA AGENTS .....	.72
INSULIN SECRETAGOGUES GLINIDES .....	.74
THIAZOLIDINEDIONES (TZDs) .....	.75
BIGUANIDE .....	.77
ALPHA-GLUCOSIDASE INHIBITORS .....	.79
INCRETIN MIMETICS .....	.80
DPP-4 INHIBITOR .....	.85
COMBINATION ORAL AGENT THERAPY .....	.87
INSULIN THERAPY .....	.88
TYPICAL INSULIN REGIMENS (BASAL) .....	.89
TYPICAL INSULIN REGIMENS (BASAL/BOLUS) ..	.90
INSULIN & ORAL AGENTS .....	.91

SPECIAL CONCERNS (COMPLICATIONS)

PRECONCEPTION & PREGNANCY	93
ADA TARGET GLUCOSE	94
FETAL SURVEILLANCE	95
INSULIN MANAGEMENT	96
SURGERY	97
ADA HOSPITAL TREATMENT GUIDELINES ..	98
IV INSULIN	99
RETINOPATHY	100
TYPES OF RETINOPATHY	101
RETINOPATHY SURVEILLANCE: ADA	102
NEPHROPATHY	103
NEPHROPATHY TREATMENT	104
HYPERTENSION SCREENNG	105
NEUROPATHY DIAGNOSIS	106
NEUROPATHY TREATMENT	107
SEXUAL DYSFUNCTION	108
MACROVASCULAR DISEASE	109
PREVENTION OF ATHEROSCLEROSIS	110
HYPERLIPIDEMIA	111
FOOT CARE	113
TREATMENT OF FOOT INFECTIONS	114
INFLUENZA & PNEUMONIA	115
BARIATRIC SURGERY	116
PSYCHOLOGICAL ISSUES	117
DIABETES WEBSITES	118
REFERRAL GUIDELINES	119

VITAL STATISTICS OF DIABETES 2007 & 2011

25.8 million children and adults (8.3% of the U.S. population) have diabetes. 18.8 million are diagnosed, 7.0 million are undiagnosed* and 79 million have pre-diabetes*. 1.9 million new cases were diagnosed in 2010 (ages 20 or older).

Diabetes is the seventh leading cause of death in the U.S.

Diabetes is the leading cause of kidney failure, adult blindness, nontraumatic lower-extremity amputation, and impotence. Heart disease and stroke are two to four times more common in people with diabetes.

Evidence has shown that the risk of complications of diabetes can be greatly reduced when people with diabetes control their blood glucose, blood pressure and weight, reduce lipid abnormalities, exercise regularly, and stop cigarette smoking.

The total annual economic cost of diabetes in 2007 was estimated to be \$174 billion. Medical expenditures totaled \$116 billion and were comprised of \$27 billion for diabetes care, \$58 billion for indirect cost of diabetes (disability, work loss, premature mortality) and \$31 billion for excess general medical costs.

*The 2011 statistics use both fasting glucose and A1C levels to derive estimates for undiagnosed diabetes and pre-diabetes.

DIAGNOSTIC CRITERIA

DIAGNOSTIC CRITERIA FOR DIABETES MELLITUS IN NONPREGNANT INDIVIDUALS

- 1. A1C >6.5%.** The test should be performed in a laboratory using a method that is National Glycohemoglobin Standardization Program (NGSP) certified and standardized to the Diabetes Control and Complications Trial (DCCT) assay.
- 2. Symptoms of diabetes plus random plasma glucose concentration >200 mg/dl (11.1 mmol).** Classic symptoms include polyuria, polydipsia, or unexplained weight loss.
- 3. FPG >126 mg/dl (7 mmol).** Fasting is defined as no caloric intake for at least 8 h.
- 4. Two-hour PG >200 mg/dl (11.1 mmol) during an OGTT.** The test should be performed as described on card 14 using a 75-g glucose load.

Note: In the absence of unequivocal hyperglycemia, criteria 3 and 4 should be confirmed by repeat testing on a different day.

REFERRAL GUIDELINES

Refer the patient to a diabetes specialist and/or a diabetes management team:

- For diabetes education and training
- When the patient is unable to achieve treatment goals and desired glucose control (i.e., A1C remains >6.5%)
- For recurrent acute complications (DKA, hypoglycemia)
- For early or progressive chronic complications:
 - To ophthalmologist for retinopathy
 - To orthopedist or podiatrist for any foot problem, including deformity, ulcerations, etc.
 - To diabetologist or nephrologist for early nephropathy, including microalbuminuria or hypertension
- For preconception and pregnancy