Complete Summary

GUIDELINE TITLE

American Association of Clinical Endocrinologists medical guidelines for clinical practice for the management of diabetes mellitus. Diabetes and pregnancy.

BIBLIOGRAPHIC SOURCE(S)

AACE Diabetes Mellitus Clinical Practice Guidelines Task Force. AACE diabetes mellitus guidelines. Diabetes and pregnancy. Endocr Pract 2007 May-Jun;13(Suppl 1):55-9. [19 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previously published version: American Association of Clinical Endocrinologists, American College of Endocrinology. Medical guidelines for the management of diabetes mellitus: the AACE system of intensive diabetes self-management--2002 update. Endocr Pract 2002 Jan-Feb;8(Suppl 1):40-82.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Diabetes mellitus, including:

- Type 1 diabetes
- Type 2 diabetes
- Gestational diabetes

GUIDELINE CATEGORY

Diagnosis
Management
Risk Assessment
Screening
Treatment

CLINICAL SPECIALTY

Cardiology
Endocrinology
Family Practice
Internal Medicine
Nursing
Nutrition
Obstetrics and Gynecology
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Dietitians
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To provide clinicians with clear and accessible guidelines to care for patients with diabetes mellitus

TARGET POPULATION

Children, adolescents, and adults with or at risk of developing diabetes mellitus

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment/Screening

1. Prepregnancy counseling
    - Information and skills relevant to pregnancy management, including optimal control of HbA_{1c} level, blood glucose concentration, and blood pressure.
    - Discontinue use of oral glucose-lowering drugs, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, statins, and fibrates
    - Folic acid supplementation
    - Assess for retinopathy, nephropathy, and thyroid function
2. Screening for undiagnosed or new (gestational) diabetes during pregnancy

Management/Treatment

1. Diabetes management throughout pregnancy

- Assessment of diabetes control, risk and presence of diabetic complications, other medical conditions
- Monitoring and adjustment of insulin therapy to achieve target glucose levels
- Medical nutrition therapy and education

2. Labor and delivery
    - Intrapartum insulin therapy
    - Management of decreased insulin resistance during labor
    - Prevention of hypoglycemia
    - Care of the newborn
    - Screening for diabetes after delivery

MAJOR OUTCOMES CONSIDERED

- Plasma glucose concentration
- Incidence of gestational diabetes mellitus
- HbA_{1c} levels
- Hypoglycemia in mother and newborn

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases
Searches of Unpublished Data

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

References were obtained by performing a computerized search of the literature using PubMed and other search engines; scanning incoming journals in the medical library; and reviewing references in publications relevant to diabetes including review articles, leading textbooks, and syllabi from national and international meetings.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Substantiation in Evidence-Based Medicine[a]

Level-of-Evidence Category[b]	Study Design or Information Type	Comments
1	Randomized controlled trials Multicenter trials Large meta-analyses with quality ratings	Well-conducted, well-controlled trials at 1 or more medical centers Data derived from a substantial number of trials with adequate power; substantial number of subjects and outcome data Consistent pattern of findings in the population for which the recommendation is made – generalizable results Compelling nonexperimental, clinically obvious evidence (e.g., use of insulin in diabetic ketoacidosis); "all or none" evidence
2	Randomized controlled trials Prospective cohort studies Meta-analyses of cohort studies Case-control studies	Limited number of trials, small number of subjects Well-conducted studies Inconsistent findings or results not representative for the target population
3	Methodologically flawed randomized controlled trials Nonrandomized controlled trials Observational studies Case series or case reports	Trials with 1 or more major or 3 or more minor methodologic flaws Uncontrolled or poorly controlled trials Retrospective or observational data Conflicting data with weight of evidence unable to support a final recommendation
4	Expert consensus Expert opinion based on experience Theory-driven conclusions Unproven claims Experience-based information	Inadequate data for inclusion in level-of-evidence categories 1, 2, or 3; data necessitates an expert panel's synthesis of the literature and a consensus

[a]Adapted from the American Association of Clinical Endocrinologists Protocol for the Standardized Production of Clinical Practice Guidelines.

[b]Level-of-evidence categories 1 through 3 indicate scientific substantiation or proof; level-of-evidence category 4 indicates unproven claims.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The American Association of Clinical Endocrinologists (AACE) Task force members reviewed selected reports and studies and rated the clinical evidence from these sources.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

When possible, clinical recommendations put forth in the clinical practice guideline have been assigned a letter grade (A-D) based on the level of scientific substantiation (see "Rating Scheme for the Strength of the Recommendations"). However, when task force members determined that clinical judgment regarding a recommendation outweighed study findings or a recommendation lacked supporting studies, they assigned the final grade based on their extensive clinical experience and expertise in diabetes management. An A grade is the strongest recommendation, and a D grade is the weakest recommendation. These recommendations include subjective components such as: (a) judgment regarding whether results from a particular study are conclusive; (b) the relative weighing of positive and negative conclusive study results; (c) assignment of evidence rating when certain study methodologies are controversial; (d) the impact of risk-benefit analysis; (e) the impact of cost-effectiveness; (f) assessment of geographical differences in practice standards and availability of certain technologies; (g) assessment of ethnic, racial, and genetic differences in pathophysiology; (h) incorporation of patient preferences; and (i) incorporation of physician preferences.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Recommendation Grades in Evidence-Based Medicine[a]

Grade	Description
A	Homogeneous evidence from multiple well-designed randomized controlled trials with sufficient statistical power Homogeneous evidence from multiple well-designed cohort controlled trials with sufficient statistical power

Grade	Description
	≥1 conclusive level of evidence category 1 publications demonstrating benefit >> outweighs risk
B	Evidence from at least one large well-designed clinical trial, cohort or case-controlled analytic study, or meta-analysis No conclusive level of evidence category 1 publication; ≥1 conclusive level of evidence category 2 publications demonstrating benefit >> risk
C	Evidence based on clinical experience, descriptive studies, or expert consensus opinion No conclusive level 1 or 2 publication; ≥1 conclusive level of evidence category 3 publications demonstrating benefit >> risk No conclusive risk at all and no conclusive benefit demonstrated by evidence
D	Not rated No conclusive level of evidence category 1, 2, or 3 publication demonstrating benefit >> risk Conclusive level of evidence category 1, 2, or 3 publication demonstrating risk >> benefit

[a]Adapted from the American Association of Clinical Endocrinologists Protocol for the Standardized Production of Clinical Practice Guidelines.

COST ANALYSIS

Published cost analyses were reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A separate panel composed of American Association of Clinical Endocrinologists (AACE) members with expertise in diabetes reviewed the compiled report. Final recommendations included in this clinical practice guideline represent a consensus among the task force members and have been approved by reviewers, the AACE Publications and Executive Committees, and the AACE Board of Directors.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence (1–4) and the recommendation grades (A–D) are defined at the end of the "Major Recommendations" field.

Diabetes and Pregnancy

Provide Prepregnancy Counseling

- Identify the possibility of pregnancy annually by directly questioning all fertile women of childbearing age with diabetes mellitus; provide contraceptive advice when appropriate (***grade A***).
- Offer prepregnancy counseling to all women with diabetes mellitus who are considering pregnancy (***grade A***); counseling should address:
    - Information and skills relevant to the management of pregnancy in a woman with diabetes mellitus (***grade B***)
    - The need for optimal control of the HbA_{1c} level (<6%), if safely achievable, (***grade A***) and blood glucose concentration between 60 mg/dL (fasting) and 120 mg/dL (1 hour after a meal) (***grade A***)
    - The need for optimal blood pressure control (<130/80 mm Hg) (***grade A***)
    - The importance of a healthy lifestyle, including advice on nutrition, exercise, smoking cessation, and alcohol use (***grade B***)
- Discontinue oral glucose-lowering drugs and start insulin if needed (***grade A***).
- Discontinue angiotensin-converting enzyme inhibitors and angiotensin receptor blockers; use methyldopa, hydralazine, nifedipine extended release, or labetalol (***grade A***).
- Discontinue statins and fibrates (***grade A***).
- Assess the patient for retinopathy, nephropathy, and thyroid function (***grade A***).
- Initiate folic acid supplementation to reduce the risk of neural tube defects (***grade A***).

Screen for Undiagnosed or New (Gestational) Diabetes During Pregnancy

- In all pregnant women, measure fasting glucose at the first prenatal visit (no later than week 20). Perform a 75-g oral glucose tolerance test if the fasting glucose concentration is greater than 85 mg/dL (***grade A***).
    - Initiate medical nutritional therapy immediately if the diagnosis of gestational diabetes is established (***grade B***).
    - Initiate insulin therapy if the patient is following an optimal diet but the self-monitored glucose levels reveal fasting glucose concentrations greater than 90 mg/dL and/or if postprandial glucose concentrations are greater than 120 mg/dL 1 hour after the first bite of food at each meal (***grade A***).

Diabetes Management Throughout Pregnancy

- Frequently assess the status of diabetes control, risk for and presence of diabetic complications, and the presence of other medical conditions (including weight gain) (***grade B***).
    - Strive for a HbA_{1c} level less than 6%; blood glucose concentrations should remain between 60 to 90 mg/dL (fasting) and less than 120 mg/dL (1 hour after the first bite of food at each meal) (***grade A***).
    - Monitor weight gain and blood pressure and advise and treat the patient accordingly; blood pressure should be maintained at less than

130/80 mm Hg, avoid using renin-angiotensin system blocking drugs (***grade A***).

- Persistently monitor and adjust insulin therapy to achieve all glucose targets (***grade A***).
    - Initiate a basal-bolus insulin regimen if a patient cannot maintain glucose targets with diet alone; this regimen may include either neutral protamine Hagedorn (NPH) insulin (basal) and rapid-acting insulin at meals or subcutaneous insulin infusion with an insulin pump (***grade B***).
    - Patients should intensively monitor blood glucose levels (***grade A***):
        - Diet only—instruct patients to assess blood glucose concentration 4 times daily, prebreakfast and 1 hour after the first bite of food at each meal (***grade A***)
        - Insulin therapy—instruct patients to assess blood glucose concentrations 6 times daily, before each meal to determine insulin dosage correction and 1 hour after the first bite of food at each meal (***grade A***)
    - Accurate timing of glucose testing at meals is critical to accurately assess glucose control (***grade B***).
    - Expect insulin requirements to rise as pregnancy progresses; insulin requirements may be decreased by hyperemesis; steroid therapy increases insulin requirements (***grade B***).
- Offer medical nutrition therapy and education; if the patient is overweight, advise a diet suitable for someone of optimal weight and encourage moderate exercise such as armchair exercises (***grade A***).
    - Management by a health care team is needed to assess and reinforce patient understanding of diabetes management including dietary needs and considerations, knowledge of glucose targets, current pharmacologic therapy, and use of self-monitoring of blood glucose (timing and interpretation of test results and appropriate response) (***grade B***).

Labor and Delivery

- Maternal hyperglycemia is the main cause of neonatal hypoglycemia; therefore, intrapartum maintenance of maternal euglycemia is essential (***grade B***).
- Insulin is still required before active labor and can be given subcutaneously or by intravenous infusion with a goal of maintaining blood glucose concentrations between 70 to 90 mg/dL (***grade B***).
- As the mother enters active labor, insulin resistance rapidly decreases because of the energy expenditure of labor as a form of strenuous exercise; as a result, insulin requirements drop to zero (see Table 9.1 and 9.2 below) present protocols for adjusting intrapartum intravenous solutions and insulin administration during labor and the postpartum period in women with insulin-requiring diabetes mellitus (Table 9.3 below lists sample glucose infusion rates in active labor) (***grade B***).
- To prevent hypoglycemia:
    - Infuse glucose at a rate of 2.5 mg/kg per min (***grade C***).
    - Measure the capillary blood glucose concentration hourly (***grade C***).
    - Double the glucose infusion for the next hour if the blood glucose value is less than 60 mg/dL (***grade C***).

    - Glucose values greater or equal to 120 mg/dL require the administration of regular insulin subcutaneously or intravenously until the blood glucose value falls to 70 to 90 mg/dL; now, the insulin dose is titrated to maintain normoglycemia while glucose is infused at a rate of 2.5 mg/kg per min (***grade C***).
    - Do not give bolus doses of glucose because they can raise maternal blood glucose concentrations and increase the risk of neonatal hypoglycemia, fetal hypoxia, and fetal or neonatal acidosis (***grade A***).
    - Anticipate changed insulin requirements, and thus the need for more frequent glucose monitoring, if the patient is continuing insulin therapy postpartum and during lactation (***grade C***).
- Provide appropriate care and facilities for the newborn (***grade B***).
- At 45 to 60 days after delivery, screen for diabetes in women who developed new diabetes in pregnancy; if there is no evidence of diabetes, advise the patient of the high risk of future diabetes and educate the patient about preventative lifestyle measures; advise the patient to be examined for diabetes annually because women with gestational diabetes mellitus (GDM) have a 50% risk of developing type 2 diabetes mellitus (T2DM) within 5 years (10% conversion per year) (***grade A***)

Table 9.1: Protocol for Adjusting Intrapartum Intravenous Solutions and Insulin Administration During Labor and the Postpartum Period in Women With Insulin-Requiring Diabetes Mellitus Treated With Insulin Pump Therapy[a]

Blood Glucose Concentration, mg/dL	Adjustment
≤70	D_{10} normal saline[b], 100 mL/h for 10 to 15 min
71-100	D_5 normal saline[c], 100 mL/h
101-120	Normal saline, 100 mL/h
>121	Normal saline plus regular insulin intravenously or bolus analog subcutaneously as percent of TDIR
121-140	Normal saline, 100 mL/h plus 3% of TDIR
>141	Normal saline, 100 mL/h plus 6% of TDIR

Abbreviation: TDIR, total daily insulin requirement.

[a]Basal insulin infusion rate to be reduced in half. At term, the insulin requirement is 1.0 units/kg/d; thus, 3% of this dose would be 3 units in a woman weighing 100 kg at term.

[b]D_{10} normal saline is 10% dextrose in normal (isotonic saline).

[c]D_5 normal saline is 5% dextrose in normal (isotonic) saline.

Table 9.2: Protocol for Adjusting Intrapartum Intravenous Solutions and Insulin Administration in Women With Insulin-Requiring Diabetes Mellitus Based on Hourly Blood Glucose Measurement[a]

Blood Glucose Concentration, mg/dL	Adjustment
≤60	Twice the target rate[b]
61-100	Target rate[b] or D_5 normal saline[c]

Blood Glucose Concentration, mg/dL	Adjustment
101-120	Normal saline, 100 mL/h
121-140	Normal saline, 100 mL/h plus 3% of TDIR
≥141	Normal saline, 100 mL/h plus 6% of TDIR

Abbreviation: TDIR, total daily insulin requirement.

[a]Discontinue neutral protamine Hagedorn (NPH) insulin administration.

[b]Glucose infusion rate is 2.55 mg/kg of pregnant weight/min.

[c]D_5 normal saline is 5% dextrose in normal (isotonic) saline.

Table 9.3: Sample Glucose Infusion Rates for Women With Insulin-Requiring Diabetes Mellitus in Active Labor[a]

Weight, kg	Glucose, mg/min	D_5 normal saline[b], mL/min
50	127.5	2.55
60	153.0	3.06
70	178.5	3.56
80	204.0	4.08
90	229.5	4.58
100	255.0	5.10
110	280.5	5.60
120	306.0	6.12

[a]The rate of infusion is equal to dextrose 2.55 mg/kg/min.

[b]D_5 normal saline is 5% dextrose in normal (isotonic) saline.

Definitions:

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Level-of-Evidence Category[b]	Study Design or Information Type	Comments
1	Randomized controlled trials Multicenter trials Large meta-analyses with quality ratings	Well-conducted, well-controlled trials at 1 or more medical centers Data derived from a substantial number of trials with adequate power; substantial number of subjects and outcome data Consistent pattern of findings in the population for which the recommendation is made – generalizable results Compelling nonexperimental, clinically obvious evidence (e.g., use of insulin in diabetic

Level-of-Evidence Category[b]	Study Design or Information Type	Comments
		ketoacidosis); "all or none" evidence
2	Randomized controlled trials Prospective cohort studies Meta-analyses of cohort studies Case-control studies	Limited number of trials, small number of subjects Well-conducted studies Inconsistent findings or results not representative for the target population
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[a]Adapted from the American Association of Clinical Endocrinologists Protocol for the Standardized Production of Clinical Practice Guidelines.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Intensive treatment of diabetes mellitus and conditions known to be risk factors can significantly decrease the development and/or progression of chronic complications.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Criticism that purely evidence-based clinical practice guidelines do not reflect real life because subjective input is stifled or precluded is addressed to some extent by the American Association of Clinical Endocrinologists (AACE) methodology for developing the guidelines. When the task force members judged that subjective factors influenced the grade of a recommendation to an extent that outweighed the available best evidence, this logic was explicitly described in the detailed discussion that follows each topic section's executive summary. Thus, the process of developing evidence-based recommendations and the incorporation of subjective components are transparent to the reader.
- These methods, nevertheless, have the following shortcomings: (a) reliance on some subjective measures, which compromises reproducibility; (b) dependence on the best available evidence, even if only one study is used to formulate a recommendation grade; and (c) dependence on task force primary authors to perform a comprehensive literature search. Multiple levels of review by both AACE-credentialed and non–AACE-credentialed experts from academia and clinical practice backgrounds serve to address these predicted shortcomings.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

AACE Diabetes Mellitus Clinical Practice Guidelines Task Force. AACE diabetes mellitus guidelines. Diabetes and pregnancy. Endocr Pract 2007 May-Jun;13(Suppl 1):55-9. [19 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Jan (revised 2007)

GUIDELINE DEVELOPER(S)

American Association of Clinical Endocrinologists - Medical Specialty Society
American College of Endocrinology - Medical Specialty Society

SOURCE(S) OF FUNDING

American Association of Clinical Endocrinologists (AACE)

GUIDELINE COMMITTEE

American Association of Clinical Endocrinologists (AACE) Diabetes Mellitus Clinical Practice Guidelines Task Force

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Task Force Members: Helena W. Rodbard, MD, FACP, MACE (*Chairperson*) Medical Director, Endocrine and Metabolic Consultants Past President, American Association of Clinical Endocrinologists Past President, American College of Endocrinology, Rockville, Maryland; Lawrence Blonde, MD, FACP, FACE, Director, Ochsner Diabetes Clinical Research Unit; Section on Endocrinology, Diabetes, and Metabolic Diseases Associate Residency Program Director, Department of Internal Medicine, New Orleans, Louisiana; Susan S. Braithwaite, MD, FACP, FACE, Clinical Professor of Medicine, University of North Carolina, Division of Endocrinology, Chapel Hill, NC; Elise M. Brett, MD, FACE, Assistant Clinical Professor of Medicine; Division of Endocrinology, Diabetes, and Bone Disease; Mount Sinai School of Medicine, New York, New York; Rhoda H. Cobin, MD, MACE, Clinical Professor of Medicine; Division of Endocrinology, Diabetes, and Bone Disease; Mount Sinai School of Medicine, Immediate Past President, American College of Endocrinology, Past President, American Association of Clinical Endocrinologists, New York, New York; Yehuda Handelsman, MD, FACP, FACE, Medical Director, Metabolic Institute of America, Senior Scientific Consultant, Metabolic Endocrine Education Foundation, Tarzana, California; Richard Hellman, MD, FACP, FACE, Clinical Professor of Medicine, University of Missouri-Kansas City School of Medicine, President, American Association of Clinical Endocrinologists, North Kansas City, Missouri; Paul S. Jellinger, MD, MACE, Professor of Medicine and Voluntary Faculty, University of Miami School of Medicine, Past President, American College of Endocrinology Past President, American Association of Clinical Endocrinologists, Hollywood, Florida; Lois G. Jovanovic, MD, FACE, CEO & Chief Scientific Officer, Sansum Diabetes Research Institute, Adjunct Professor Biomolecular Science and Engineering, University of California-Santa Barbara, Clinical Professor of Medicine, University of Southern California, Keck School of Medicine, Santa Barbara, CA; Philip Levy, MD, FACE, Clinical Professor of Medicine, University of Arizona College

of Medicine, Past President, American College of Endocrinology, Phoenix, Arizona; Jeffrey I. Mechanick, MD, FACP, FACE, FACN, Associate Clinical Professor of Medicine and Director of Metabolic Support; Division of Endocrinology, Diabetes, and Bone Disease; Mount Sinai School of Medicine, New York, New York; Farhad Zangeneh, MD, FACP, FACE, Assistant Clinical Professor of Medicine, George Washington University School of Medicine, Washington, DC, Endocrine, Diabetes and Osteoporosis Clinic (EDOC), Sterling, Virginia

Medical Writer: Christopher G. Parkin, MS

Reviewers: Lewis E. Braverman, MD; Samuel Dagogo-Jack, MD, FACE; Vivian A. Fonseca, MD, FACE; Martin M. Grajower, MD, FACP, FACE; Virginia A. LiVolsi, MD; Fernando Ovalle, MD, FACE; Herbert I. Rettinger, MD, FACE; Talla P. Shankar, MD, FACE; Joseph J. Torre, MD, FACP, FACE; Dace L. Trence, MD, FACE

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Dr. Lawrence Blonde reports that he has received grant/research support from Amylin Pharmaceuticals, Inc.; AstraZeneca LP; Bristol-Myers Squibb Company; Eli Lilly and Company; MannKind Corporation; Merck & Co., Inc.; Novo Nordisk Inc.; Novartis Corporation; Pfizer Inc.; and sanofi-aventis U.S. He has received speaker and consultant honoraria from Abbott Laboratories; Amylin Pharmaceuticals, Inc.; Eli Lilly and Company; GlaxoSmithKline; LifeScan, Inc.; Merck & Co., Inc.; Novartis, Novo Nordisk Inc.; Pfizer Inc.; and sanofi-aventis U.S. He has received consultant honoraria from Kos Pharmaceuticals, Inc. and U.S. Surgical. Dr. Blonde has also disclosed that his spouse is a stock shareholder of Amylin Pharmaceuticals, Inc. and Pfizer Inc., in an account that is not part of their community property.

Dr. Susan S. Braithwaite reports that she does not have any financial relationships with any commercial interests.

Dr. Elise M. Brett reports that her spouse is an employee of Novo Nordisk Inc.

Dr. Rhoda H. Cobin reports that she has received speaker honoraria from GlaxoSmithKline; Pfizer Inc.; sanofi-aventis U.S.; and Novartis and consultant honoraria from Abbott Laboratories.

Dr. Yehuda Handelsman reports that he has received speaker honoraria from Abbott Laboratories; Amylin Pharmaceuticals, Inc.; AstraZeneca LP; Bristol-Myers Squibb Company; GlaxoSmithKline; Merck & Co., Inc.; Novartis; and sanofi-aventis U.S. and consultant honoraria from Abbott Laboratories; Daiichi Sankyo, Inc.; Novartis; and sanofi-aventis U.S.

Dr. Richard Hellman reports that he has received speaker honoraria from Daiichi Sankyo, Inc. and Pfizer Inc. and research grants for his role as an independent contractor from Abbott Laboratories; Pfizer Inc.; and Medtronic, Inc.

Dr. Paul S. Jellinger reports that he has received speaker honoraria from Eli Lilly and Company; Merck & Co., Inc.; Novartis; Novo Nordisk Inc.; and Takeda Pharmaceuticals North America, Inc.

Dr. Lois G. Jovanovic reports that she has received research grants for her role as investigator from Eli Lilly and Company; DexCom Inc.; LifeScan, Inc.; Novo Nordisk Inc.; Pfizer Inc.; Roche Pharmaceuticals; sanofi-aventis U.S.; and Sensys Medical, Inc.

Dr. Philip Levy reports that he has received speaker honoraria from Abbott Laboratories; Amylin Pharmaceuticals, Inc.; GlaxoSmithKline; Eli Lilly and Company; Merck & Co., Inc.; Novo Nordisk Inc.; Novartis; Pfizer Inc.; and sanofi-aventis U.S. and research grants from Amylin Pharmaceuticals, Inc.; MannKind Corporation; Novo Nordisk Inc.; Pfizer Inc.; and sanofi-aventis U.S.

Dr. Jeffrey I. Mechanick reports that he does not have any financial relationships with any commercial interests.

Dr. Helena W. Rodbard reports that she has received consultant honoraria from Ortho-McNeil, Inc.; Pfizer Inc.; sanofi-aventis U.S.; and Takeda Pharmaceuticals North America, Inc.; speaker honoraria from Abbott; GlaxoSmithKline; Merck & Co., Inc.; Novo Nordisk; Pfizer Inc.; and sanofi-aventis U.S. and research support from Biodel, Inc. and sanofi-aventis U. S.

Dr. Farhad Zangeneh reports that he has received speaker honoraria from Eli Lilly and Company; GlaxoSmithKline; Novartis; Novo Nordisk Inc.; Pfizer Inc.; Roche Pharmaceuticals; sanofi-aventis U.S.; and Takeda Pharmaceuticals North America, Inc.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previously published version: American Association of Clinical Endocrinologists, American College of Endocrinology. Medical guidelines for the management of diabetes mellitus: the AACE system of intensive diabetes self-management--2002 update. Endocr Pract 2002 Jan-Feb;8(Suppl 1):40-82.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Association of Clinical Endocrinologists (AACE) Web site.

Print copies: Available from the American Association of Clinical Endocrinologists (AACE), 1000 Riverside Avenue, Suite 205, Jacksonville, FL 32204.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- American Association of Clinical Endocrinologists protocol for standardized production of clinical practice guidelines. Endocrine Pract 2004 Jul-Aug; 10(4):353-61.

Electronic copies: Available in Portable Document Format (PDF) from the American Association of Clinical Endocrinologists (AACE) Web site.

Print copies: Available from the American Association of Clinical Endocrinologists (AACE), 1000 Riverside Avenue, Suite 205, Jacksonville, FL 32204.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on March 1, 2000. The summary was verified by the guideline developer as of March 8, 2000. This summary was updated on April 16, 2002. The information was verified by the guideline developer on November 11, 2002. This summary was updated by ECRI Institute on September 27, 2007. The updated information was verified by the guideline developer on November 12, 2007.

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Date Modified: 9/22/2008