Complete Summary

GUIDELINE TITLE

Weight management through lifestyle modification for the prevention and management of type 2 diabetes: rationale and strategies.

BIBLIOGRAPHIC SOURCE(S)

Klein S, Sheard NF, Pi-Sunyer X, Daly A, Wylie-Rosett J, Kulkarni K, Clark NG. Weight management through lifestyle modification for the prevention and management of type 2 diabetes: rationale and strategies. Diabetes Care 2004 Aug;27(8):2067-73. [105 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

- Type 2 diabetes mellitus
- Overweight (body mass index [BMI] 25.0-29.9 kilograms per meter squared [kg/m^2])
- Obesity (BMI $\geq$30.0 kg/m^2)

GUIDELINE CATEGORY

Management
Prevention

CLINICAL SPECIALTY

Endocrinology
Family Practice
Internal Medicine
Nutrition
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Dietitians
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To review the important role of weight management in the prevention and management of type 2 diabetes and to describe strategies for achieving and maintaining a healthy body weight through lifestyle modification

TARGET POPULATION

Overweight and obese individuals at risk of or with type 2 diabetes

INTERVENTIONS AND PRACTICES CONSIDERED

Weight management through lifestyle modification including:

- Diet
- Physical activity

MAJOR OUTCOMES CONSIDERED

- Weight loss
- Glycemic control (fasting blood glucose concentrations)
- Use of diabetes medications
- Risk factors for cardiovascular disease (blood pressure, lipid concentrations, serum markers of inflammation)
- Development of type 2 diabetes in high-risk groups

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

American Diabetes Association Statements are reviewed externally and also by the Professional Practice Committee for overall content.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Overweight and obesity are strongly linked to the development of type 2 diabetes and can complicate its management. Obesity is also an independent risk factor for hypertension and dyslipidemia as well as cardiovascular disease, which is the major cause of death in those with diabetes. Moderate weight loss improves glycemic control, reduces cardiovascular disease risk, and can prevent the development of type 2 diabetes in those with pre-diabetes. Therefore, weight loss is an important therapeutic strategy in all overweight or obese persons who have type 2 diabetes or are at risk for developing diabetes.

Specific Recommendations

- Weight loss is recommended for all overweight (body mass index [BMI] 25.0-29.9 kilograms per meter squared [kg/m^2]) or obese (BMI $\geq$30.0 kg/m^2) adults who have, or who are at risk for developing, type 2 diabetes.
- The primary approach for achieving weight loss is therapeutic lifestyle change, which includes a reduction in energy intake and an increase in physical activity.
- A moderate decrease in caloric intake (500-1,000 kilocalories per day [kcal/day]) will result in a slow but progressive weight loss (1-2 pounds per week). For most patients, weight loss diets should supply at least 1,000-1,200 kcal/day for women and 1,200-1,600 kcal/day for men.
- Overweight or obese patients with diabetes are encouraged to adopt the dietary recommendations known to reduce the risk of coronary heart disease (outlined in Tables 3 and 4 of the original guideline document). In conjunction with a moderate reduction in caloric intake (500-1,000 kcal/day), this diet is likely to result in moderate weight loss as well as improvement in cardiovascular risk factors. Dietary guidance should be tailored to each person, allowing for individual food preferences and approaches to reducing caloric intake.
- Physical activity is an important component of a comprehensive weight management program. Regular, moderate-intensity physical activity enhances long-term weight maintenance. Regular activity also improves insulin sensitivity, glycemic control, and selected risk factors for cardiovascular disease (i.e., hypertension and dyslipidemia), and increased aerobic fitness decreases the risk of coronary heart disease.
- Initial physical activity recommendations should be modest, based on the patient's willingness and ability, gradually increasing the duration and frequency to 30 to 45 minutes of moderate aerobic activity, 3 to 5 days per week, when possible. Greater activity levels of at least 1 hour per day of moderate (walking) or 30 minutes per day of vigorous (jogging) activity may be needed to achieve successful long-term weight loss.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Benefits of Weight Loss

- Moderate weight loss (5% of body weight) can improve insulin action, decrease fasting blood glucose concentrations, and reduce the need for diabetes medications.
- Weight loss has important additional health benefits in patients with diabetes because it improves other risk factors for cardiovascular disease by decreasing blood pressure, improving serum lipid concentrations (decrease in serum triglycerides, total cholesterol, and low-density lipoprotein [LDL] cholesterol and increase in serum high-density lipoprotein [HDL] cholesterol concentrations), and reducing serum markers of inflammation.

Benefits of Physical Activity

Regular exercise and aerobic fitness improve insulin sensitivity and glycemic control, may decrease the risk of developing diabetes, and may reduce overall mortality in patients who have type 2 diabetes.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Although many different dietary approaches may result in short-term weight loss, the limitation of most diets is poor long-term compliance and weight regain. The optimal dietary macronutrient composition that facilitates lasting and safe weight loss is not known.

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)

Klein S, Sheard NF, Pi-Sunyer X, Daly A, Wylie-Rosett J, Kulkarni K, Clark NG. Weight management through lifestyle modification for the prevention and management of type 2 diabetes: rationale and strategies. Diabetes Care 2004 Aug;27(8):2067-73. [105 references] PubMed

ADAPTATION

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

DATE RELEASED

2004 Aug

GUIDELINE DEVELOPER(S)

American Diabetes Association - Professional Association
American Society for Clinical Nutrition - Professional Association
North American Association for the Study of Obesity - Professional Association

SOURCE(S) OF FUNDING

American Diabetes Association (ADA)

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Samuel Klein, MD, Division of Geriatrics and Nutritional Sciences and Center for Human Nutrition, Washington University School of Medicine, St. Louis, Missouri; Nancy F. Sheard, SCD, RD, Department of Family Practice,

University of Vermont, Burlington, Vermont; Xavier Pi-Sunyer, MD, MPH, Division of Endocrinology, Diabetes and Nutrition, St. Luke's—Roosevelt Hospital Center, Columbia University College of Physicians and Surgeons, New York New York; Anne Daly, MS, RD, BC-ADM, CDE, Springfield Diabetes & Endocrine Center, Springfield, Illinois; Judith Wylie-Rosett, EDD, RD, Division of Health, Behavior and Nutrition, Albert Einstein College of Medicine, Bronx, New York; Karmeen Kulkarni, MS, RD, BC-ADM, CDE, St Mark's Diabetes Center, Salt Lake City, Utah; Nathaniel G. Clark, MD, MS, RD, American Diabetes Association, Alexandria, Virginia

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Samuel Klein, MD is a member of the Obesity and Diabetes Educational Council, which is funded by an unrestricted educational grant provided by Roche Laboratories, is on the Enteromedics Medical Advisory Board, has received honoraria from Merck, and has received research support from Transneuronix.

Judith Wylie-Rosett, EDD, RD has received research funding from the Dr. Robert C. Atkins Foundation.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Diabetes Association (ADA) Web site.

Print copies: Available from the American Diabetes Association, 1701 North Beauregard Street, Alexandria, VA 22311.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on April 18, 2005.

COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is copyrighted by the American Diabetes Association (ADA).

For information on guideline reproduction, please contact Alison Favors, Manager, Rights and Permissions by e-mail at permissions@diabetes.org.

For information about the use of the guidelines, please contact the Clinical Affairs Department at (703) 549-1500 ext. 1692.

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 10/6/2008