THE JOURNAL OF CLINICAL AND APPLIED RESEARCH AND EDUCATION

Diabetes Car

VOLUME 17 NUMBER 3

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MARCH 1994

American Diabetes Association®

ISSN 0149-5992

ames

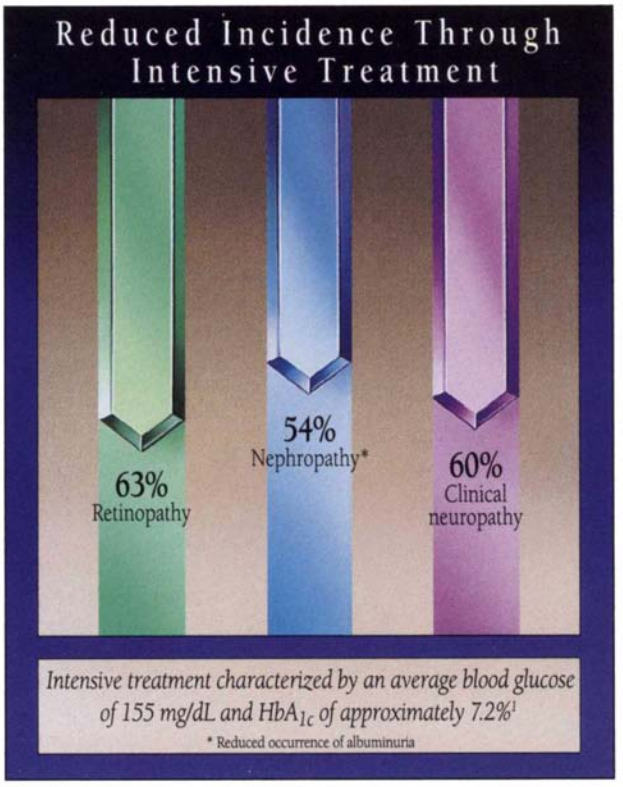
HbA1c

As soon as possible for patient benefit

The importance of hemoglobin A_{1c} as an indicator of long-term blood glucose control is supported by recent findings of the Diabetes Control and Complications Trial (DCCT). By reflecting patient blood glucose levels over a two- to three-month period, HbA_{1c} values can signal the need for adjustments to bring blood glucose to near normal levels.

Nine-year trial establishes link between diabetes control and complications

The DCCT study concludes that intensive diabetes control, which includes frequent measurement of HbA_{1c}, can reduce the risk of vascular complications by an average of 60%.[1] Retinopathy, nephropathy, and neuropathy were dramatically reduced in the intensive control group as compared with a standard treatment group.[2]



Intensive treatment yields significant results

To achieve and maintain near normal blood glucose, intensive control patients tested blood glucose four or more times a day.[2] Average HbA_{1c} levels were substantially lower than those of patients receiving conventional therapy.[2]

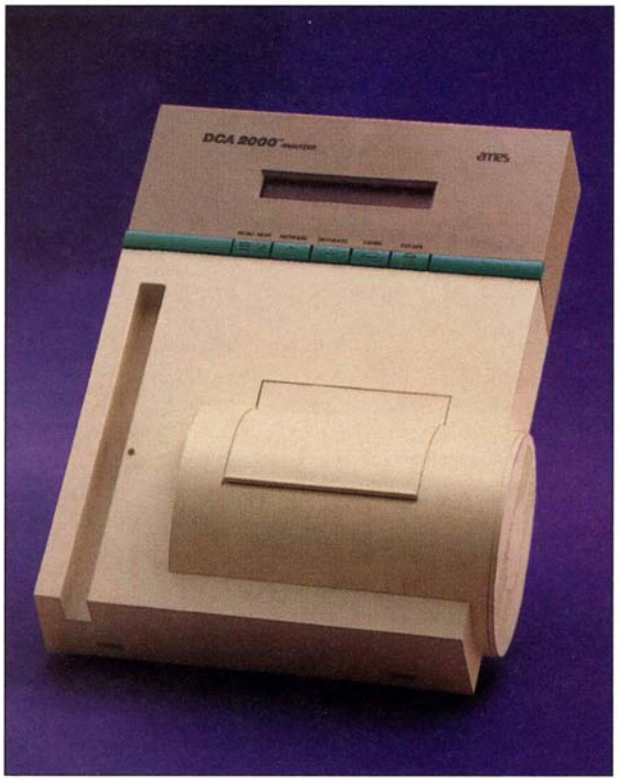
ASAP

As soon as possible for in-office convenience

There may be no better time to discuss HbA_{1c} results and blood glucose control than during the patient's clinical visit.[3] The DCA 2000® Analyzer provides results in nine minutes, allowing time for in-office consultation about adjustments that can improve diabetes control.

Fast, easy procedure is ideal for regular HbA_{1c} testing

A capillary holder collects just 1 µL of blood from a fingerstick. The filled holder is inserted into a reagent cartridge which is placed into the analyzer. Results are automatically displayed within minutes. In-office testing eliminates telephone callbacks and days of waiting for send-out results.



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For more information about the DCA 2000 Analyzer, contact your Miles representative. Or call toll-free, 1-800-445-5901 to have a representative contact you.

References
1. ADA position statement: Implications of the Diabetes Control and Complications Trial. Approved by the Executive Committee of the Board of Directors; June 1993. 2. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med.* 1993;329:977-986. 3. Mazze R, Strock E, Bergenstal R, et al. Intensified insulin therapy using rapid HbA_{1c} determination in conjunction with staged diabetes management. *Diabetes.* 1993;42(suppl 1):56A. Abstract.

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THE JOURNAL OF CLINICAL AND APPLIED RESEARCH AND EDUCATION

VOLUME 17 NUMBER 3

Diabetes Care

Diabetes Care is a journal for the health-care practitioner that is intended to increase knowledge, stimulate research, and promote better management of people with diabetes mellitus. To achieve these goals, the journal publishes original articles on human studies in the areas of epidemiology, clinical trials, behavioral medicine, nutrition, education, health-care delivery, medical economics, and clinical care. The journal also publishes clinically relevant review articles, clinical observations, letters to the editor, and public health/medical news or points of view. Topics covered are of interest to clinically oriented physicians, researchers, epidemiologists, psychologists, diabetes educators, and other professionals.

All manuscripts and other editorial correspondence should be sent by first class mail to Allan L. Drash, MD, Editor, *Diabetes Care*, Children's Hospital, Rangos Research Center, 3705 Fifth Avenue, Pittsburgh, PA 15213; (412) 692-5851. Manuscripts and correspondence regarding review articles should be sent to Ralph A. DeFronzo, MD, Editor, *Diabetes Reviews*, Department of Medicine, Division of Diabetes, UT-HSCSA, 7703 Floyd Curl Drive, San Antonio, TX 78284.

Diabetes Care publishes only original material. When submitting a manuscript, authors must state in their transmittal letter that the material has not been previously published or is not currently being submitted to another journal.

Manuscripts should be prepared in accord with the requirements specified in the document "Uniform Requirements for Manuscripts Submitted to Biomedical Journals," *New England Journal of Medicine* 324:424–428, 1991. "Instructions for Authors" containing specifications for manuscript preparation appears in the January and July issues.

Diabetes Care (ISSN 0149-5992) is published monthly by the American Diabetes Association, Inc., 1660 Duke Street, Alexandria, VA 22314. Individual subscription rates are $75 in the U.S., Canada, and Mexico (for Canada add 7% GST) and $130 for all other countries. Professional membership includes $50 designated for *Diabetes Care*. Single issues are $8 in the U.S., Canada, and Mexico (Canada add 7% GST) and $24.75 in all other countries. Second class postage paid at Alexandria, VA 22314, and at additional mailing offices. POSTMASTER: Send change of address to *Diabetes Care*, American Diabetes Association, Inc., Journal Subscriptions, Dept. 0028, Washington, DC 20073-0028.

Diabetes Care is listed in Science Citation Index, Current Contents/Life Sciences, Current Contents/Clinical Medicine, SCISEARCH, ISI/BIOMED databases, and Automatic Subject Citation Alert. *Diabetes Care* is available online on BRS Colleague. For more information call 800-955-0906. It is also available in machine-readable format from University Microfilms International. *Diabetes Care* is printed on acid-free paper starting with Vol. 11(1), 1988.

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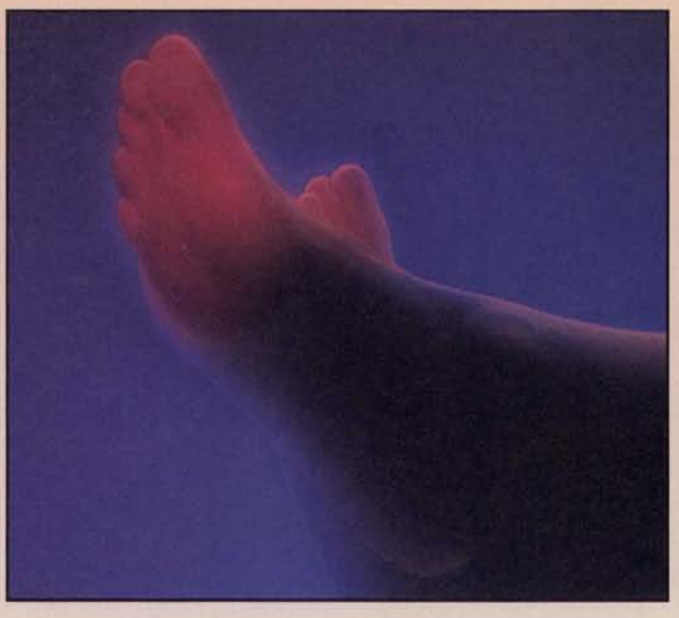
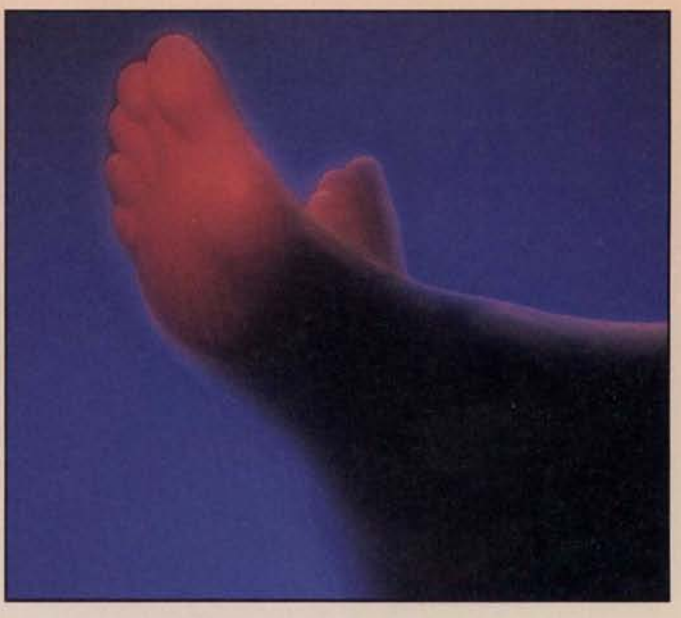
MARCH AUTHOR INDEX
(VOLUME 17, NUMBER 3)

NOTICE TO AUTHORS

The American Diabetes Association will begin charging authors $50 per printed page beginning with articles published in the September 1994 issues of *Diabetes* and *Diabetes Care*. These charges will partially defray the rising costs of publication. Although editorial consideration and acceptance of a paper is in no way related to payment of a page charge, it is expected that authors will pay the page charge. In extraordinary cases, upon appeal by the author, the Publications Policy Committee may waive the page charge.

Zostrix®-HP... For Burning, Throbbing, Of Diabetic





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Description: Zostrix/Zostrix-HP contain capsaicin in an emollient base containing benzyl alcohol, cetyl alcohol, glyceryl monostearate, isopropyl myristate, polyoxyethylene stearate blend, purified water, sorbitol solution and white petrolatum. Capsaicin is a naturally occurring substance derived from plants of the Solanaceae family with the chemical name trans-8-methyl-N-vanillyl-6-nonenamide. Capsaicin is a white crystalline powder with a molecular weight of 305.4. It is practically insoluble in water but very soluble in alcohol, ether and chloroform.

Action: Although the precise mechanism of action of capsaicin is not fully understood, current evidence suggests that capsaicin renders skin and joints insensitive to pain by depleting and preventing reaccumulation of substance P in peripheral sensory neurons. Substance P is thought to be the principal chemomediator of pain impulses from the periphery to the central nervous system. In addition, substance P has been shown to be released into joint tissues and activate inflammatory mediators involved with the pathogenesis of rheumatoid arthritis.

Indication: Zostrix/Zostrix-HP are indicated for the temporary relief of pain from rheumatoid arthritis, osteoarthritis and relief of neuralgias such as the pain following shingles (herpes zoster) or painful diabetic neuropathy.

Warnings: FOR EXTERNAL USE ONLY. Avoid contact with eyes and broken (open) or irritated skin. Do not bandage tightly. If condition worsens, or does not improve after 28 days, discontinue use of this product and consult your physician. **Keep this and all drugs out of the reach of children.** In case of accidental ingestion, seek professional assistance or contact a Poison Control Center immediately.

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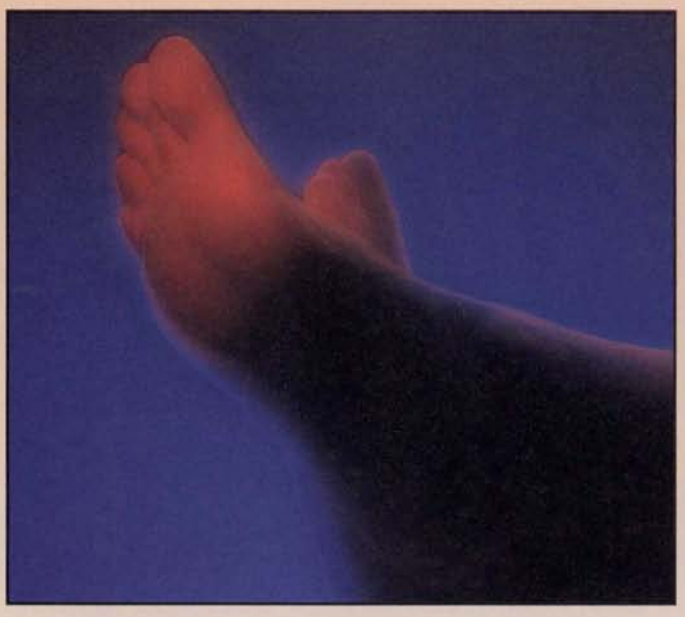

. . without systemic side effects[1,2,3,4]

- No dizziness, drowsiness, headache or nausea
- No need for laboratory monitoring
- No drug interactions

REFERENCES

1. Donofrio P, Walker F, Hunt V, et al, The Capsaicin Study Group. Treatment of painful diabetic neuropathy with topical capsaicin: a multicenter, double-blind, vehicle-controlled study. *Arch Intern Med.* 1991; 151:2225-2229.
2. Tandan R, Lewis GA, Badger GB, Fries TJ. Topical capsaicin in painful diabetic neuropathy: effect on sensory function. *Diabetes Care.* 1992;15(1):15-18.
3. Tandan R, Lewis GA, Krusinski PB, Badger GB, Fries TJ. Topical capsaicin in painful diabetic neuropathy: controlled study with long-term follow-up. *Diabetes Care.* 1992;15(1):8-14.
4. Dailey GE, Muchmore DP, Springer JW, et al, The Capsaicin Study Group. Effect of treatment with capsaicin on daily activities of patients with painful diabetic neuropathy. *Diabetes Care.* 1992;15(2):159-165.

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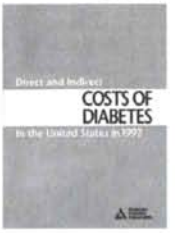

Takes a hard look at the economic impact of diabetes on our nation. If $90 billion seems like a lot to you, then you need to get this book. That's how much diabetes cost this country in medical expenses and lost productivity from premature death and disability in a single year. Softcover; 32 pp.; #PMDIC92
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This 3-hour program focuses on diabetes and its complications as risk factors for atherosclerotic vascular disease. Covers epidemiology, pathophysiology, assessment, and treatment for each risk factor. Includes case study discussion and presenter's script. 97 slides. #PMCEP3SS
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Nutrition Guide for Professionals

Nutrition plays a critical role in diabetes management and this guide will help you understand and effectively use meal planning in treating your diabetes patients. Emphasizes creation of individualized meal plans using the Exchange Lists for Meal Planning and alternative models. Softcover; 92 pp.; #PNNG
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Goals for Diabetes Education

Education is key in managing diabetes and this book provides you with a logical, thorough approach to the initial and in-depth phases of educating patients. Covers specific goals for each content area in a convenient checklist format. A must for any health care professional involved in treating patients with diabetes. Softcover; 48pp.; #PEGDE
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Teach your spanish-speaking patients with these exciting educational videos! Set covers the risk to Latinos of developing diabetes, the importance of screening, and the consequences of late diagnosis. Includes four 8-12 minute videos, a leader's guide, and patient education materials. #PVIDSPSET
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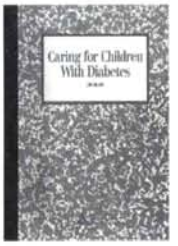

Teachers, school nurses, day-care providers, camp personnel—they all have responsibility for children, so when a child has diabetes, they need to know what's involved. This book will help them understand the disease and how to recognize and react to a diabetes emergency. Softcover; 16 pp. #PECARCH
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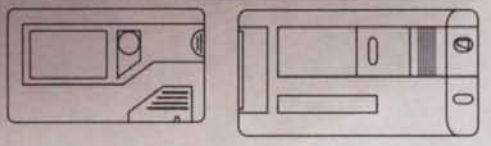

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Maximizing the Role of Nutrition in Diabetes Management

Overview

The American Diabetes Association, in cooperation with the Diabetes Care and Education Practice Group of The American Dietetic Association, has developed a continuing education program focusing on the role of nutrition in diabetes management. This program is directed toward health care professionals who serve the population with or at risk for diabetes. The program emphasizes the role of nutrition therapy in metabolic control of diabetes, and includes information obtained from the recently published DCCT (Diabetes Control and Complications Trial).

Target Audience

Dietitians, nurses and other health care professionals with an interest in the role of nutrition therapy in diabetes management.

Program

The full day program will include:

- DCCT: Nutrition Mandate
- Medical Framework for Nutrition Therapy
- Nutrition Research, Controversies and Applications for Clinical Practice
- Nutrition Therapy: A Blending of Sciences
- Diabetes Nutrition for Successful Outcomes in:
  - Long Term Care
  - Pregnancy: Gestational and Type I
  - The Medically Complicated Patient
  - Youth
- Nutrition Translation: Strategies for Success

Continuing Education Credits

Continuing education credits have been applied for through The American Dietetic Association.

Dates, Locations, and Information

This program is scheduled in twelve sites throughout the country from mid-March to mid-May 1994. For a list of sites, program information, or a registration form, contact Jill Thompson, Professional Programs Specialist, American Diabetes Association, 1660 Duke Street, Alexandria, VA 22314; phone: 800/232-3472 ext. 212; fax: 703/683-1839.

Registration Fee

The registration fee for this full day seminar is $50.00 which includes lunch, two coffee breaks, and participant materials.

This program is sponsored in part by an educational grant from Ross Products Division, Abbott Laboratories.

American Diabetes Association.

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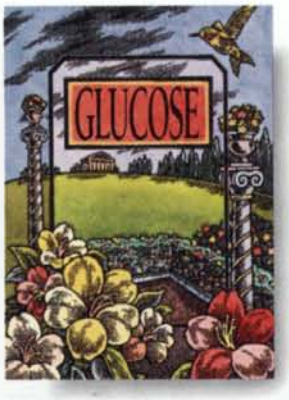
Diabetes patients reap the benefits when you plant the seeds of risk reduction.



Just as four-o'clock flowers open with regularity each day, regular blood glucose testing opens the way to lowering the risk of diabetes complications.

Frequent testing facilitates intensive control

The landmark Diabetes Control and Complications Trial (DCCT) concluded that intensive therapy reduces the long-term complications of diabetes. And frequent blood glucose determinations are a critical element of intensive therapy.

Self-monitoring provides an easy and reliable way to check blood glucose levels throughout the day. At physician office visits and in hospitals, laboratory blood glucose testing remains an important indicator of glycemic control, especially for patients who are just beginning to self-monitor.

Just as the flowers of the morning glory appear before the blooms of many other plants, fructosamine testing provides an early indication of glycemic control.

Monthly testing indicates early treatment response

Fructosamine testing provides an interim measurement of glycemic control to complement daily blood glucose testing and quarterly measurements of hemoglobin A_{1c}. Fructosamine reflects glycemic control over a 2 to 3 week period, so that evidence of hyperglycemic episodes is known within a month of their occurrence. Fructosamine's faster indication of response makes it a valuable enhancement to intensive patient management.

Changing seasons are reflected in the growth stages of the strawberry plant, just as the need for changes in treatment can be reflected by HbA_{1c} testing.

Quarterly testing signals need for adjustments

The ADA recommends testing hemoglobin A_{1c} every three months. Since HbA_{1c} values reflect average blood glucose over 60 to 90 days, fluctuations during this period can produce an elevated HbA_{1c} result. The DCCT study indicates that the progression of diabetes complications is greater when HbA_{1c} is elevated. Quarterly testing can signal the need for therapeutic intervention to reduce this risk.

As easy as it is to include kidney beans in a healthy diet, monitoring kidney health is equally easy through microalbuminuria testing.

Annual screening detects treatable nephropathy

The DCCT finding that intensive therapy reduces the risk of kidney damage supports the ADA recommendation for annual microalbuminuria (MAU) screening beginning five years after diagnosis. Early detection can identify patients in whom progression to nephropathy may be slowed through intensive therapy.

Boehringer Mannheim provides complete diabetes profiling reagents and instruments with laboratory reliability and accuracy. Blood glucose testing systems and microalbuminuria test strips further support quality care. Plant the seeds of reduced complications through tests to guide diabetes therapy. For more information, call 1-800-428-5030.

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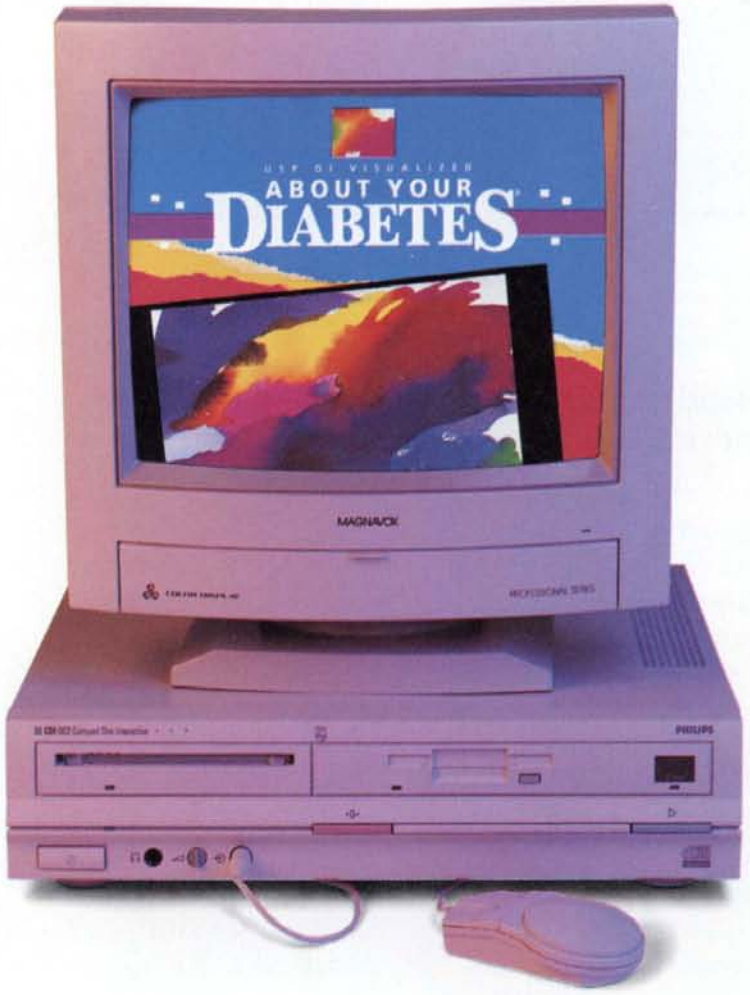

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If you are an ADA Professional Section member who receives *Diabetes*, please be aware that the ***Abstract Book*** (May supplement to *Diabetes*) is no longer automatically included as part of your subscription or Scientific Sessions registration. Formerly, abstract books were sent to *Diabetes* subscribers AND distributed to all Scientific Sessions registrants.

The *Abstract Book* is now available for an additional $10 for Professional Section Members. If you elected to receive the *Abstract Book* when you renewed your membership, you will receive it by mail before the next Scientific Sessions in New Orleans, June 1994. You should bring this copy to the meeting or use the pocket program that will be distributed free to every registrant. If you do not opt to get an advance copy, you may order a copy when you pre-register and pick it up at the meeting (see preliminary program registration form to be mailed under separate cover). To order your advance copy, fill out the form below, or call or fax your order to our Customer Service Department: tel. **(800) 232-3472** or **(703) 549-1500; fax (703) 549-6995.**

All orders must be received at the National Center no later than **April 1, 1994**, to ensure delivery before the meeting. For current nonmember subscribers to *Diabetes*, please note that the fee to receive the *Abstract Book* was automatically included in the price of your subscription.

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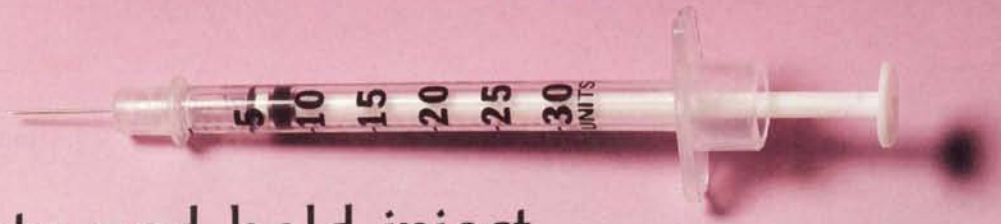

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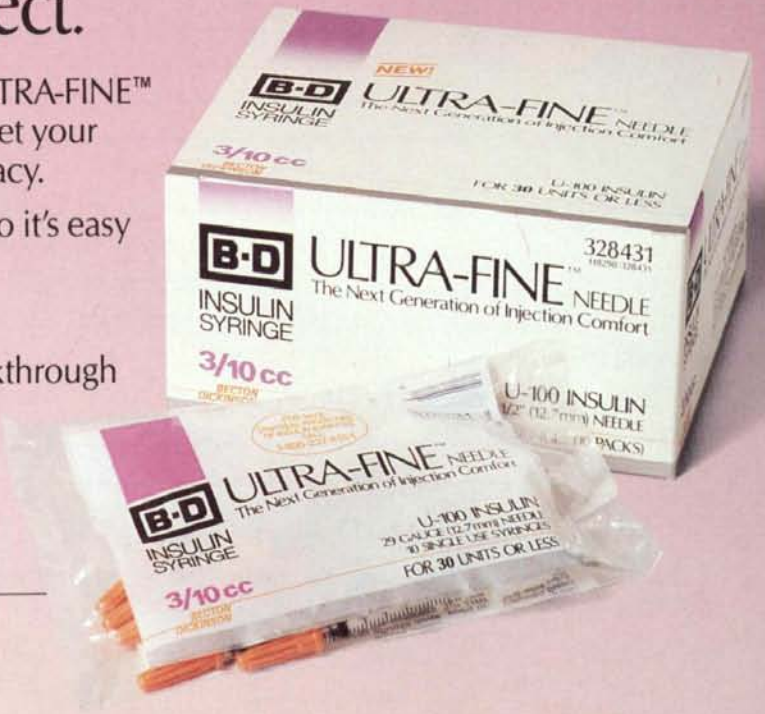

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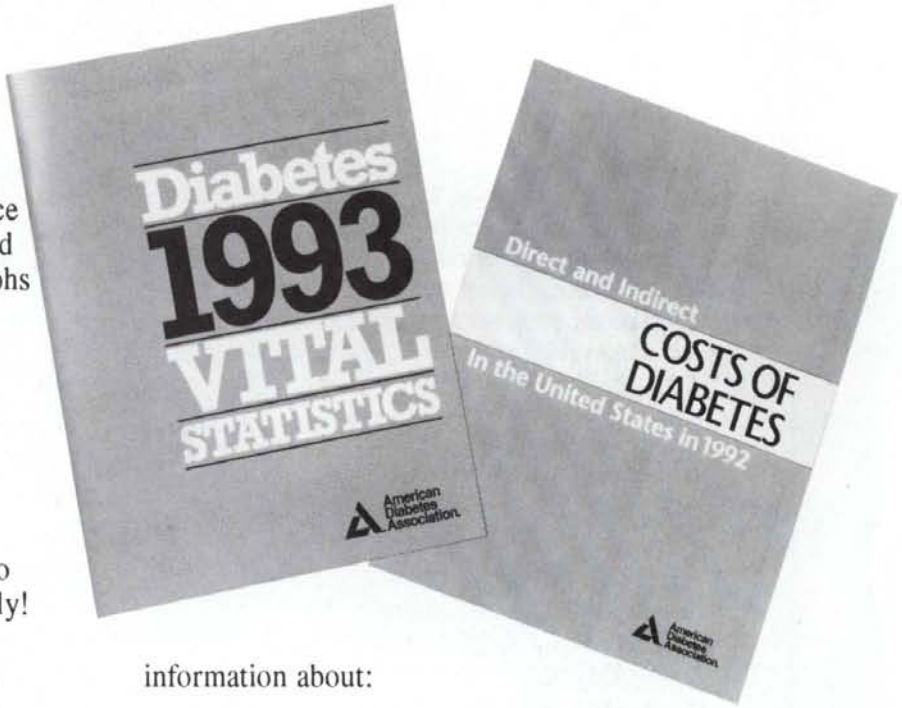

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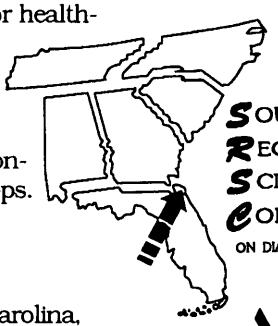

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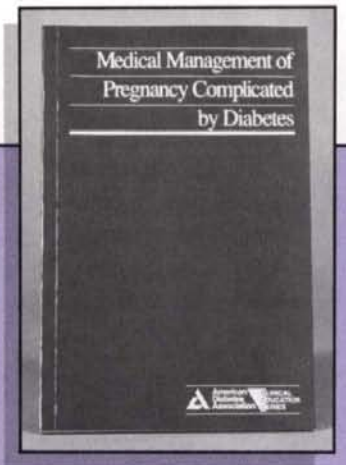

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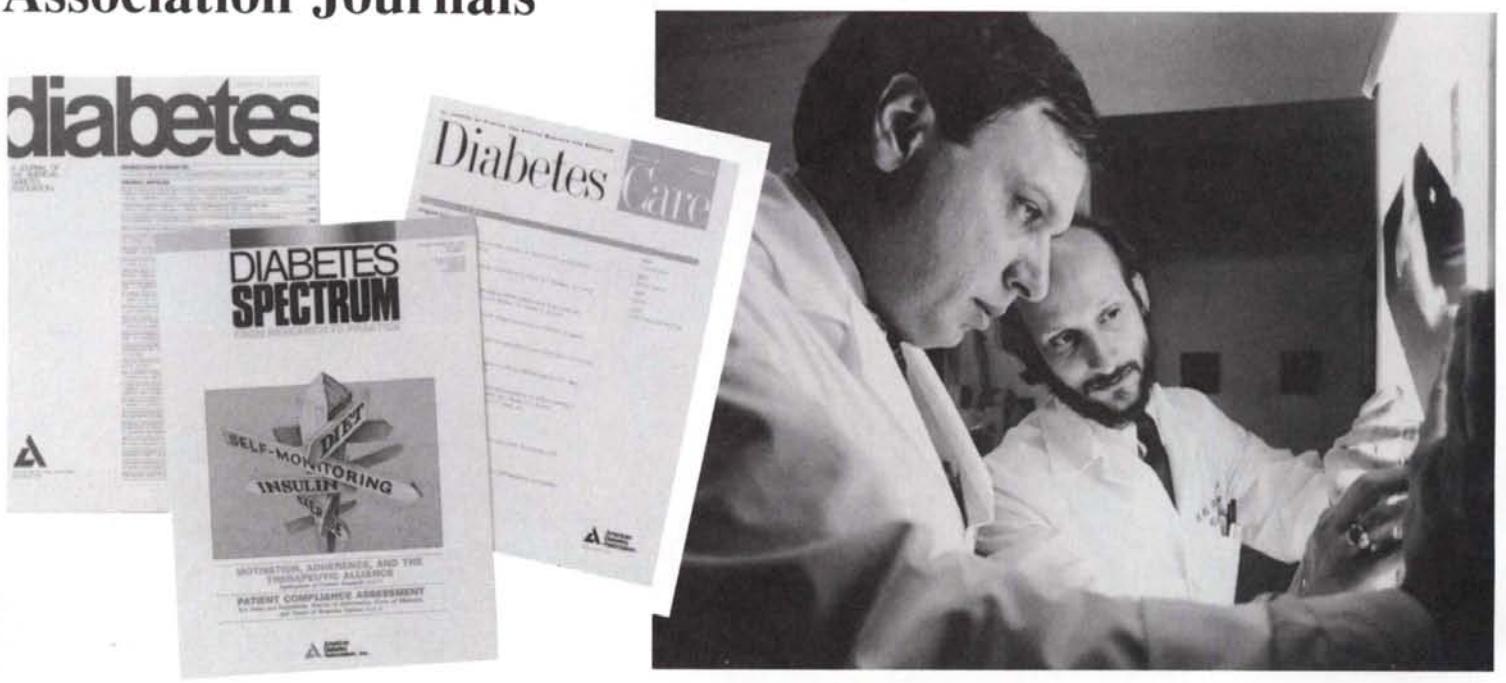

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The following information should be taken into account in those patients who are being treated for hypertension as well as angina:

Increased Angina and/or Myocardial Infarction: Rarely, patients, particularly those who have severe obstructive coronary artery disease, have developed well documented increased frequency, duration and/or severity of angina or acute myocardial infarction on starting nifedipine or at the time of dosage increase. The mechanism of this effect is not established.

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Congestive Heart Failure: Rarely, patients usually receiving a beta blocker, have developed heart failure after beginning nifedipine. Patients with tight aortic stenosis may be at greater risk for such an event, as the unloading effect of nifedipine would be expected to be of less benefit to those patients, owing to their fixed impedance to flow across the aortic valve.

PRECAUTIONS: General—Hypotension: Because nifedipine decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of nifedipine is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See WARNINGS.)

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Laboratory Tests: Rare, usually transient, but occasionally significant elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT, and SGPT have been noted. The relationship to nifedipine therapy is uncertain in most cases, but probable in some. These laboratory abnormalities have rarely been associated with clinical symptoms; however, cholestasis with or without jaundice has been reported. A small (5.4%) increase in mean alkaline phosphatase was noted in patients treated with PROCARDIA XL. This was an isolated finding not associated with clinical symptoms and it rarely resulted in values which fell outside the normal range. Rare instances of allergic hepatitis have been reported. In controlled studies, PROCARDIA XL did not adversely affect serum uric acid, glucose, or cholesterol. Serum potassium was unchanged in patients receiving PROCARDIA XL in the absence of concomitant diuretic therapy, and slightly decreased in patients receiving concomitant diuretics.

Nifedipine, like other calcium channel blockers, decreases platelet aggregation *in vitro*. Limited clinical studies have demonstrated a moderate but statistically significant decrease in platelet aggregation and increase in bleeding time in some nifedipine patients. This is thought to be a function of inhibition of calcium transport across the platelet membrane. No clinical significance for these findings has been demonstrated.

Positive direct Coombs test with/without hemolytic anemia has been reported but a causal relationship between nifedipine administration and positivity of this laboratory test, including hemolysis, could not be determined.

Although nifedipine has been used safely in patients with renal dysfunction and has been reported to exert a beneficial effect in certain cases, rare reversible elevations in BUN and serum creatinine have been reported in patients with pre-existing chronic renal insufficiency. The relationship to nifedipine therapy is uncertain in most cases but probable in some.

Drug Interactions—Beta-adrenergic blocking agents: (See WARNINGS) Experience in over 1400 patients with Procardia® capsules in a noncomparative clinical trial has shown that concomitant administration of nifedipine and beta-blocking agents is usually well tolerated but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension, or exacerbation of angina.

Long Acting Nitrates: Nifedipine may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis: Administration of nifedipine with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing nifedipine to avoid possible over- or under-digitalization.

Coumarin Anticoagulants: There have been rare reports of increased prothrombin time in patients taking coumarin anticoagulants to whom nifedipine was administered. However, the relationship to nifedipine therapy is uncertain.

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak nifedipine plasma levels (80%) and area-under-the-curve (74%), after a one week course of cimetidine at 1000 mg per day and nifedipine at 40 mg per day. Ranitidine produced smaller, non-significant increases. The effect may be mediated by the known inhibition of cimetidine on hepatic cytochrome P-450, the enzyme system probably responsible for the first-pass metabolism of nifedipine. If nifedipine therapy is initiated in a patient currently receiving cimetidine, cautious titration is advised.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Nifedipine was administered orally to rats, for two years and was not shown to be carcinogenic. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose. *In vivo* mutagenicity studies were negative.

Pregnancy: Pregnancy Category C. Nifedipine has been shown to be teratogenic in rats when given in doses 30 times the maximum recommended human dose. Nifedipine was embryotoxic (increased fetal resorptions, decreased fetal weight, increased stunted forms, increased fetal deaths, decreased neonatal survival) in rats, mice, and rabbits at doses of from 3 to 10 times the maximum recommended human dose. In pregnant monkeys, doses 2/3 and twice the maximum recommended human dose resulted in small placentas and underdeveloped chorionic villi. In rats, doses three times maximum human dose and higher caused prolongation of pregnancy. There are no adequate and well controlled studies in pregnant women. PROCARDIA XL® (nifedipine) Extended Release Tablets should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

ADVERSE EXPERIENCES: Over 1000 patients from both controlled and open trials with PROCARDIA XL Extended Release Tablets in hypertension and angina were included in the evaluation of adverse experiences. All side effects reported during PROCARDIA XL Extended Release Tablet therapy were tabulated independent of their causal relation to medication. The most common side effect reported with PROCARDIA XL was edema which was dose related and ranged in frequency from approximately 10% to about 30% at the highest dose studied (180 mg). Other common adverse experiences reported in placebo-controlled trials include: headache (15.8%, compared to 9.8% placebo incidence), fatigue (5.9%, compared to 4.1% placebo incidence), dizziness (4.1%, compared to 4.5% placebo incidence), constipation (3.3%, compared to 2.3% placebo incidence), and nausea (3.3%, compared to 1.9% placebo incidence). Of these, only edema and headache were more common in PROCARDIA XL patients than placebo patients.

The following adverse reactions occurred with an incidence of less than 3.0%. With the exception of leg cramps, the incidence of these side effects was similar to that of placebo alone: *body as a whole/systemic*: asthenia, flushing, pain; *cardiovascular*: palpitations; *central nervous system*: insomnia, nervousness, paresthesia, somnolence; *dermatologic*: pruritus, rash; *gastrointestinal*: abdominal pain, diarrhea, dry mouth, dyspepsia, flatulence; *musculoskeletal*: arthralgia, leg cramps; *respiratory*: chest pain (nonspecific), dyspnea; *urogenital*: impotence, polyuria.

Other adverse reactions were reported sporadically with an incidence of 1.0% or less. These include: *body as a whole/systemic*: face edema, fever, hot flashes, malaise, periorbital edema, rigors; *cardiovascular*: arrhythmia, hypotension, increased angina, tachycardia, syncope; *central nervous system*: anxiety, ataxia, decreased libido, depression, hypertonia, hypoesthesia, migraine, paroniria, tremor, vertigo; *dermatologic*: alopecia, increased sweating, urticaria, purpura; *gastrointestinal*: eructation, gastro-esophageal reflux, gum hyperplasia, melena, vomiting, weight increase; *musculoskeletal*: back pain, gout, myalgias; *respiratory*: coughing, epistaxis, upper respiratory tract infection, respiratory disorder, sinusitis; *special senses*: abnormal lacrimation, abnormal vision, taste perversion, tinnitus; *urogenital/reproductive*: breast pain, dysuria, hematuria, nocturia.

Adverse experiences which occurred in less than 1 in 1000 patients cannot be distinguished from concurrent disease states or medications.

The following adverse experiences, reported in less than 1% of patients, occurred under conditions (e.g., open trials, marketing experience) where a causal relationship is uncertain: gastrointestinal irritation, gastrointestinal bleeding.

In multiple-dose U.S. and foreign controlled studies with nifedipine capsules in which adverse reactions were reported spontaneously, adverse effects were frequent but generally not serious and rarely required discontinuation of therapy or dosage adjustment. Most were expected consequences of the vasodilator effects of Procardia. Adverse experiences reported in placebo-controlled trials include: dizziness, lightheadedness, and giddiness (27%, compared to 15% placebo incidence); flushing, heat sensation (25%, compared to 8% placebo incidence); headache (23%, compared to 20% placebo incidence); weakness (12%, compared to 10% placebo incidence); nausea, heartburn (11%, compared to 8% placebo incidence); muscle cramps, tremor (8%, compared to 3% placebo incidence); peripheral edema (7%, compared to 1% placebo incidence); nervousness, mood changes (7%, compared to 4% placebo incidence); palpitation (7%, compared to 5% placebo incidence); dyspnea, cough, and wheezing (6%, compared to 3% placebo incidence); and nasal congestion, sore throat (6%, compared to 8% placebo incidence).

There is also a large uncontrolled experience in over 2100 patients in the United States. Most of the patients had vasospastic or resistant angina pectoris, and about half had concomitant treatment with beta-adrenergic blocking agents. The relatively common adverse events were similar in nature to those seen with PROCARDIA XL.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

In a subgroup of over 1000 patients receiving Procardia with concomitant beta blocker therapy, the pattern and incidence of adverse experiences was not different from that of the entire group of Procardia treated patients (See PRECAUTIONS.)

In a subgroup of approximately 250 patients with a diagnosis of congestive heart failure as well as angina, dizziness or lightheadedness, peripheral edema, headache or flushing each occurred in one in eight patients. Hypotension occurred in about one in 20 patients. Syncope occurred in approximately one patient in 250. Myocardial infarction or symptoms of congestive heart failure each occurred in about one patient in 15. Atrial or ventricular dysrhythmias each occurred in about one patient in 150.

In post-marketing experience, there have been rare reports of exfoliative dermatitis caused by nifedipine.

More detailed professional information available on request.

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