

# Getting Connected:

## *Electronic Resources and the Health Sciences Libraries*

UW School of Nursing Orientation  
September 21, 2004

# CASE STUDY

Mrs. Hernandez, a 45 year old Spanish speaking woman, is admitted to UWMC for uncontrolled diabetes and hypertension. She is hyperglycemic and will start on insulin injections before leaving the hospital.

Prescribed medications include:

- Lisinopril
- Clonidine
- Metformin

She also takes funugreek.



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Search Query [Search Tips](#)

Search within All Sections

Enter phrase or phrases  
diabetes mellitus and hypertension

Example:  
otitis media AND fluoroquinolones

[Clear Search](#)

### Search Results Summary

Total	Location
10	<a href="#">Reference Books</a>
8720	<a href="#">Journals / MEDLINE</a>
0	<a href="#">Drug Information</a>
0	<a href="#">Drug Updates</a>
4	<a href="#">News</a>
7	<a href="#">Current Practice</a>
90	<a href="#">Practice Guidelines</a>
5	<a href="#">Patient Handouts</a>
4	<a href="#">Student Union</a>

## Reference Books Search Results

10 Matches  
Sorted by Relevance 1-10

= Quick Reference Book

	Title	Occurrences
1	<a href="#">Noble: Textbook of Primary Care Medicine, 3rd ed.</a>	8
2	<a href="#">Braunwald: Heart Disease: A Textbook of Cardiovascular Medicine, 6th ed.</a>	6
3	<a href="#">Goldman: Cecil Textbook of Medicine, 21st ed.</a>	6
4	<a href="#">Rakel: Conn's Current Therapy 2004, 56th ed.</a>	4
5	<a href="#">Brenner &amp; Rector's The Kidney, 7th ed.</a>	3
6	<a href="#">Larsen: Williams Textbook of Endocrinology, 10th ed.</a>	3
7	<a href="#">Marx: Rosen's Emergency Medicine: Concepts and Clinical Practice, 5th ed.</a>	2
8	<a href="#">Rakel: Textbook of Family Practice, 6th ed.</a>	2
9	<a href="#">Ferri: Practical Guide to the Care of the Medical Patient, 6th ed.</a>	1
10	<a href="#">Yanoff: Ophthalmology, 2nd ed.</a>	1

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  - Diabetes mellitus, [1427-1468](#), [1485-1504](#)
    - complication(s) of, [1509-1566](#)
      - hypertension as, [1558-1559](#)
      - hypertension in, [571](#)
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## Chapter 31 - Complications of Diabetes Mellitus

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Michael Brownlee  
Lloyd P. Aiello  
Eli Friedman  
Aaron I. Vinik  
Richard W. Nesto  
Andrew J. M. Boulton

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1510

### BIOCHEMISTRY AND MOLECULAR CELL BIOLOGY

All forms of diabetes, both inherited and acquired, are characterized by hyperglycemia, a relative or absolute lack of insulin, and the development of diabetes-specific microvascular pathology in the retina, renal glomerulus, and peripheral nerve. Diabetes is also associated with accelerated atherosclerotic macrovascular disease affecting arteries that supply the heart, brain, and lower extremities. Pathologically, this condition resembles macrovascular disease in nondiabetic patients but is more extensive and progresses more rapidly. As a consequence of its microvascular pathology, **diabetes mellitus** is now the leading cause of new blindness in people 20 to 74 years of age and the leading cause of end-stage renal disease (ESRD).

People with **diabetes mellitus** are the fastest growing group of renal dialysis and transplant recipients. The life expectancy of patients with diabetic end-stage renal failure is only 3 or 4 years. More than 60% of diabetic patients are affected by neuropathy, which includes *distal symmetrical polyneuropathy*



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[Narrow Search Results](#)[List Pediatrics titles first](#)

Search results for: **Diabetes mellitus, Type 2**

## Adult Medicine, Obstetrics and Gynecology (91 titles)

### Most Relevant Topics

- [Definition and classification of diabetes mellitus](#)
- [Drugs that improve insulin action: Biquanides \(metformin\) and thiazolidinediones](#)
- [Drugs that increase insulin secretion: Sulfonylureas and meglitinides](#)
- [Drugs that modify the intestinal absorption of food: Alpha-glucosidase inhibitors and lipase inhibitors](#)
- [Estimation of blood glucose control in diabetes mellitus](#)
- [Glycemic control and vascular complications in type 2 diabetes mellitus](#)
- [Management of diabetes mellitus in the acute care setting](#)
- [Overview of medical care in diabetes mellitus](#)
- [Prediction and prevention of type 2 diabetes mellitus](#)
- [Treatment of blood glucose in type 2 diabetes mellitus](#)
- [Basic insulin regimens in diabetes mellitus](#)
- [Blood glucose monitoring in management of diabetes mellitus](#)
- [Clinical features and diagnosis of diabetic ketoacidosis and nonketotic hyperglycemia](#)
- [Effects of exercise in diabetes mellitus in adults](#)
- [Epidemiology of and risk factors for coronary heart disease in diabetes mellitus](#)
- [Insulin regimens for intensive therapy of diabetes mellitus](#)
- [Insulin secretion and pancreatic beta-cell function](#)
- [Management of hypoglycemia during treatment of diabetes mellitus](#)
- [Medical management of type 1 and type 2 diabetes mellitus during pregnancy](#)
- [Microalbuminuria and diabetic nephropathy](#)
- [Nutritional considerations in diabetes mellitus](#)
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- [Pathogenesis of type 2 diabetes mellitus](#)
- [Perioperative management of diabetes mellitus](#)
- [Risk factors for diabetic nephropathy](#)

Enter a secondary search term

OR click on:

[Diet](#), [Monitoring](#), [Prevention](#), [Treatment](#)

Search results for **Diabetes mellitus, Type 2 + Hypertension**

**Adult Medicine, Obstetrics and Gynecology** (28 titles)

**Most Relevant Topics**

- [The metabolic syndrome \(insulin resistance syndrome or syndrome X\)](#)
- [Treatment of hypertension in diabetes mellitus](#)
- [Overview of medical care in diabetes mellitus](#)
- [Epidemiology of and risk factors for coronary heart disease in diabetes mellitus](#)
- [Microalbuminuria and diabetic nephropathy](#)
- [Risk factors for diabetic nephropathy](#)
- [Screening for and treatment of diabetic retinopathy](#)
- [Treatment of diabetic nephropathy](#)
- [Obstetrical management of pregnancy complicated by diabetes mellitus](#)
- [Primary prevention of cardiovascular disease and stroke](#)

**Related Topics**

- [Treatment of diabetes mellitus in the elderly](#)
- [ACE inhibition or angiotensin II receptor antagonism in patients at high risk for a cardiovascular event](#)
- [Arsenic exposure and poisoning](#)
- [Clinical evaluation of the overweight patient](#)

**Treatment of hypertension in diabetes mellitus**

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**GRAPHICS**

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- ▶ [Systolic BP in type 2 diabetes](#)
- ▶ [Ramipril and outcome diabetes](#)
- ▶ [Losartan lowers mortality LIFE](#)
- ▶ [BP control and events type 2 DM](#)

▶ [TABLES](#)

- ▶ [Risk stratification in Rx HTN](#)

**RELATED TOPICS**

- ▶ [Microalbuminuria and diabetic nephropathy](#)
- ▶ [Risk factors for diabetic nephropathy](#)
- ▶ [Initial therapy in essential hypertension: Clinical trials](#)
- ▶ [Major side effects of ACE inhibitors](#)
- ▶ [Treatment of diabetic nephropathy](#)
- ▶ [Screening for and treatment of diabetic retinopathy](#)
- ▶ [ACE inhibition or angiotensin II receptor antagonism in patients at high risk for a cardiovascular event](#)
- ▶ [Electrocardiographic diagnosis of left ventricular hypertrophy](#)

**Treatment of hypertension in diabetes mellitus**

[Norman M Kaplan, MD](#)

[Burton D Rose, MD](#)

*UpToDate performs a continuous review of over 330 journals and other resources. Updates are added as important new information is published. The literature review for version 12.2 is current through April 2004; this topic was last changed on May 14, 2004. The next version of UpToDate (12.3) will be released in October 2004.*

**INTRODUCTION** — Hypertension is a common problem in diabetic patients [1,2]. Among those with type 1 diabetes, the incidence of hypertension rises from 5 percent at 10 years, to 33 percent at 20 years, and 70 percent at 40 years [3]. There is a close relation between hypertension and diabetic renal disease in these patients; the former is relatively rare in the absence of the latter. The blood pressure typically begins to rise within the normal range about three years after the onset of microalbuminuria. (See "[Microalbuminuria and diabetic nephropathy](#)"). Ultimately, the incidence of hypertension is approximately 15 to 25 percent in all patients with microalbuminuria and 75 to 85 percent in those with overt diabetic nephropathy [4]. The risk of hypertension is highest in blacks, who are also at much greater risk for renal failure due to diabetic nephropathy. (See "[Risk factors for diabetic nephropathy](#)").

The findings are somewhat different in type 2 diabetic patients. One study of over 3500 newly diagnosed patients found that 39 percent were already hypertensive [5]. In approximately one-half of these patients, the elevation in blood pressure (BP) occurred before the onset of microalbuminuria. Hypertension was strongly associated with obesity and, not surprisingly, the hypertensive patients were at increased risk for cardiovascular morbidity and mortality.

**PATHOGENESIS** — In addition to the development of diabetic nephropathy, at least three other factors have been proposed to contribute to hypertension in diabetes: hyperinsulinemia, extracellular fluid volume expansion, and increased arterial stiffness.

**Hyperinsulinemia** — Hyperinsulinemia, due to [insulin](#) resistance in type 2 diabetes or to insulin administration, may increase systemic blood pressure. In one report of 80 type 2 diabetic patients begun on insulin, the blood pressure rose from 132/81 to 148/89 mmHg [6]. This hypertensive response, although not noted in all studies, may be mediated by concurrent weight gain and by the prohypertensive effect of insulin. Hyperinsulinemia may be a link to explain the association between obesity and hypertension both in nondiabetic patients and those with type 2 diabetes, since insulin can increase sympathetic activity and promote renal sodium retention. Hyperinsulinemia and insulin resistance are also associated with more extensive atherosclerosis [7].

**Volume expansion** — Sodium retention and volume expansion may be induced both by [insulin](#) and the hyperglycemia-induced increase in the filtered glucose load [3,8]. The excess filtered glucose is reabsorbed (as long as there is only moderate hyperglycemia) in the proximal tubule via a sodium-glucose cotransporter, resulting in a parallel rise in sodium reabsorption [8]. Thus, salt loading tends to raise the blood pressure, an effect that can be reversed by salt restriction.

**Increased arterial stiffness** — Patients with diabetes have increased vascular stiffness, which is thought to be a consequence of increased protein glycation and, at a later stage, atheromatous disease. The reduction in arterial distensibility, which is seen with both impaired glucose tolerance and overt diabetes, can contribute to the rise in systolic blood pressure [9].

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Herbs and dietary supplements.

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#### [Adult Schedule](#) <sup>1</sup>

PDF format  
CDC-ACIP, 2003

#### [Childhood / Adolescent Schedule](#) <sup>1</sup>

PDF format  
CDC-ACIP-AAFP-AAP, 2004.

### TRAVEL HEALTH

#### [CDC Travelers' Health](#) <sup>1</sup>

Recommendations by destination.

#### [Illness after international travel](#)

Source: [NEJM](#) , Aug 2002

### SCREENING

#### [Prevention guidelines](#) <sup>1</sup>

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## Diabetes

Search PrimeAnswers

### DIAGNOSIS & THERAPY

- [ACE diabetes self-management guidelines](#)  
PDF format  
Source: [American Association of Clinical Endocrinologists](#) 2002
- [American Diabetes Association](#) ⓘ
- [ADA clinical practice recommendations 2004](#) ⓘ  
Jan 2004

### PATIENT EDUCATION

- [Diabetes: assessing your risk](#)  
Source: [American Academy of Family Physicians](#) , Jun 2002
- [Diabetes and Nutrition](#)  
Source: [American Academy of Family Physicians](#) , Oct 2001
- [Diabetes](#) ⓘ  
Source: [UWMC Health On-Line](#)
- [Diabetes patient education](#) ⓘ  
Source: [National Institute of Diabetes, Digestive, & Kidney Disease](#)
- [Living with Diabetes](#)  
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### Introduction

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### Summary of Revisions for the 2004 Clinical Practice Recommendations

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### POSITION STATEMENT

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Toxicology

Disease

IV Compatibility

Interactions

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Search Path :

Main Keyword Search

### Main Keyword Search:

Search Drug, Toxicology, and Disease databases for:

clonidine

Search

Search summary documents only.

Find all keywords that:  Begin With  Exactly Match

Select Databases

Search Path : [Main Keyword Search](#) >  
Initial Results

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- [List of DRUGDEX\(R\) Tradename Products](#)
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DRUGDEX DRUG EVALUATIONS: CLONIDINE

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### CLONIDINE (Oral) (Tablet)

DrugNote

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CLONIDINE (Oral) (Tablet)

View: [English](#) **Spanish**

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## CLONIDINE (Oral) (Tablet) - DrugNote

### CLONIDINE (Por la boca)

Trata presión arterial alta. Se usa también para tratar jaquecas (migraña), síndrome de Tourette u otras condiciones médicas. Pertenece a la clase de fármacos llamados antihipertensivos.

### Marca(s): Catapres

Existen muchas otras marcas de este medicamento.

### Este medicamento no debe ser usado cuando:

No use esta medicina si alguna vez ha tenido una reacción alérgica a clonidine.

### Forma de usar este medicamento:

#### Tableta

- Su doctor le dirá cuánta medicina tomar y que tan a menudo. Use esta medicina tal como le indique el doctor. Así se sienta mejor, su presión puede aun estar alta.
- Puede tomarse con comida o leche para evitar malestar estomacal.

### Forma de guardar y botar este medicamento:

- Guarde a temperatura ambiente, lejos del calor, la humedad y la luz directa.
- Guarde todas las medicinas fuera del alcance de los niños.

### Medicamentos y alimentos que debe evitar:

Consulte con su médico o farmacéutico antes de usar cualquier medicamento, incluyendo los que compra sin receta médica, las vitaminas y los productos herbales.

- Evite beber alcohol.



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With summer coming to a close, it's time to go back to school. Learn more about [School Health](#).

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Hurricane season and western wildfires are in the news. Learn more:

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## Diabetes

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### Latest News

- [Appetite Hormones Indicate Diabetes Type in Kids](#) (08/25/2004, Reuters Health)
- [Sugary Drinks Up Risk of Diabetes, Obesity in Adults](#) (08/24/2004, Reuters Health)
- [Diabetes, Pre-Diabetes Linked to Dementia Risk](#) (08/23/2004, Reuters Health)
- [Millions of American Indians and Alaska Natives at Increased Risk for Type 2 Diabetes](#) (08/10/2004, National Institute of Diabetes and Digestive and Kidney Diseases)
- [Millions of Hispanics at Increased Risk for Type 2 Diabetes](#) (08/29/2004, National Institute of Diabetes and Digestive and Kidney Diseases)
- [More News on Diabetes](#)

### From the National Institutes of Health

- [7 Principles for Controlling Your Diabetes for Life](#) (National Diabetes Education Program)  
Also available in: [Spanish](#)
- [Diabetes Overview](#) (National Diabetes Information Clearinghouse)
- [Your Guide to Diabetes: Type 1 and Type 2](#) (National Diabetes Information Clearinghouse) - multi-page document  
Also available in: [Spanish](#)

### Overviews

- [Diabetes Interactive Tutorial](#) (Patient Education Institute) - requires Flash plug-in  
Also available in: [Spanish](#)
- [Diabetes Frequently Asked Questions](#) (Centers for Disease Control and Prevention)
- [What Is Diabetes? Easy-to-Read](#) (National Center for Farmworker Health)  
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### Interactive Tutorial

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The primary NIH organization for research on Diabetes is the [National Institute of Diabetes and Digestive and Kidney Diseases](#)

## Culture Clues™

Culture Clues© are tip sheets for clinicians designed to increase awareness about concepts and preferences of patients from the diverse cultures served by UWMC. Currently there are ten cultures represented, with additional ones in progress.

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## **Culture Clues™: Communicating With Your Latino Patient**

*Culture Clues™* is designed to increase awareness about concepts and preferences of patients from the diverse cultures served by UWMC. Every person is unique; always consider the individual's beliefs, needs and concerns. Use *Culture Clues™* and information from the patient and family to guide your communication and your patient care.

❖ perception of illness    ❖ patterns of kinship and decision making    ❖ comfort with touch

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### **1. How does the Latino culture deal with illness?**

#### **A. EXPLAINING THE CAUSES OF ILLNESS AND DISEASE**

- Your patient may see illness as an imbalance. The imbalance may be between an internal and external sources (for example, hot and cold, natural vs. supernatural, the soul is separate from the body).
  - *Ask your patient “Can you tell me what caused your illness?”*
- There are folk-defined diseases such as *empacho* (stomach ailment) and standard western medically defined diseases such as measles, asthma, and TB.



Ethnic medicine information from Harborview Medical Center

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### Cross Cultural Health

- ⊗ [Clinical Topics](#)
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*The EthnoMed site contains information about cultural beliefs, medical issues and other related issues pertinent to the health care of recent immigrants to Seattle or the US, many of whom are refugees fleeing war-torn parts of the world.*

Can't find what you want? Try using the Search within EthnoMed using a word or topic.

**NEW!**

### Featured Materials or Links on the EthnoMed Site July 2004

#### **Mammography and Breast Health (Cambodian/English)**

Cambodian/English brochure about breast cancer, the importance of mammograms, and brief descriptions of treatment options. Available as web version, or print version for distribution. 

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#### **Promoting Good Health and Preventing Cancers**

1 page color poster with basic information about good health habits with English/Cambodian text.

#### **Cancer Patient Education Materials**

Materials from Asian American Network for Cancer Awareness, Research and Training (AANCART) being translated into Cambodian and Vietnamese languages.

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## REFERENCES AND FURTHER READING

- ⊗ [The National Alliance for Hispanic Health](#) website. See [Publications](#) link for Cultural Proficiency resources

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### [Medlineplus Informacion de Salud](#)

This website is an excellent starting place for finding quality health information in Spanish on many health topics. The site offers education resources like interactive tutorials, easy to read articles, dictionary definitions, and much more.

### [Work Group on Diabetes of the Sociedad Andaluza de Medicina Familiar y Comunitaria](#)

A comprehensive and thorough website with Diabetes health information in Spanish.

### [Federacion Diabetologica Colombiana](#)

A Spanish site with a terminology dictionary and education materials on diabetes.

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### FENUGREEK

#### Also Known As:

Alholva, Bird's Foot, Bockshornklee, Bockshornsame, Chandrika, Foenugraeci Semen, Foenugreek, Greek Clover, Greek Hay, Greek Hay Seed, Hu Lu Ba, Methi, Medhika, Trigonella.

#### Scientific Names:

Trigonella foenum-graecum; Trigonella foenugraecum.  
Family: Fabaceae/Leguminosae

#### People Use This For:

Orally, fenugreek is used for lowering blood glucose in people with diabetes, loss of appetite, dyspepsia, gastritis, constipation, atherosclerosis, high serum cholesterol and triglycerides, and for promoting lactation. Fenugreek is used orally for kidney ailments, beriberi, hernia, impotence, and other male problems. Fenugreek is also used orally for fever, mouth ulcers, boils, bronchitis, cellulitis, tuberculosis, chronic coughs, chapped lips, baldness, and cancer.

Topically, fenugreek is used as a poultice for local inflammation, myalgia, lymphadenitis, gout, wounds, leg ulcers, and eczema.

For food use, fenugreek is included as an ingredient in spice blends. It is also



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## Fenugreek (*Trigonella foenum-graecum* L. *Leguminosae*)

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### Synonyms/Common Names/Related Substances:

- Abish, alholva, bird's foot, bockhornsklover, bockshornsamen, bockshornklee, cemen, chilbe, fenegriek, fenogreggo, fenugree, fenugreek seed, fenogreco, fenigreko, fenu-thyme, foenugraeci semen, gorogszena, graine de fenugrec, gray hay, Greek hay seed, griechische Heusamen, fieno greco, halba, hilbeh, hulba, hu lu ba, kasoori methi, kozieradka pospolita, kreeka lambalaats, mente, mentikura, mentula, methi, methika, methini, methri, methro, mithiguti, pazhitnik grecheskiy, penantazi, sag methi, sambala, saviapila, shabaliidag, shambelile, trigonella, trogonella semen, trigonella, trigonelline, uluhaal, uwatu, vendayam, venthiam.



### CLINICAL BOTTOM LINE/EFFECTIVENESS

#### Brief Background:

- Fenugreek has a long history of medical uses in Indian and Chinese medicine, and has been used for numerous indications, including labor induction, aiding digestion, and as a general tonic to improve metabolism and health.
- Preliminary animal and methodologically weak human trials have suggested possible hypoglycemic and anti-hyperlipidemic properties of oral fenugreek seed powder. However, at this time, the evidence is not

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## **Novel insulins: expanding options in diabetes management.**

**Gerich JE.**

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Clinical study

# Novel insulins: expanding options in diabetes management<sup>\*1</sup>

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