

Trial record **1 of 1** for: F3Z-MC-IOPE

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## Comparison of Two Basal Insulins for Patients With Type 2 Diabetes on Anti-Hyperglycemic Medications (IOPE) (IOPE)

The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. Read our [disclaimer](#) for details.

ClinicalTrials.gov Identifier:  
NCT00510952

[Recruitment Status](#) ⓘ :

Completed

[First Posted](#) ⓘ : August 3, 2007

[Results First Posted](#) ⓘ : November 3, 2009

[Last Update Posted](#) ⓘ : October 21, 2010

### Sponsor:

Eli Lilly and Company

### Information provided by:

Eli Lilly and Company

**Study Details**

**Tabular View**

**Study Results**

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### Study Description

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Brief Summary:

The purpose of this study is to examine the effectiveness and safety of insulin lispro protamine suspension (ILPS) as compared to insulin glargine as basal insulin therapy in adults with type 2 diabetes.

Condition or disease 	Intervention/treatment 	Phase 
Diabetes Mellitus, Type 2	Drug: Insulin Lispro Protamine Suspension  Drug: Insulin Glargine	Phase 3

## Study Design

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[Study Type](#)  : Interventional (Clinical Trial)

[Actual Enrollment](#)  : 471 participants

[Allocation](#): Randomized

[Intervention Model](#): Parallel Assignment

[Masking](#): None (Open Label)

[Primary Purpose](#): Treatment

[Official Title](#): The PERSISTENT Trial: A Prospective Randomized Trial Comparing Insulin Lispro Protamine Suspension to Insulin Glargine in Patients With Type 2 Diabetes on Anti-hyperglycemic Medications

[Study Start Date](#)  : August 2007

[Primary Completion Date](#)  : October 2008

[Study Completion Date](#)  : October 2008

### Resource links provided by the National Library of Medicine



[Genetics Home Reference](#) related topics:

[Type 2 diabetes](#)

[Drug Information](#) available for: [Insulin](#) [Protamine](#)

[Insulin human](#) [Insulin lispro](#) [Insulin glargine](#)

[U.S. FDA Resources](#)

## Arms and Interventions

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Arm	Intervention/treatment
<p>Experimental: Lispro</p> <p>Insulin Lispro protamine suspension: Patient adjusted dose, once daily (QD) or twice daily (BID), injected subcutaneous (SC) x 24 weeks</p>	<p>Drug: Insulin Lispro Protamine Suspension</p> <p>Patient adjusted dose, once daily (QD) or twice daily (BID), injected subcutaneous (SC) x 24 weeks</p> <p>Other Names:</p> <ul style="list-style-type: none"> <li>• Insulin Lispro Protamine Suspension (ILPS)</li> <li>• Neutral Protamine Lispro (NPL)</li> <li>• Humalog</li> </ul>
<p>Active Comparator: Glargine</p> <p>Insulin glargine: Patient adjusted dose, once daily (QD), injected subcutaneous (SC) x 24 weeks</p>	<p>Drug: Insulin Glargine</p> <p>Patient adjusted dose, once daily (QD), injected subcutaneous (SC) x 24 weeks</p>

## Outcome Measures

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## Primary Outcome Measures

1. Change From Baseline to 24 Week Endpoint in Hemoglobin A1c (HbA1c)  
[ Time Frame: Baseline, 24 Weeks ]

## Secondary Outcome Measures

1. Actual and Change From Baseline to 12 Week and 24 Week Endpoint in HbA1c Value  
[ Time Frame: Baseline, 12 Weeks, 24 Weeks ]
2. Percentage of Patients With HbA1c Less Than 7.0 Percent and HbA1c Less Than or Equal to 6.5 Percent at Endpoint [ Time Frame: 24 weeks ]  
  
Percentage of patients achieving Hemaglobin A1c (HbA1c) targets of less than 7% and less than or equal to 6.5% at endpoint.
3. Glycemic Variability at Endpoint [ Time Frame: 24 weeks ]

Glycemic variability was measured by standard deviation (SD) value of fasting blood glucose as measured by intra-patient glycemic variability (determined by the 7-point self-monitoring blood glucose (SMBG) profiles at endpoint) based on the actual morning pre-meal blood glucose.

4. 7-Point Self-Monitored Blood Glucose (SMBG) Profile at Endpoint [ Time Frame: 24 weeks ]

Actual measurements and daily mean blood glucose levels at endpoint.

5. Number of Participants With Self-Reported Hypoglycemic Episodes (Including All, Nocturnal, and Severe Hypoglycemia) Overall [ Time Frame: Baseline to 24 weeks ]

Overall: any time after randomization. Hypoglycemic: any time patient experienced sign/symptom associated with hypoglycemia, or had old Roche blood glucose level <7 mg/dL. Nocturnal: any hypoglycemic event that occurred between bedtime and waking. Severe Hypoglycemia: event with symptoms consistent with neuroglycopenia in which patient requires assistance, and is associated with either a Roche blood glucose value <2.8 millimoles/liter or prompt recovery after oral carbohydrate, glucagon, or intravenous glucose.

6. 1-Year Adjusted Rates of Self-Reported Hypoglycemic Episodes (Including All, Nocturnal, and Severe) Overall [ Time Frame: Baseline to 24 weeks ]

Overall: any time after randomization. Hypoglycemic: any time patient experienced sign/symptom associated with hypoglycemia, or had old Roche blood glucose level <7 mg/dL. Nocturnal: any hypoglycemic event that occurred between bedtime and waking. Severe: event with symptoms consistent with neuroglycopenia in which patient requires assistance, and is associated with: a Roche blood glucose value <2.8 mmol/L or prompt recovery after oral carbohydrate, glucagon, or IV glucose. 1-year adjusted rate=(total number of episodes between 2 time intervals/number of days between intervals) X 365.25 days.

7. 30-Day Adjusted Rates of Self-Reported Hypoglycemic Episodes (Including All, Nocturnal, and Severe) Overall [ Time Frame: Baseline to 24 Weeks ]

Overall: any time after randomization. Hypoglycemic: any time patient experienced sign/symptom associated with hypoglycemia, or had old Roche blood glucose level <7 mg/dL. Nocturnal: any hypoglycemic event that occurred between bedtime and

waking. Severe: event with symptoms consistent with neuroglycopenia in which patient requires assistance, and is associated with: a Roche blood glucose value <2.8 mmol/L or prompt recovery after oral carbohydrate, glucagon, or IV glucose. 30-day adjusted rate=(total number of episodes between 2 time intervals/number of days between intervals) X 30 days.

8. Change in Absolute Body Weight (kg) From Baseline to 24 Week Endpoint  
[ Time Frame: Baseline, 24 weeks ]

9. Total Daily Insulin Dose (Units) at Endpoint [ Time Frame: 24 weeks ]

Insulin dose at endpoint was analyzed by 24-hour total daily insulin (units).

10. Total Daily Insulin Dose Per Body Weight (Units/Kilograms) at Endpoint  
[ Time Frame: 24 Weeks ]

Insulin dose at endpoint was analyzed by 24-hour total daily insulin per body weight (units/kilograms).

## Eligibility Criteria

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### Information from the National Library of Medicine



*Choosing to participate in a study is an important personal decision. Talk with your doctor and family members or friends about deciding to join a study. To learn more about this study, you or your doctor may contact the study research staff using the contacts provided below. For general information, [Learn About Clinical Studies](#).*

Ages Eligible for Study: 18 Years and older (Adult, Senior)

Sexes Eligible for Study: All

Accepts Healthy Volunteers: No

### Criteria

Inclusion Criteria:

- Have type 2 diabetes mellitus for at least 1 year.
- Are greater than or equal to 18 years old.
- Have been receiving oral antihyperglycemic medications (OAMs), without insulin, for at least 3 months immediately prior to the study and have been on stable doses of at least 2 of the following OAMs for the 6 weeks prior to Visit 1: Metformin- Sulfonylureas-Dipeptidyl peptidase-IV (DPP-IV) inhibitors-Thiazolidinediones (TZDs)
- Have a hemoglobin A1c (HbA1c) greater than or equal to 7.5% and less than or equal to 10.0%, as measured by a central laboratory before Visit 2.
- Body mass index (BMI) greater than or equal to 25 and less than or equal to 45 kg/meter squared.

#### Exclusion Criteria:

- Have used insulin therapy (outside of pregnancy) any time in the past 2 years, except for short-term treatment of acute conditions, and up to a maximum of 4 weeks.
- Have taken any glucose-lowering medications not included in Inclusion Criterion #3; (for example, acarbose, miglitol, pramlintide, exenatide, repaglinide, or nateglinide) in the past 3 months before Visit 1.
- Have had more than 1 episode of severe hypoglycemia, within 6 months prior to entry into the study, or is currently diagnosed as having hypoglycemia unawareness.
- Have had 2 or more emergency room visits or hospitalizations due to poor glucose control in the past 6 months.
- Are pregnant or intend to become pregnant during the course of the study or are sexually active women of childbearing potential not actively practicing birth control by a method determined by the investigator to be medically acceptable.

#### Contacts and Locations

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#### Information from the National Library of Medicine



*To learn more about this study, you or your doctor may contact the study research staff using the contact information provided by the sponsor.*

*Please refer to this study by its ClinicalTrials.gov identifier (NCT number): **NCT00510952***

## Locations

### United States, Arkansas

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Jonesboro, Arkansas, United States, 72401

### United States, California

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Huntington Park, California, United States, 90255

### United States, Florida

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Miami, Florida, United States, 33145

### United States, Georgia

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Atlanta, Georgia, United States, 30312

### United States, Indiana

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Indianapolis, Indiana, United States, 46222

### United States, Kansas

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Wichita, Kansas, United States, 67208

### United States, Kentucky

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Lexington, Kentucky, United States, 40502

### United States, Louisiana

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Slidell, Louisiana, United States, 70458

### United States, New Jersey

For additional information regarding investigative sites for this trial, contact 1-877-CTLILL`  
Toms River, New Jersey, United States, 08755



### **United States, New York**

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Brooklyn, New York, United States, 11203

### **United States, Washington**

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Tacoma, Washington, United States, 98405

### **Brazil**

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Brasilia, Brazil, 71625-009

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Fortaleza, Brazil, 60430-350

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Joinville, Brazil, 89201-260

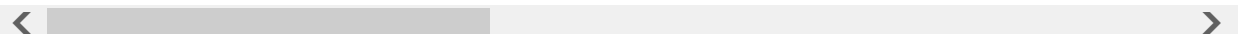
For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Sao Paulo, Brazil, 01244-030

### **Canada, British Columbia**

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Victoria, British Columbia, Canada, V8R 6V4

### **Puerto Rico**

For additional information regarding investigative sites for this trial, contact 1-877-CTLILLY  
Ponce, Puerto Rico, 00716



### **Sponsors and Collaborators**

Eli Lilly and Company

### **Investigators**

Study Director: Call 1-877-CTLILLY (1-877-285-4559) or 1-317-615-4559 Mon-Fri 9 AM-5 PM



### **More Information**

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### **Additional Information:**

[Lilly Clinical Trial Registry](#) 

## Publications of Results:

[Strojek K, Shi C, Carey MA, Jacober SJ. Addition of insulin lispro protamine suspension or insulin glargine to oral type 2 diabetes regimens: a randomized trial. Diabetes Obes Metab. 2010 Oct;12\(10\):916-22. doi: 10.1111/j.1463-1326.2010.01257.x.](#)

## Publications automatically indexed to this study by ClinicalTrials.gov Identifier (NCT Number):

[Qu Y, Jacober SJ, Zhang Q, Wolka LL, DeVries JH. Rate of hypoglycemia in insulin-treated patients with type 2 diabetes can be predicted from glycemic variability data. Diabetes Technol Ther. 2012 Nov;14\(11\):1008-12. doi: 10.1089/dia.2012.0099.](#)

Responsible Party: Chief Medical Officer, Eli Lilly  
 ClinicalTrials.gov Identifier: [NCT00510952](#) [History of Changes](#)  
 Other Study ID Numbers: 11813  
**F3Z-MC-IOPE** ( Other Identifier: Eli Lilly and Company )  
 First Posted: August 3, 2007 [Key Record Dates](#)  
 Results First Posted: November 3, 2009  
 Last Update Posted: October 21, 2010  
 Last Verified: October 2010

Keywords provided by Eli Lilly and Company:  
 diabetes  
 type 2

## Additional relevant MeSH terms:

Diabetes Mellitus	Insulin Lispro
Diabetes Mellitus, Type 2	Hypoglycemic Agents
Glucose Metabolism Disorders	Protamines
Metabolic Diseases	Physiological Effects of Drugs
Endocrine System Diseases	Heparin Antagonists
Insulin, Globin Zinc	Molecular Mechanisms of Pharmacological
Insulin	Action
Insulin Glargine	Coagulants

