

# **INSULIN LISPRO PROTAMINE AND INSULIN LISPRO INJECTABLE SUSPENSION MIX75/25 KWIKPEN - insulin lispro injection, suspension Eli Lilly and Company**

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## **HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use INSULIN LISPRO PROTAMINE AND INSULIN LISPRO MIX75/25 safely and effectively. See full prescribing information for INSULIN LISPRO PROTAMINE AND INSULIN LISPRO MIX75/25.**

**INSULIN LISPRO PROTAMINE AND INSULIN LISPRO injectable suspension Mix75/25, for subcutaneous use**

**Initial U.S. Approval: 1999**

**This product is HUMALOG® Mix75/25™ (insulin lispro protamine and insulin lispro).**

## **INDICATIONS AND USAGE**

Insulin Lispro Protamine and Insulin Lispro Mix75/25™ is a mixture of insulin lispro protamine, an intermediate-acting human insulin analog, and insulin lispro, a rapid-acting human insulin analog indicated to improve glycemic control in adults with diabetes mellitus. (1)

### Limitations of Use:

The proportions of rapid-acting and intermediate-acting insulins are fixed and do not allow for basal versus prandial dose adjustments. (1)

## **DOSAGE AND ADMINISTRATION**

- See Full Prescribing Information for important preparation and administration instructions. (2.1)
- Inject Insulin Lispro Protamine and Insulin Lispro Mix75/25 subcutaneously within 15 minutes before a meal in abdominal wall, thigh, upper arm, or buttocks and rotate injection sites to reduce the risk of lipodystrophy and localized cutaneous amyloidosis. (2.1, 2.2)
- Individualize and adjust dosage based on metabolic needs, blood glucose monitoring results and glycemic control goal. (2.2)
- Do not administer Insulin Lispro Protamine and Insulin Lispro Mix75/25 intravenously or by a continuous subcutaneous insulin infusion pump. (2.1)
- Insulin Lispro Protamine and Insulin Lispro Mix75/25 is typically dosed twice daily (with each dose intended to cover 2 meals or a meal and a snack). (2.2)

## **DOSAGE FORMS AND STRENGTHS**

Injectable suspension: 100 units/mL (U-100) of Insulin Lispro Protamine and Insulin Lispro Mix75/25, 75% insulin lispro protamine and 25% insulin lispro available as: (3)

- 3 mL single-patient-use KwikPen® prefilled pen

## **CONTRAINDICATIONS**

- Do not use during episodes of hypoglycemia. (4)
- Do not use in patients with hypersensitivity to Insulin Lispro Protamine and Insulin Lispro Mix75/25 or any of its excipients. (4)

## **WARNINGS AND PRECAUTIONS**

- *Never share* an Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen between patients, even if the needle is changed. (5.1)
- *Hyperglycemia or Hypoglycemia with Changes in Insulin Regimen:* Make changes to a patient's insulin regimen (e.g., insulin strength, manufacturer, type, injection site or method of administration) under close medical supervision with increased frequency of blood glucose monitoring. (5.2)
- *Hypoglycemia:* May be life-threatening. Increase frequency of blood glucose monitoring with changes to insulin dosage, co-administered glucose lowering medications, meal pattern, physical activity; in patients with renal or hepatic impairment; and in patients with hypoglycemia unawareness. (5.3)
- *Hypoglycemia Due to Medication Errors:* Accidental mix-ups between insulin products can occur. Instruct patients to check insulin labels before injection. (5.4)
- *Hypersensitivity Reactions:* Severe, life-threatening, generalized allergy, including anaphylaxis, can occur. Discontinue Insulin Lispro Protamine and Insulin Lispro Mix75/25, monitor and treat if indicated. (5.5)
- *Hypokalemia:* May be life-threatening. Monitor potassium levels in patients at risk of hypokalemia and treat if indicated. (5.6)
- *Fluid Retention and Heart Failure with Concomitant Use of Thiazolidinediones (TZDs):* Observe for signs

and symptoms of heart failure; consider dosage reductions or discontinuation if heart failure occurs. (5.7)

#### ADVERSE REACTIONS

Adverse reactions observed with Insulin Lispro Protamine and Insulin Lispro Mix75/25 include hypoglycemia, allergic reactions, injection site reactions, lipodystrophy, weight gain, edema, pruritus, and rash. (6)

**To report SUSPECTED ADVERSE REACTIONS, contact Eli Lilly and Company at 1-800-LillyRx (1-800-545-5979) or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

#### DRUG INTERACTIONS

- *Drugs that may increase the risk of hypoglycemia:* antidiabetic agents, ACE inhibitors, angiotensin II receptor blocking agents, disopyramide, fibrates, fluoxetine, monoamine oxidase inhibitors, pentoxifylline, pramlintide, salicylates, somatostatin analog (e.g., octreotide), and sulfonamide antibiotics. (7)
- *Drugs that may decrease the blood glucose lowering effect:* atypical antipsychotics, corticosteroids, danazol, diuretics, estrogens, glucagon, isoniazid, niacin, oral contraceptives, phenothiazines, progestogens (e.g., in oral contraceptives), protease inhibitors, somatropin, sympathomimetic agents (e.g., albuterol, epinephrine, terbutaline), and thyroid hormones. (7)
- *Drugs that may increase or decrease the blood glucose lowering effect:* alcohol, beta-blockers, clonidine, lithium salts, and pentamidine. (7)
- *Drugs that may blunt the signs and symptoms of hypoglycemia:* beta-blockers, clonidine, guanethidine, and reserpine. (7)

**See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.**

**Revised: 7/2023**

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## FULL PRESCRIBING INFORMATION: CONTENTS\*

### 1 INDICATIONS AND USAGE

### 2 DOSAGE AND ADMINISTRATION

2.1 Important Preparation and Administration Instructions

2.2 Dosage Recommendations

2.3 Dosage Modifications for Drug Interactions

### 3 DOSAGE FORMS AND STRENGTHS

### 4 CONTRAINDICATIONS

### 5 WARNINGS AND PRECAUTIONS

5.1 Never Share an Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen Between Patients

5.2 Hyperglycemia or Hypoglycemia with Changes in Insulin Regimen

5.3 Hypoglycemia

5.4 Hypoglycemia Due to Medication Errors

5.5 Hypersensitivity Reactions

5.6 Hypokalemia

5.7 Fluid Retention and Heart Failure with Concomitant Use of PPAR-gamma Agonists

### 6 ADVERSE REACTIONS

### 7 DRUG INTERACTIONS

### 8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

8.2 Lactation

8.4 Pediatric Use

8.5 Geriatric Use

8.6 Renal Impairment

8.7 Hepatic Impairment

## **10 OVERDOSAGE**

## **11 DESCRIPTION**

## **12 CLINICAL PHARMACOLOGY**

12.1 Mechanism of Action

12.2 Pharmacodynamics

12.3 Pharmacokinetics

## **13 NONCLINICAL TOXICOLOGY**

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

## **16 HOW SUPPLIED/STORAGE AND HANDLING**

16.1 How Supplied

16.2 Storage and Handling

## **17 PATIENT COUNSELING INFORMATION**

\* Sections or subsections omitted from the full prescribing information are not listed.

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## **FULL PRESCRIBING INFORMATION**

### **1 INDICATIONS AND USAGE**

Insulin Lispro Protamine and Insulin Lispro Mix75/25 is indicated to improve glycemic control in adults with diabetes mellitus.

Limitations of Use:

The proportions of rapid-acting and intermediate-acting insulins in Insulin Lispro Protamine and Insulin Lispro Mix75/25 are fixed and do not allow for basal versus prandial dose adjustments.

### **2 DOSAGE AND ADMINISTRATION**

#### **2.1 Important Preparation and Administration Instructions**

##### Preparation Instructions

- Always check insulin labels before administration. This product is HUMALOG Mix75/25 [see *Warnings and Precautions (5.4)*].
- Insulin Lispro Protamine and Insulin Lispro Mix75/25 is a suspension that must be resuspended immediately before use. Resuspension is easier when the insulin has reached room temperature.
- To resuspend KwikPen, gently roll the KwikPen at least 10 times and then carefully invert the KwikPen at least 10 times until the suspension appears uniformly white and cloudy.
- Inspect Insulin Lispro Protamine and Insulin Lispro Mix75/25 visually before use. Do not use if discoloration or particulate matter is seen.

##### Administration Instructions

- After resuspension, immediately administer Insulin Lispro Protamine and Insulin Lispro Mix75/25 by subcutaneous injection into the abdominal wall, thigh, upper arm,

or buttocks.

- Rotate the injection site within the same region from one injection to the next to reduce the risk of lipodystrophy and localized cutaneous amyloidosis. Do not inject into areas of lipodystrophy or localized cutaneous amyloidosis [see *Warnings and Precautions (5.2)* and *Adverse Reactions (6)*].
- The Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen dials in 1 unit increments. Use Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen with caution in patients with visual impairment that may rely on audible clicks to dial their dose.
- Do not administer Insulin Lispro Protamine and Insulin Lispro Mix75/25 intravenously or by a continuous subcutaneous insulin infusion pump.
- Do not mix Insulin Lispro Protamine and Insulin Lispro Mix75/25 with any other insulins or diluents.

## 2.2 Dosage Recommendations

- Individualize and adjust the dosage of Insulin Lispro Protamine and Insulin Lispro Mix75/25 based on the individual's metabolic needs, blood glucose monitoring results and glycemic control goal.
- Inject Insulin Lispro Protamine and Insulin Lispro Mix75/25 subcutaneously within 15 minutes before a meal.
- Insulin Lispro Protamine and Insulin Lispro Mix75/25 is typically dosed twice-daily (with each dose intended to cover 2 meals or a meal and a snack).
- Dosage adjustments may be needed with changes in physical activity, changes in meal patterns (i.e., macronutrient content or timing of food intake), changes in renal or hepatic function or during acute illness [see *Warnings and Precautions (5.2, 5.3)* and *Use in Specific Populations (8.6, 8.7)*].
- When switching from another insulin to Insulin Lispro Protamine and Insulin Lispro Mix75/25, a different dosage of Insulin Lispro Protamine and Insulin Lispro Mix75/25 may be needed.
- During changes to a patient's insulin regimen, increase the frequency of blood glucose monitoring [see *Warnings and Precautions (5.2)*].

## 2.3 Dosage Modifications for Drug Interactions

Dosage modification may be needed when Insulin Lispro Protamine and Insulin Lispro Mix75/25 is used concomitantly with certain drugs [see *Drug Interactions (7)*].

## 3 DOSAGE FORMS AND STRENGTHS

Injectable Suspension: 100 units/mL (U-100) of Insulin Lispro Protamine and Insulin Lispro, 75% insulin lispro protamine and 25% insulin lispro is a white and cloudy suspension available as:

- 3 mL single-patient-use KwikPen prefilled pen

## 4 CONTRAINDICATIONS

Insulin Lispro Protamine and Insulin Lispro Mix75/25 is contraindicated:

- during episodes of hypoglycemia [see *Warnings and Precautions (5.3)*]
- in patients who have had hypersensitivity reactions to Insulin Lispro Protamine and

Insulin Lispro Mix75/25 or to any of its excipients. *[see Warnings and Precautions (5.5)]*

## **5 WARNINGS AND PRECAUTIONS**

### **5.1 Never Share an Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen Between Patients**

Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPens must never be shared between patients, even if the needle is changed. Sharing poses a risk for transmission of blood-borne pathogens.

### **5.2 Hyperglycemia or Hypoglycemia with Changes in Insulin Regimen**

Changes in an insulin regimen (e.g., insulin strength, manufacturer, type, injection site or method of administration) may affect glycemic control and predispose to hypoglycemia *[see Warnings and Precautions (5.3)]* or hyperglycemia. Repeated insulin injections into areas of lipodystrophy or localized cutaneous amyloidosis have been reported to result in hyperglycemia; and a sudden change in the injection site (to an unaffected area) has been reported to result in hypoglycemia *[see Adverse Reactions (6)]*.

Make any changes to a patient's insulin regimen under close medical supervision with increased frequency of blood glucose monitoring. Advise patients who have repeatedly injected into areas of lipodystrophy or localized cutaneous amyloidosis to change the injection site to unaffected areas and closely monitor for hypoglycemia. For patients with type 2 diabetes, dosage adjustments of concomitant anti-diabetic products may be needed.

### **5.3 Hypoglycemia**

Hypoglycemia is the most common adverse reaction associated with all insulins, including Insulin Lispro Protamine and Insulin Lispro Mix75/25. Severe hypoglycemia can cause seizures, may lead to unconsciousness, may be life-threatening, or cause death. Hypoglycemia can impair concentration ability and reaction time; this may place an individual and others at risk in situations where these abilities are important (e.g., driving or operating other machinery).

Hypoglycemia can happen suddenly, and symptoms may differ in each individual and change over time in the same individual. Symptomatic awareness of hypoglycemia may be less pronounced in patients with longstanding diabetes, in patients with diabetic nerve disease, in patients using medications that block the sympathetic nervous system (e.g., beta-blockers) *[see Drug Interactions (7)]*, or in patients who experience recurrent hypoglycemia.

#### **Risk Factors for Hypoglycemia**

The risk of hypoglycemia after an injection is related to the duration of action of the insulin and in general, is highest when the glucose lowering effect of the insulin is maximal. As with all insulins, the glucose lowering effect time course of Insulin Lispro Protamine and Insulin Lispro Mix75/25 may vary in different individuals or at different times in the same individual and depends on many conditions, including the area of injection as well as the injection site blood supply and temperature *[see Clinical*

*Pharmacology (12.2)*]. Other factors which may increase the risk of hypoglycemia include changes in meal pattern (e.g., macronutrient content or timing of meals), changes in level of physical activity, or changes to co-administered medication [*see Drug Interactions (7)*]. Patients with renal or hepatic impairment may be at higher risk of hypoglycemia [*see Use in Specific Populations (8.6, 8.7)*].

#### Risk Mitigation Strategies for Hypoglycemia

Patients and caregivers must be educated to recognize and manage hypoglycemia. Self-monitoring of blood glucose plays an essential role in the prevention and management of hypoglycemia. In patients at higher risk for hypoglycemia and patients who have reduced symptomatic awareness of hypoglycemia, increased frequency of blood glucose monitoring is recommended.

### **5.4 Hypoglycemia Due to Medication Errors**

Accidental mix-ups between insulin products have been reported. To avoid medication errors between Insulin Lispro Protamine and Insulin Lispro Mix75/25 and other insulins, instruct patients to always check the insulin label before each injection.

### **5.5 Hypersensitivity Reactions**

Severe, life-threatening, generalized allergy, including anaphylaxis, can occur with insulins, including Insulin Lispro Protamine and Insulin Lispro Mix75/25. If hypersensitivity reactions occur, discontinue Insulin Lispro Protamine and Insulin Lispro Mix75/25; treat per standard of care and monitor until symptoms and signs resolve. Insulin Lispro Protamine and Insulin Lispro Mix75/25 is contraindicated in patients who have had hypersensitivity reactions to Insulin Lispro Protamine and Insulin Lispro Mix75/25 or any of its excipients [*see Contraindications (4)*].

### **5.6 Hypokalemia**

All insulins, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, cause a shift in potassium from the extracellular to intracellular space, possibly leading to hypokalemia. Untreated hypokalemia may cause respiratory paralysis, ventricular arrhythmia, and death. Monitor potassium levels in patients at risk for hypokalemia if indicated (e.g., patients using potassium-lowering medications, patients taking medications sensitive to serum potassium concentrations).

### **5.7 Fluid Retention and Heart Failure with Concomitant Use of PPAR-gamma Agonists**

Thiazolidinediones (TZDs), which are peroxisome proliferator-activated receptor (PPAR)-gamma agonists, can cause dose-related fluid retention, particularly when used in combination with insulin. Fluid retention may lead to or exacerbate heart failure. Patients treated with insulin, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, and a PPAR-gamma agonist should be observed for signs and symptoms of heart failure. If heart failure develops, it should be managed according to current standards of care, and discontinuation or dose reduction of the PPAR-gamma agonist must be considered.

## **6 ADVERSE REACTIONS**

The following adverse reactions are discussed elsewhere in the labeling:

- Hypoglycemia [*see Warnings and Precautions (5.3)*]
- Hypoglycemia Due to Medication Errors [*see Warnings and Precautions (5.4)*]
- Hypersensitivity Reactions [*see Warnings and Precautions (5.5)*]
- Hypokalemia [*see Warnings and Precautions (5.6)*]

### Adverse Reactions from Clinical Studies or Postmarketing Reports

The following adverse reactions have been identified during post-marketing use of Insulin Lispro Protamine and Insulin Lispro Mix75/25. Because some of these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

#### *Adverse reactions associated with insulin initiation and glucose control intensification*

Intensification or rapid improvement in glucose control has been associated with a transitory, reversible ophthalmologic refraction disorder, worsening of diabetic retinopathy, and acute painful peripheral neuropathy. Over the long-term, improved glycemic control decreases the risk of diabetic retinopathy and neuropathy.

#### *Hypersensitivity reactions*

Severe, life-threatening, generalized allergy, including anaphylaxis.

#### *Hypoglycemia*

Hypoglycemia is the most commonly observed adverse reaction in Insulin Lispro Protamine and Insulin Lispro Mix75/25.

#### *Hypokalemia*

Insulin Lispro Protamine and Insulin Lispro Mix75/25 can cause a shift in potassium from the extracellular to intracellular space, possibly leading to hypokalemia.

#### *Injection site reactions*

Insulin Lispro Protamine and Insulin Lispro Mix75/25 can cause local injection site reactions including redness, swelling, or itching at the site of injection. These reactions usually resolve in a few days to a few weeks, but in some occasions, may require discontinuation. Localized reactions and generalized myalgias have been reported with the use of meta-cresol, which is an excipient in Insulin Lispro Protamine and Insulin Lispro Mix75/25.

#### *Lipodystrophy*

Administration of insulin subcutaneously, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, has resulted in lipoatrophy (depression in the skin) or lipohypertrophy (enlargement or thickening of tissue) [*see Dosage and Administration (2.1)*] in some patients.

#### *Localized cutaneous amyloidosis*

Localized cutaneous amyloidosis at the injection site has occurred. Hyperglycemia has been reported with repeated insulin injections into areas of localized cutaneous amyloidosis; hypoglycemia has been reported with a sudden change to an unaffected injection site.

#### *Medication Errors*

Medication errors in which other insulins have been accidentally substituted for Insulin Lispro Protamine and Insulin Lispro Mix75/25 have been identified during postapproval use.

### *Peripheral Edema*

Insulins, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, may cause sodium retention and edema, particularly if previously poor metabolic control is improved by intensified insulin therapy.

### *Weight gain*

Weight gain can occur with insulins, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, and has been attributed to the anabolic effects of insulin and the decrease in glycosuria.

### *Immunogenicity*

As with all therapeutic proteins, insulin administration may cause anti-insulin antibodies to form. The incidence of antibody formation with Insulin Lispro Protamine and Insulin Lispro Mix75/25 is unknown.

## **7 DRUG INTERACTIONS**

Table 1 below presents clinically significant drug interactions with Insulin Lispro Protamine and Insulin Lispro Mix75/25.

**Table 1: Clinically Significant Drug Interactions with Insulin Lispro Protamine and Insulin Lispro Mix75/25**

<b>Drugs that May Increase the Risk of Hypoglycemia</b>	
<i>Drugs:</i>	Antidiabetic agents, ACE inhibitors, angiotensin II receptor blocking agents, disopyramide, fibrates, fluoxetine, monoamine oxidase inhibitors, pentoxifylline, pramlintide, salicylates, somatostatin analog (e.g., octreotide), and sulfonamide antibiotics.
<i>Intervention:</i>	Dose adjustment and increased frequency of glucose monitoring may be required when Insulin Lispro Protamine and Insulin Lispro Mix75/25 is co-administered with these drugs.
<b>Drugs that May Decrease the Blood Glucose Lowering Effect of Insulin Lispro Protamine and Insulin Lispro Mix75/25</b>	
<i>Drugs:</i>	Atypical antipsychotics (e.g., olanzapine and clozapine), corticosteroids, danazol, diuretics, estrogens, glucagon, isoniazid, niacin, oral contraceptives, phenothiazines, progestogens (e.g., in oral contraceptives), protease inhibitors, somatropin, sympathomimetic agents (e.g., albuterol, epinephrine, terbutaline), and thyroid hormones.
<i>Intervention:</i>	Dose adjustment and increased frequency of glucose monitoring may be required when Insulin Lispro Protamine and Insulin Lispro Mix75/25 is co-administered with these drugs.
<b>Drugs that May Increase or Decrease the Blood Glucose Lowering Effect of Insulin Lispro Protamine and Insulin Lispro Mix75/25</b>	

<i>Drugs:</i>	Alcohol, beta-blockers, clonidine, and lithium salts. Pentamidine may cause hypoglycemia, which may sometimes be followed by hyperglycemia.
<i>Intervention:</i>	Dose adjustment and increased frequency of glucose monitoring may be required when Insulin Lispro Protamine and Insulin Lispro Mix75/25 is co-administered with these drugs.
<b>Drugs that May Blunt Signs and Symptoms of Hypoglycemia</b>	
<i>Drugs:</i>	Beta-blockers, clonidine, guanethidine, and reserpine.
<i>Intervention:</i>	Increased frequency of glucose monitoring may be required when Insulin Lispro Protamine and Insulin Lispro Mix75/25 is co-administered with these drugs.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

#### Risk Summary

Published studies with insulin lispro used during pregnancy have not reported an association between insulin lispro and the induction of major birth defects, miscarriage, or adverse maternal or fetal outcomes (*see Data*). There are risks to the mother and fetus associated with poorly controlled diabetes in pregnancy (*see Clinical Considerations*).

Pregnant rats and rabbits were exposed to insulin lispro in animal reproduction studies during organogenesis. No adverse effects on embryo/fetal viability or morphology were observed in offspring of rats exposed to insulin lispro at a dose approximately 3 times the human subcutaneous dose of 1 unit insulin lispro/kg/day. No adverse effects on embryo/fetal development were observed in offspring of rabbits exposed to insulin lispro at doses up to approximately 0.2 times the human subcutaneous dose of 1 unit/kg/day (*see Data*).

The estimated background risk of major birth defects is 6-10% in women with pre-gestational diabetes with a HbA1c >7 and has been reported to be as high as 20-25% in women with a HbA1c >10. The estimated background risk of miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

#### Clinical Considerations

##### *Disease-associated maternal and/or embryo/fetal risk*

Poorly controlled diabetes in pregnancy increases the maternal risk for diabetic ketoacidosis, pre-eclampsia, spontaneous abortions, preterm delivery, and delivery complications. Poorly controlled diabetes increases the fetal risk for major birth defects, still birth, and macrosomia related morbidity.

#### Data

##### *Human Data*

Published data from retrospective studies and meta-analyses do not report an

association with insulin lispro and major birth defects, miscarriage, or adverse maternal or fetal outcomes when insulin lispro is used during pregnancy. However, these studies cannot definitely establish or exclude the absence of any risk because of methodological limitations including small sample size, selection bias, confounding by unmeasured factors, and some lacking comparator groups.

### *Animal Data*

Animal reproduction studies have not been performed with Insulin Lispro Protamine and Insulin Lispro Mix75/25. However, subcutaneous reproduction and teratology studies have been conducted with insulin lispro (a component of Insulin Lispro Protamine and Insulin Lispro Mix75/25). In a combined fertility and embryo-fetal development study, female rats were given subcutaneous insulin lispro injections of 1, 5, and 20 units/kg/day (0.2, 0.8, and 3 times the human subcutaneous dose of 1 unit insulin lispro/kg/day, based on units/body surface area, respectively) from 2 weeks prior to cohabitation through Gestation Day 19. There were no adverse effects on female fertility, implantation, or fetal viability and morphology. However, fetal growth retardation was produced at the 20 units/kg/day-dose as indicated by decreased fetal weight and an increased incidence of fetal runts/litter.

In an embryo-fetal development study in pregnant rabbits, insulin lispro doses of 0.1, 0.25, and 0.75 unit/kg/day (0.03, 0.08, and 0.2 times the human subcutaneous dose of 1 unit insulin lispro/kg/day, based on units/body surface area, respectively) were injected subcutaneously on Gestation days 7 through 19. There were no adverse effects on fetal viability, weight, and morphology at any dose.

## **8.2 Lactation**

### Risk Summary

Available data from published literature suggests that exogenous human insulin products, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, are transferred into human milk. There are no adverse reactions reported in breastfed infants in the literature. There are no data on the effects of exogenous human insulin products, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for insulin, any potential adverse effects on the breastfed child from Insulin Lispro Protamine and Insulin Lispro Mix75/25 or from the underlying maternal condition.

## **8.4 Pediatric Use**

Safety and effectiveness of Insulin Lispro Protamine and Insulin Lispro Mix75/25 in pediatric patients have not been established.

## **8.5 Geriatric Use**

Clinical studies of Insulin Lispro Protamine and Insulin Lispro Mix75/25 did not include sufficient numbers of patients aged 65 and over to determine whether they respond differently than younger patients. In patients aged 65 and over with diabetes, the initial dosing, dose increments, and maintenance dosage should be conservative to reduce the risk of hypoglycemia [see *Warnings and Precautions (5.3)*].

## 8.6 Renal Impairment

The effect of renal impairment on the pharmacokinetics of Insulin Lispro Protamine and Insulin Lispro Mix75/25 has not been studied. Patients with renal impairment may be at increased risk of hypoglycemia and may require more frequent Insulin Lispro Protamine and Insulin Lispro Mix75/25 dose adjustment and more frequent glucose monitoring [see *Warnings and Precautions (5.3)*].

## 8.7 Hepatic Impairment

The effect of hepatic impairment on the pharmacokinetics of Insulin Lispro Protamine and Insulin Lispro Mix75/25 has not been studied. Patients with hepatic impairment may be at increased risk of hypoglycemia and may require more frequent Insulin Lispro Protamine and Insulin Lispro Mix75/25 dose adjustment and more frequent glucose monitoring [see *Warnings and Precautions (5.3)*].

## 10 OVERDOSAGE

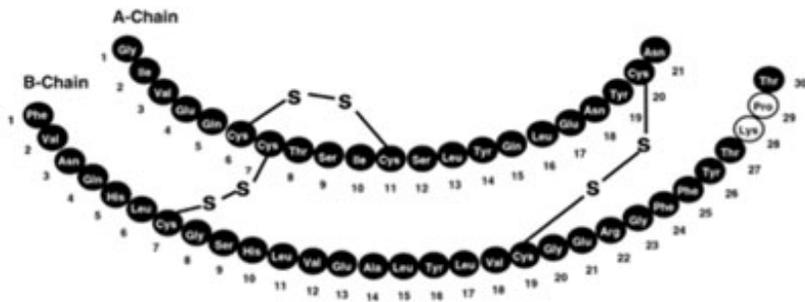
Excess insulin administration may cause hypoglycemia and hypokalemia. Mild episodes of hypoglycemia usually can be treated with oral glucose. Adjustments in drug dosage, meal patterns, or exercise may be needed. More severe episodes with coma, seizure, or neurologic impairment may be treated with a glucagon product for emergency use or concentrated intravenous glucose. Sustained carbohydrate intake and observation may be necessary because hypoglycemia may recur after apparent clinical recovery. Hypokalemia must be corrected appropriately [see *Warnings and Precautions (5.3, 5.6)*].

## 11 DESCRIPTION

Insulin lispro is a rapid-acting insulin analog produced by recombinant DNA technology utilizing a non-pathogenic laboratory strain of *Escherichia coli*. Insulin lispro differs from human insulin in that the amino acid proline at position B28 is replaced by lysine and the lysine in position B29 is replaced by proline. Chemically, it is Lys(B28), Pro(B29) human insulin analog and has the empirical formula  $C_{257}H_{383}N_{65}O_{77}S_6$  and a molecular weight of 5.808 kDa, both identical to that of human insulin.

Insulin Lispro Protamine and Insulin Lispro Mix75/25 is a mixture of 75% insulin lispro protamine, an intermediate-acting human insulin analog, and 25% insulin lispro, a rapid-acting human insulin analog. Insulin lispro protamine suspension is a suspension of crystals produced from combining insulin lispro and protamine sulfate under appropriate conditions for crystal formation.

Insulin lispro has the following primary structure:



Insulin Lispro Protamine and Insulin Lispro Mix75/25 injectable suspension is a white and cloudy, sterile suspension for subcutaneous use.

Each mL of Insulin Lispro Protamine and Insulin Lispro Mix75/25 contains 100 units of insulin lispro; dibasic sodium phosphate (2.0 mg), glycerin (16 mg), metacresol (1.76 mg), phenol (0.715 mg), protamine sulfate (0.28 mg), zinc oxide content adjusted to provide zinc ion (0.025 mg), and Water for Injection, USP. The pH is 7.0 to 7.8. Sodium hydroxide and/or hydrochloric acid is added during manufacture to adjust the pH.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

The primary activity of insulin, including Insulin Lispro Protamine and Insulin Lispro Mix75/25, is the regulation of glucose metabolism. Insulins lower blood glucose by stimulating peripheral glucose uptake by skeletal muscle and fat, and by inhibiting hepatic glucose production. Insulins inhibit lipolysis and proteolysis, and enhance protein synthesis.

### 12.2 Pharmacodynamics

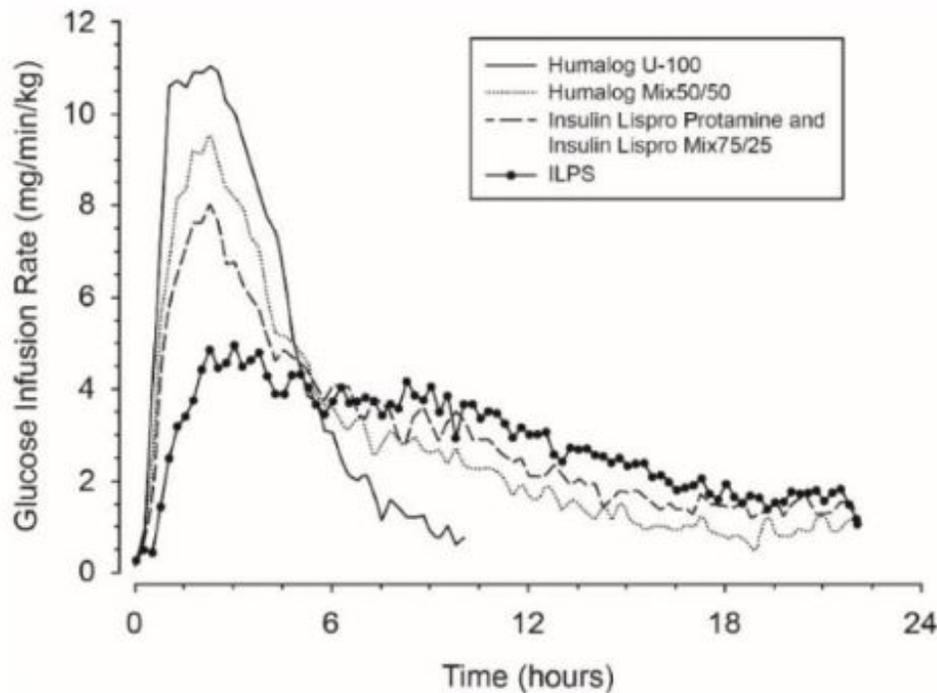
In a glucose clamp study performed in 30 healthy subjects, the onset of action and glucose-lowering activity of HUMALOG, HUMALOG<sup>®</sup> Mix50/50<sup>™</sup>, Insulin Lispro Protamine and Insulin Lispro Mix75/25, and insulin lispro protamine suspension (ILPS) were compared (see Figure 1). Graphs of mean glucose infusion rate versus time showed a distinct insulin activity profile for each formulation. The rapid onset of glucose-lowering activity characteristic of HUMALOG was maintained in Insulin Lispro Protamine and Insulin Lispro Mix75/25. The median maximum pharmacologic effect of Insulin Lispro Protamine and Insulin Lispro Mix75/25 after administration of a 0.3 unit/kg dose to healthy subjects occurred at approximately 2 hours (range: 1-6 hours); glucose lowering activity was detectable for a median of 22 hours (range: 13 to 22 hours), which was the end of the clamp.

In separate glucose clamp studies performed in healthy subjects, pharmacodynamics of Insulin Lispro Protamine and Insulin Lispro Mix75/25 and HUMULIN<sup>®</sup> 70/30 were assessed and are presented in Figure 2. Insulin Lispro Protamine and Insulin Lispro Mix75/25 has a duration of activity similar to that of HUMULIN 70/30.

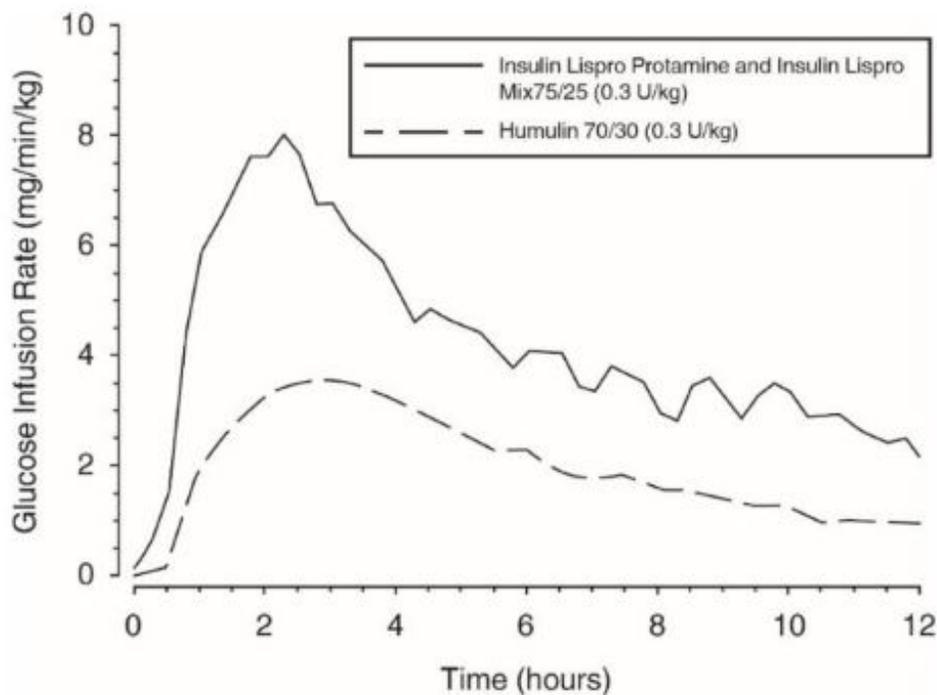
Figures 1 and 2 should be considered only as representative examples since the time course of action of insulin and insulin analogs, may vary in different individuals or within

the same individual.

**Figure 1: Mean Insulin Activity Versus Time Profiles After Injection of 0.3 units/kg of HUMALOG, HUMALOG Mix50/50, Insulin Lispro Protamine and Insulin Lispro Mix75/25, or Insulin Lispro Protamine Suspension (ILPS) in 30 Healthy Subjects.**



**Figure 2: Mean Insulin Activity Versus Time Profiles After Injection of 0.3 units/kg of Insulin Lispro Protamine and Insulin Lispro Mix75/25 or HUMULIN 70/30 in Healthy Subjects.**



## 12.3 Pharmacokinetics

Absorption — Insulin Lispro Protamine and Insulin Lispro Mix75/25 has two phases of absorption. The early phase represents insulin lispro and its distinct characteristics of rapid onset. The late phase represents the prolonged absorption of insulin lispro protamine suspension.

In 31 healthy subjects given subcutaneous doses (0.3 unit/kg) of Insulin Lispro Protamine and Insulin Lispro Mix75/25, the median peak serum concentration was 60 minutes (range: 30 minutes to 4 hours) after dosing. Identical results were found in patients with type 1 diabetes. The rapid absorption characteristics of HUMALOG are maintained with Insulin Lispro Protamine and Insulin Lispro Mix75/25. Insulin Lispro Protamine and Insulin Lispro Mix75/25 has a more rapid absorption than HUMULIN 70/30, which has been confirmed in patients with type 1 diabetes.

Metabolism — Human metabolism studies of Insulin Lispro Protamine and Insulin Lispro Mix75/25 have not been conducted. However, studies in animals indicate that the metabolism of HUMALOG, the rapid-acting component of Insulin Lispro Protamine and Insulin Lispro Mix75/25, is identical to that of regular human insulin.

Elimination — Because of the absorption-rate limited kinetics of insulin mixtures, a true half-life cannot be accurately estimated from the terminal slope of the concentration versus time curve.

### Specific Populations

The effects of age, race, obesity, pregnancy, smoking, or renal or hepatic impairment on the pharmacokinetics of Insulin Lispro Protamine and Insulin Lispro Mix75/25 have not been studied.

*Gender* — Pharmacokinetic and pharmacodynamic comparisons between men and women administered Insulin Lispro Protamine and Insulin Lispro Mix75/25 showed no gender differences.

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Standard 2-year carcinogenicity studies in animals have not been performed with Insulin Lispro Protamine and Insulin Lispro Mix75/25. In Fischer 344 rats, a 12-month repeat-dose toxicity study was conducted with insulin lispro (a component of Insulin Lispro Protamine and Insulin Lispro Mix75/25) at subcutaneous doses of 20 and 200 units/kg/day (approximately 3 and 32 times the human subcutaneous dose of 1 unit insulin lispro/kg/day, based on units/body surface area). Insulin lispro did not produce important target organ toxicity including mammary tumors at any dose.

Insulin lispro was not mutagenic in the following genetic toxicity assays: bacterial mutation, unscheduled DNA synthesis, mouse lymphoma, chromosomal aberration and micronucleus assays.

Male fertility was not compromised when male rats given subcutaneous insulin lispro injections of 5 and 20 units/kg/day (0.8 and 3 times the human subcutaneous dose of

1 unit insulin lispro/kg/day, based on units/body surface area) for 6 months were mated with untreated female rats. In a combined fertility, perinatal, and postnatal study in male and female rats given 1, 5, and 20 units/kg/day subcutaneously (0.2, 0.8, and 3 times the human subcutaneous dose of 1 unit insulin lispro/kg/day, based on units/body surface area), mating and fertility were not adversely affected in either gender at any dose.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

### 16.1 How Supplied

Insulin Lispro Protamine and Insulin Lispro, injectable suspension, is a white and cloudy suspension of 100 units/mL (U-100) of 75% insulin lispro protamine and 25% insulin lispro available as:

3 mL single-patient-use KwikPen prefilled pen	NDC 0002-8233-05
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Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPens must never be shared between patients, even if the needle is changed. Always use a new needle for each injection to prevent contamination.

The Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen dials in 1 unit increments.

### 16.2 Storage and Handling

Dispense in the original sealed carton with the enclosed Instructions for Use.

Protect from direct heat and light. Do not freeze and do not use if it has been frozen. See storage table below:

	<b>Not In-Use (Unopened) Refrigerated (36° to 46°F [2° to 8°C])</b>	<b>Not In Use (Unopened) Room Temperature (up to 86°F [30°C])</b>	<b>In-Use (Opened) (see temperature below)</b>
3 mL single-patient-use KwikPen	Until expiration date	10 days	10 days Room temperature only (Do not refrigerate)

## 17 PATIENT COUNSELING INFORMATION

*Advise the patient to read the FDA-approved patient labeling (Patient Information and Instructions for Use).*

### **Never Share an Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen Between Patients**

Advise patients using Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPens not

to share needles or KwikPens with another person. Sharing poses a risk for transmission of blood-borne pathogens [see *Warnings and Precautions (5.1)*].

### **Hyperglycemia or Hypoglycemia**

Inform patients that hypoglycemia is the most common adverse reaction with insulin. Instruct patients on self-management procedures including glucose monitoring, proper injection technique, and management of hypoglycemia and hyperglycemia, especially at initiation of Insulin Lispro Protamine and Insulin Lispro Mix75/25 therapy. Instruct patients on handling of special situations such as intercurrent conditions (illness, stress, or emotional disturbances), an inadequate or skipped insulin dose, inadvertent administration of an increased insulin dose, inadequate food intake, and skipped meals. Instruct patients on the management of hypoglycemia [see *Warnings and Precautions (5.3)*].

Inform patients that their ability to concentrate and react may be impaired as a result of hypoglycemia. Advise patients who have frequent hypoglycemia or reduced or absent warning signs of hypoglycemia to use caution when driving or operating machinery.

Advise patients that changes in insulin regimen can predispose to hyperglycemia or hypoglycemia and that changes in insulin regimen should be made under close medical supervision [see *Warnings and Precautions (5.2)*].

### **Hypoglycemia due to Medication Errors**

Instruct patients to always check the insulin label before each injection to avoid mix-ups between insulin products [see *Warnings and Precautions (5.4)*].

### **Hypersensitivity Reactions**

Advise patients that hypersensitivity reactions have occurred with Insulin Lispro Protamine and Insulin Lispro Mix75/25. Inform patients on the symptoms of hypersensitivity reactions and to seek medical attention if they occur [see *Warnings and Precautions (5.5)*].

### **Manufactured by:**

**Eli Lilly and Company**

**Indianapolis, IN 46285, USA**

**US License Number 1891**

Humalog<sup>®</sup> Mix75/25<sup>™</sup> and KwikPen<sup>®</sup> are trademarks of Eli Lilly and Company.

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ILPILIS7525-0002-USPI-20230721

### **PATIENT PACKAGE INSERT**

#### **PATIENT INFORMATION**

**Insulin Lispro Protamine and Insulin Lispro [IHN-soo-lihn LIYS-proh]  
injectable suspension, for subcutaneous use**

This product is HUMALOG<sup>®</sup> Mix75/25<sup>™</sup> (insulin lispro protamine and insulin lispro).

**Do not share your Insulin Lispro Protamine and Insulin Lispro Mix75/25**

**KwikPen with other people, even if the needle has been changed. You may give other people a serious infection or get a serious infection from them.**

**What is Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

- Insulin Lispro Protamine and Insulin Lispro Mix75/25 is a man-made insulin that is used to control high blood sugar in adults with diabetes mellitus.
- It is not known if Insulin Lispro Protamine and Insulin Lispro Mix75/25 is safe and effective in children under 18 years of age.

**Who should not take Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

**Do not take Insulin Lispro Protamine and Insulin Lispro Mix75/25 if you:**

- are having an episode of low blood sugar (hypoglycemia).
- have an allergy to Insulin Lispro Protamine and Insulin Lispro Mix75/25 or any of the ingredients in Insulin Lispro Protamine and Insulin Lispro Mix75/25. See the end of this Patient Information leaflet for a complete list of ingredients in Insulin Lispro Protamine and Insulin Lispro Mix75/25.

**What should I tell my healthcare provider before taking Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

**Before taking Insulin Lispro Protamine and Insulin Lispro Mix75/25, tell your healthcare provider about all of your medical conditions, including if you:**

- have liver or kidney problems.
- take any other medicines, especially ones called TZDs (thiazolidinediones).
- have heart failure or other heart problems. If you have heart failure, it may get worse while you take TZDs with Insulin Lispro Protamine and Insulin Lispro Mix75/25.
- are pregnant or plan to become pregnant. Talk with your healthcare provider about the best way to control your blood sugar if you plan to become pregnant or while you are pregnant.
- are breastfeeding or plan to breastfeed. Talk with your healthcare provider about the best way to feed your baby while taking Insulin Lispro Protamine and Insulin Lispro Mix75/25.

**Tell your healthcare provider about all the medicines you take,** including prescription and over-the-counter medicines, vitamins, and herbal supplements.

**Before you start taking Insulin Lispro Protamine and Insulin Lispro Mix75/25, talk to your healthcare provider about low blood sugar and how to manage it.**

**How should I take Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

- Read the **Instructions for Use** that comes with your Insulin Lispro Protamine and Insulin Lispro Mix75/25.
- Take Insulin Lispro Protamine and Insulin Lispro Mix75/25 exactly as your healthcare provider tells you to. Your healthcare provider should tell you how much Insulin Lispro Protamine and Insulin Lispro Mix75/25 to take and when to take it.
- **Insulin Lispro Protamine and Insulin Lispro Mix75/25 starts acting fast. Inject Insulin Lispro Protamine and Insulin Lispro Mix75/25 within 15 minutes before you eat a meal.**
- Know the type, strength, and amount of insulin you take. **Do not** change the type or amount of insulin you take unless your healthcare provider tells you to. The amount of insulin and the best time for you to take your insulin may need to change if you take different types of insulin.

- Check your insulin label each time you give your injection to make sure you are taking the correct insulin.
- Inject Insulin Lispro Protamine and Insulin Lispro Mix75/25 under the skin (subcutaneously) of your stomach area (abdomen), buttocks, upper legs or upper arms. **Do not** inject Insulin Lispro Protamine and Insulin Lispro Mix75/25 into your vein (intravenously) or use in an insulin infusion pump.
- **Change (rotate) your injection sites within the area you choose with each dose** to reduce your risk of getting lipodystrophy (pits in skin or thickened skin) and localized cutaneous amyloidosis (skin with lumps) at the injection sites.
  - **Do not** use the exact same spot for each injection.
  - **Do not** inject where the skin has pits, is thickened, or has lumps.
  - **Do not** inject where the skin is tender, bruised, scaly or hard, or into scars or damaged skin.
- **Do not** mix Insulin Lispro Protamine and Insulin Lispro Mix75/25 with other insulins or liquids.
- **Check your blood sugar levels.** Ask your healthcare provider what your blood sugars should be and when you should check your blood sugar levels.

**Keep Insulin Lispro Protamine and Insulin Lispro Mix75/25 and all medicines out of the reach of children.**

**Your dose of Insulin Lispro Protamine and Insulin Lispro Mix75/25 may need to change because of a:**

- change in physical activity or exercise, weight gain or loss, increased stress, illness, change in diet, or because of other medicines you take.

**What should I avoid while taking Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

**While taking Insulin Lispro Protamine and Insulin Lispro Mix75/25 do not:**

- drive or operate heavy machinery until you know how Insulin Lispro Protamine and Insulin Lispro Mix75/25 affects you.
- drink alcohol or take prescription or over-the-counter medicines that contain alcohol.

**What are the possible side effects of Insulin Lispro Protamine and Insulin Lispro Mix75/25?**

**Insulin Lispro Protamine and Insulin Lispro Mix75/25 may cause serious side effects that can lead to death, including:**

- **low blood sugar (hypoglycemia).** Signs and symptoms of low blood sugar may include:
 

◦ dizziness or light-headedness	◦ slurred speech
◦ sweating	◦ shakiness
◦ confusion	◦ fast heartbeat
◦ headache	◦ anxiety, irritability or mood changes
◦ blurred vision	◦ hunger

Your healthcare provider may prescribe a glucagon product for emergency use so that someone else can give you glucagon if your blood sugar becomes too low (severe hypoglycemia) and you are unable to take sugar by mouth.

- **severe allergic reaction (whole body reaction).** **Get medical help right away, if you have any of these signs or symptoms of a severe allergic**

**reaction:**

- a rash over your whole body
- a fast heartbeat
- trouble breathing
- sweating
- **low potassium in your blood (hypokalemia).**
- **heart failure.** Taking certain diabetes pills called thiazolidinediones or “TZDs” with Insulin Lispro Protamine and Insulin Lispro Mix75/25 may cause heart failure in some people. This can happen even if you have never had heart failure or heart problems before. If you already have heart failure it may get worse while you take TZDs with Insulin Lispro Protamine and Insulin Lispro Mix75/25. Your healthcare provider should monitor you closely while you are taking TZDs with Insulin Lispro Protamine and Insulin Lispro Mix75/25. Tell your healthcare provider if you have any new or worse symptoms of heart failure including:
  - shortness of breath
  - sudden weight gain
  - swelling of your ankles or feet

Treatment with TZDs and Insulin Lispro Protamine and Insulin Lispro Mix75/25 may need to be adjusted or stopped by your healthcare provider if you have new or worse heart failure.

**Get emergency medical help if you have:**

- trouble breathing
- sweating
- shortness of breath
- extreme drowsiness
- fast heartbeat
- dizziness
- swelling of your face, tongue, or throat
- confusion

**The most common side effects of Insulin Lispro Protamine and Insulin Lispro Mix75/25 include:**

- low blood sugar (hypoglycemia)
- weight gain
- reactions at your injection site
- swelling in your hands or feet
- skin thickening or pits at the injection site (lipodystrophy)
- itching
- rash

**These are not all the possible side effects of Insulin Lispro Protamine and Insulin Lispro Mix75/25.** Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

**General information about the safe and effective use of Insulin Lispro Protamine and Insulin Lispro Mix75/25.**

Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not take Insulin Lispro Protamine and Insulin Lispro Mix75/25 for a condition for which it was not prescribed. Do not give Insulin Lispro Protamine and Insulin Lispro Mix75/25 to other people, even if they have the same symptoms that you have. It may harm them.

This Patient Information leaflet summarizes the most important information about Insulin Lispro Protamine and Insulin Lispro Mix75/25. If you would like more information, talk with your healthcare provider. You can ask your pharmacist or healthcare provider for information about Insulin Lispro Protamine and Insulin Lispro Mix75/25 that is written for health professionals.

## What are the ingredients in Insulin Lispro Protamine and Insulin Lispro Mix75/25?

**Active ingredients:** insulin lispro

**Inactive ingredients:** dibasic sodium phosphate, glycerin, hydrochloric acid, metacresol, phenol, protamine sulfate, sodium hydroxide, zinc oxide (zinc ion), and Water for Injection, USP.

Humalog<sup>®</sup> Mix75/25<sup>™</sup> and KwikPen<sup>®</sup> are trademarks of Eli Lilly and Company.

Manufactured by: Eli Lilly and Company, Indianapolis, IN 46285, USA, US License Number 1891

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For more information, call 1-800-545-5979.

This Patient Information has been approved by the U.S. Food and Drug Administration.

Revised: 07/2023

ILPILIS7525-0002-PPI-20230721

## KWIKPEN INSTRUCTIONS FOR USE

### INSTRUCTIONS FOR USE

#### Insulin Lispro Protamine and Insulin Lispro [IHN-soo-lihn LIYS-proh] Mix75/25<sup>™</sup> KwikPen<sup>®</sup>

**injectable suspension, for subcutaneous use**

**3 mL single-patient-use pen (100 units per mL)**

This product is HUMALOG<sup>®</sup> Mix75/25<sup>™</sup> (insulin lispro protamine and insulin lispro).



Read this Instructions for Use before you start taking Insulin Lispro Protamine and Insulin Lispro Mix75/25 and each time you get another KwikPen. There may be new information. This information does not take the place of talking to your healthcare provider about your medical condition or your treatment.

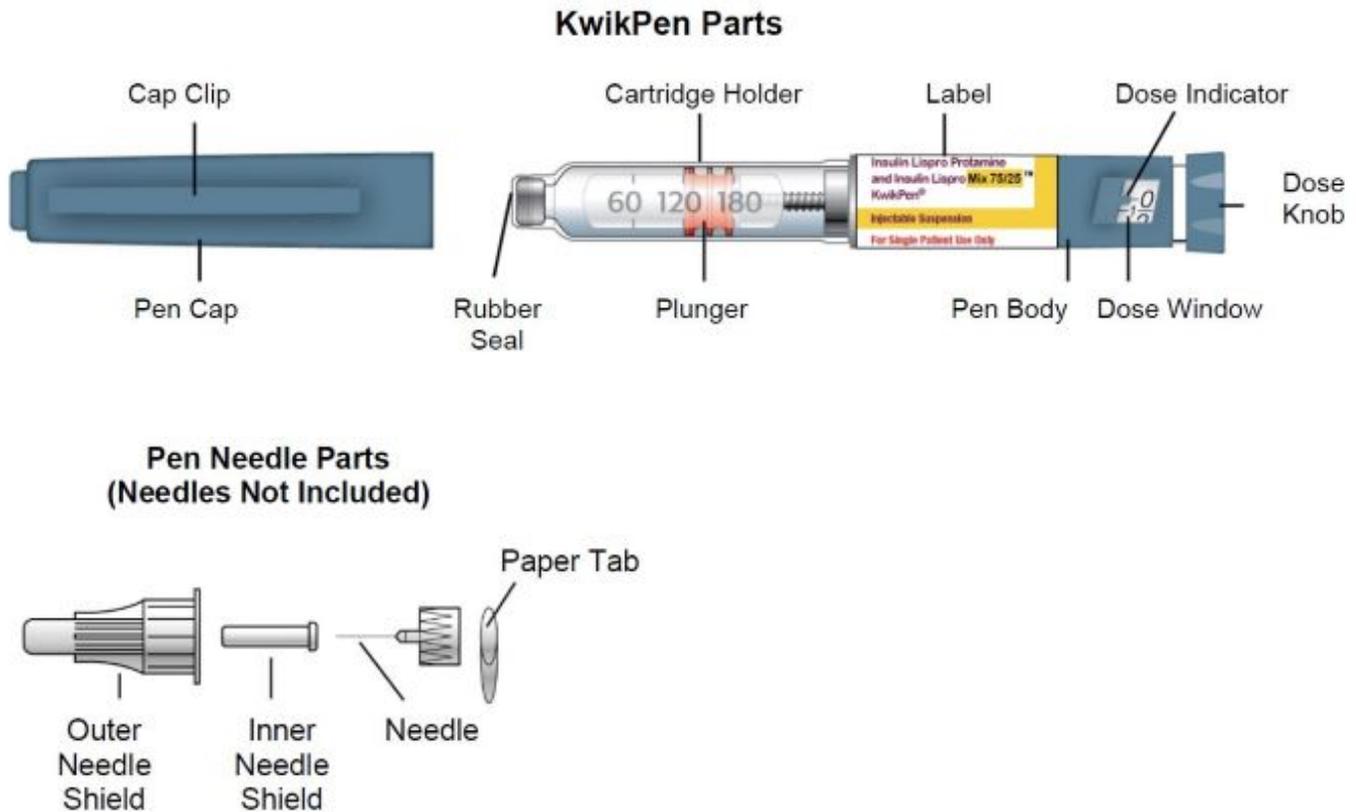
**Do not share your Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen with other people, even if the needle has been changed. You may give other people a serious infection or get a serious infection from them.**

Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen (“Pen”) is a disposable single-patient-use prefilled pen containing 300 units of Insulin Lispro Protamine and Insulin Lispro Mix75/25.

- You can give yourself more than 1 dose from the Pen.
- By turning the Dose Knob, you can dial doses from 1 to 60 units in 1 unit increments.
- **If your dose is more than 60 units, you will need to give yourself more than 1 injection.**
- The Plunger only moves a little with each injection, and you may not notice that it

moves. The Plunger will only reach the end of the cartridge when you have used all 300 units in the Pen.

**People who are blind or have vision problems should not use this Pen without help from a person trained to use the Pen.**



### **How to recognize your Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen**

- Pen color: Dark blue
- Dose Knob: Dark blue
- Labels: White label with yellow stripe

### **Supplies you will need to give your injection**

- Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen
- KwikPen compatible Needle (Becton, Dickinson and Company Pen Needles recommended)
- Alcohol swab
- Gauze

### **Preparing your Pen**

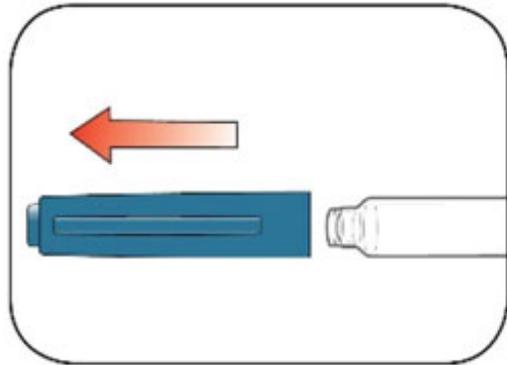
- Wash your hands with soap and water.
- Check your Pen to make sure you are taking the right type of insulin. This is especially important if you use more than 1 type of insulin.
- **Always use a new needle for each injection to help prevent infections and blocked needles. Do not reuse or share your needles with other people. You may give other people a serious infection or get a serious infection**

from them.

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### Step 1:

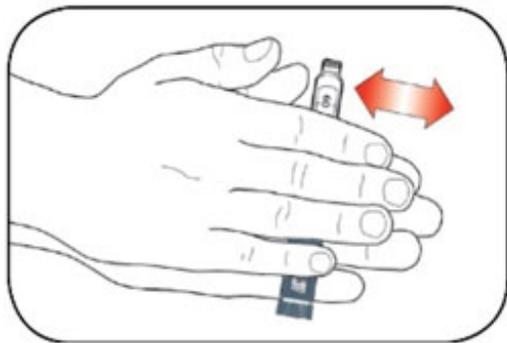
- Pull the Pen Cap straight off.
  - **Do not** remove the Pen Label.
- Wipe the Rubber Seal with an alcohol swab.
  - **Do not** attach the Needle before mixing.



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### Step 2:

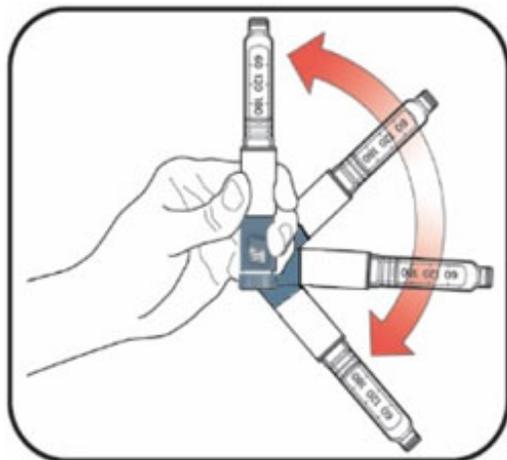
- Gently roll the Pen between your hands at least 10 times.



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### Step 3:

- Move the Pen up and down (invert) at least 10 times.  
**Mixing by rolling and inverting the Pen is important** to make sure you get the right dose.  
After mixing Insulin Lispro Protamine and Insulin Lispro Mix75/25, inject your dose right away. If you wait to inject your dose, the insulin will need to be mixed again.



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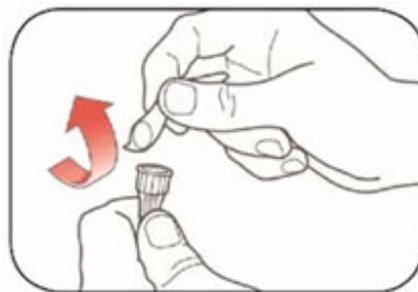
### Step 4:

- **Check the liquid in the Pen.** Insulin Lispro Protamine and Insulin Lispro Mix75/25 should look white and cloudy after mixing. **Do not** use if it looks clear or has any lumps or particles in it.

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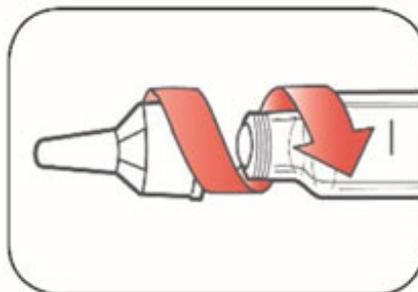
### Step 5:

- **Select a new Needle.**
- Pull off the Paper Tab from the Outer Needle Shield.



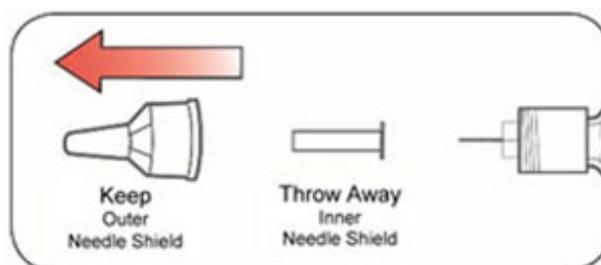
### Step 6:

- Push the capped Needle straight onto the Pen and twist the Needle on until it is tight.



### Step 7:

- Pull off the Outer Needle Shield. **Do not** throw it away.
- Pull off the Inner Needle Shield and throw it away.



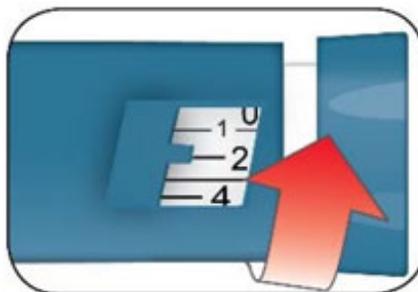
## Priming your Pen

### Prime your Pen before each injection.

- Priming your Pen means removing the air from the Needle and Cartridge that may collect during normal use and ensures that the Pen is working correctly.
- If you **do not** prime before each injection, you may get too much or too little insulin.

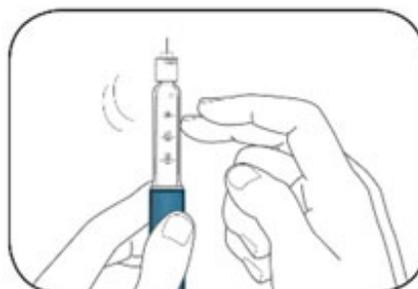
### Step 8:

- To prime your Pen, turn the Dose Knob to select 2 units.



### Step 9:

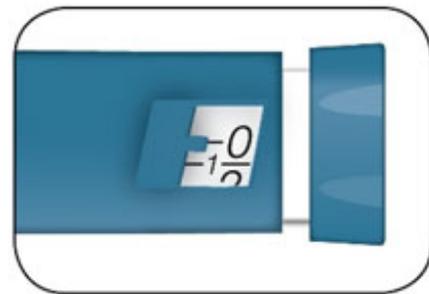
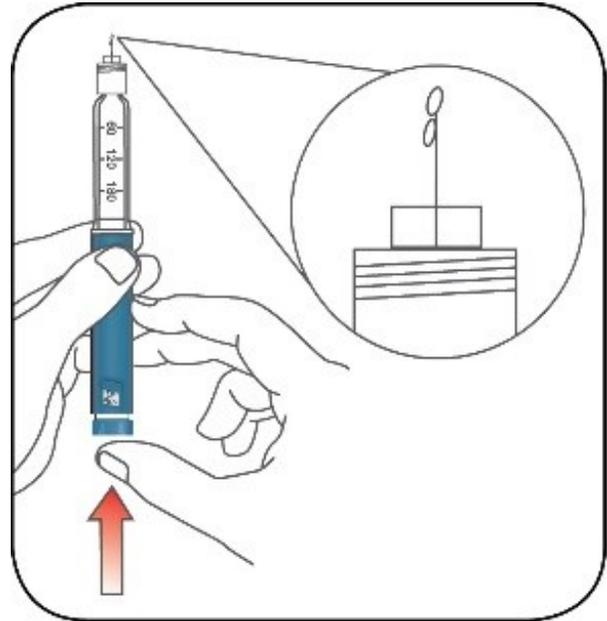
- Hold your Pen with the Needle pointing up. Tap the Cartridge Holder gently to collect air bubbles at the top.



### Step 10:

- Continue holding your Pen with Needle pointing up. Push the Dose Knob in until it stops, and “0” is seen in the Dose Window. Hold the Dose Knob in and **count to 5 slowly**.
- You should see insulin at the tip of the Needle.
  - If you **do not** see insulin, repeat priming steps 8 to 10, no more than 4 times.
  - If you **still do not** see insulin, change the Needle and repeat priming steps 8 to 10.

Small air bubbles are normal and will not affect your dose.

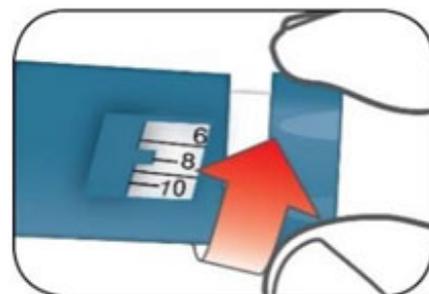


### Selecting your dose

- You can give from 1 to 60 units in a single injection.
- If your dose is more than 60 units, you will need to give more than one injection.
  - If you need help with dividing up your dose the right way, ask your healthcare provider.
  - Use a new Needle for each injection and repeat the priming steps.

### Step 11:

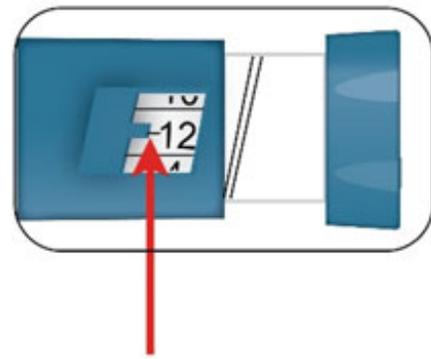
- Turn the Dose Knob to select the number of units you need to inject. The Dose Indicator should line up with your dose.
  - The Pen dials 1 unit at a time.
  - The Dose Knob clicks as you turn it.
  - **Do not** dial your dose by counting the clicks. You may dial the wrong



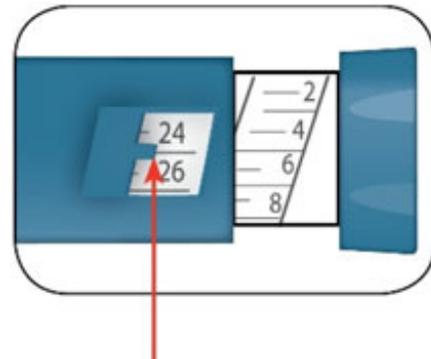
the slider. You may dial the wrong dose. This may lead to you getting too much insulin or not enough insulin.

- The dose can be corrected by turning the Dose Knob in either direction until the correct dose lines up with the Dose Indicator.
- The **even** numbers (for example, 12) are printed on the dial.
- The **odd** numbers, (for example, 25) after the number 1, are shown as full lines.

- **Always check the number in the Dose Window to make sure you have dialed the correct dose.**



(Example: 12 units shown in the Dose Window)



(Example: 25 units shown in the Dose Window)

- The Pen will not let you dial more than the number of units left in the Pen.
- If you need to inject more than the number of units left in the Pen, you may either:
  - inject the amount left in your Pen and then use a new Pen to give the rest of your dose, **or**
  - get a new Pen and inject the full dose.
- It is normal to see a small amount of insulin left in the Pen that you can not inject.

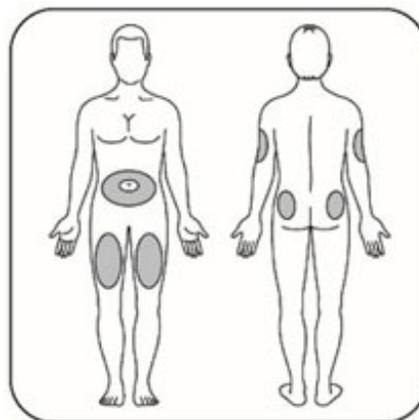
### **Giving your injection**

- Inject your insulin as your healthcare provider has shown you.
- Change (rotate) your injection sites within the area you choose for each dose to reduce your risk of getting lipodystrophy (pits in skin or thickened skin) and localized cutaneous amyloidosis (skin with lumps) at the injection sites.
- **Do not** inject where the skin has pits, is thickened, or has lumps.
- **Do not** inject where the skin is tender, bruised, scaly or hard, or into scars or damaged skin.
- **Do not** try to change your dose while injecting.

---

### **Step 12:**

- Choose your injection site.  
Insulin Lispro Protamine and Insulin Lispro Mix75/25 is injected under the skin (subcutaneously) of your stomach area, buttocks, upper legs or upper arms.
- Wipe your skin with an alcohol swab, and let your skin dry before you inject your dose.

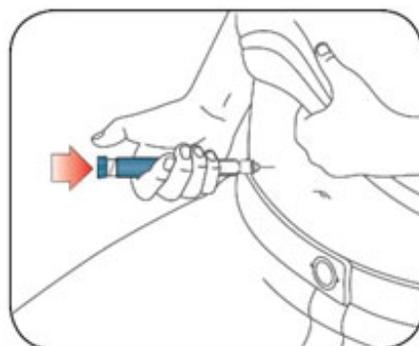


### Step 13:

- Insert the Needle into your skin.
- Push the Dose Knob all the way in.
- Continue to hold the Dose Knob in and **slowly count to 5** before removing the Needle.

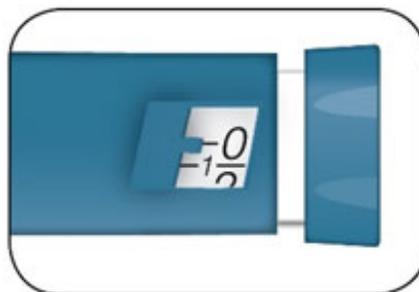


**Do not** try to inject your insulin by turning the Dose Knob. You will **not** receive your insulin by turning the Dose Knob.



### Step 14:

- Pull the Needle out of your skin.  
A drop of insulin at the Needle tip is normal. It will not affect your dose.
- Check the number in the Dose Window.
  - If you see “0” in the Dose Window, you have received the full amount you dialed.
  - If you do not see “0” in the Dose Window, do not redial. Insert the Needle into your skin and finish your injection.
  - If you **still** do not think you received the full amount you dialed for your injection, **do not start over or repeat the injection.** Monitor your blood glucose as instructed by your healthcare provider.
  - If you normally need to give 2



injections for your full dose, be sure to give your second injection.

The Plunger only moves a little with each injection, and you may not notice that it moves.

If you see blood after you take the Needle out of your skin, press the injection site lightly with a piece of gauze or an alcohol swab. **Do not** rub the area.

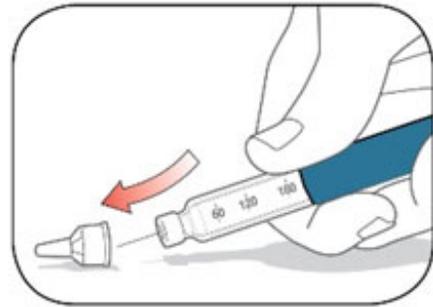
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## After your injection

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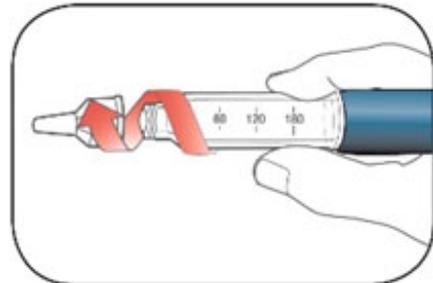
### Step 15:

- Carefully replace the Outer Needle Shield.



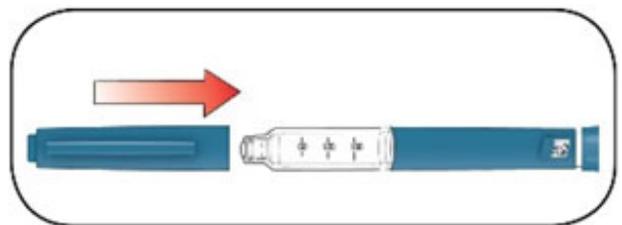
### Step 16:

- Unscrew the capped Needle and throw it away (see **Disposing of Pens and Needles** section).
- Do not** store the Pen with the Needle attached to prevent leaking, blocking the Needle, and air from entering the Pen.



### Step 17:

- Replace the Pen Cap by lining up the Cap Clip with the Dose Indicator and pushing straight on.



## Disposing of Pens and Needles

- The used Pen may be discarded in your household trash after you have removed the needle.
- Put your used needles in a FDA-cleared sharps disposal container right away after use. **Do not** throw away (dispose of) loose needles in your household trash.
- If you do not have a FDA-cleared sharps disposal container, you may use a household container that is:
  - made of a heavy-duty plastic,
  - can be closed with a tight-fitting, puncture-resistant lid, without sharps being

- able to come out,
  - upright and stable during use,
  - leak-resistant, and
  - properly labeled to warn of hazardous waste inside the container.
- When your sharps disposal container is almost full, you will need to follow your community guidelines for the right way to dispose of your sharps disposal container. There may be state or local laws about how you should throw away used needles and syringes. For more information about safe sharps disposal, and for specific information about sharps disposal in the state that you live in, go to the FDA's website at: <http://www.fda.gov/safesharpsdisposal>
  - **Do not** dispose of your used sharps disposal container in your household trash unless your community guidelines permit this. **Do not** recycle your used sharps disposal container.

## Storing your Pen

### Unused Pens

- Store unused Pens in the refrigerator at 36°F to 46°F (2°C to 8°C).
- **Do not** freeze your insulin. **Do not** use if Insulin Lispro Protamine and Insulin Lispro Mix75/25 has been frozen.
- Unused Pens may be used until the expiration date printed on the Label, if the Pen has been kept in the refrigerator.
- Unused Pens stored at room temperature, up to 86°F (30°C), should be thrown away after 10 days.

### In-use Pen

- Store the Pen you are currently using at room temperature [up to 86°F (30°C)]. Keep away from heat and light.
- Throw away the Insulin Lispro Protamine and Insulin Lispro Mix75/25 Pen you are using after 10 days, even if it still has insulin left in it.

## General information about the safe and effective use of your Pen

- **Keep your Pen and needles out of the reach of children.**
- **Do not** use your Pen if any part looks broken or damaged.
- Always carry an extra Pen in case yours is lost or damaged.

## Troubleshooting

- If you can not remove the Pen Cap, gently twist the cap back and forth, and then pull the cap straight off.
- If the Dose Knob is hard to push:
  - Pushing the Dose Knob more slowly will make it easier to inject.
  - Your Needle may be blocked. Put on a new Needle and prime the Pen.
  - You may have dust, food, or liquid inside the Pen. Throw the Pen away and get a new Pen.

If you have any questions or problems with your Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen, contact Lilly at 1-800-LillyRx (1-800-545-5979) or call your healthcare provider for help.

Manufactured by:

Eli Lilly and Company  
Indianapolis, IN 46285, USA

US License Number 1891

*This Instructions for Use has been approved by the U.S. Food and Drug Administration.*

Revised: 07/2023

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<b>Insulin Lispro Protamine and Insulin Lispro Mix75/25 KwikPen</b> meets the current dose accuracy and functional requirements of ISO 11608-1.
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ILPILIS7525KP-0003-IFU-20230721

**PACKAGE CARTON - Insulin Lispro Protamine and Insulin Lispro Injectable Suspension KwikPen Mix75/25™ 5ct**

NDC 0002-8233-05

Insulin Lispro Protamine and Insulin Lispro KwikPen Mix75/25™ Injectable Suspension

For Single Patient Use Only

Dispense in this sealed carton.

Needles not included

100 units per mL (U-100)

This device is recommended for use with Becton, Dickinson and Company's insulin pen needles

For subcutaneous use only.

prefilled insulin delivery device

Rx only

This product is Humalog Mix75/25.

5 x 3 mL Prefilled Pens

Read Insulin Delivery Device Instructions for Use



# INSULIN LISPRO PROTAMINE AND INSULIN LISPRO INJECTABLE SUSPENSION MIX75/25 KWIKPEN

insulin lispro injection, suspension

## Product Information

<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:0002-8233
<b>Route of Administration</b>	SUBCUTANEOUS		

## Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
<b>Insulin lispro</b> (UNII: GFX7QIS1II) (Insulin lispro - UNII:GFX7QIS1II)	Insulin lispro	100 [iU] in 1 mL

## Inactive Ingredients

Ingredient Name	Strength
<b>Protamine sulfate</b> (UNII: 0DE9724IHC)	0.28 mg in 1 mL

<b>Glycerin</b> (UNII: PDC6A3C0OX)	16 mg in 1 mL
<b>Sodium Phosphate, Dibasic, Unspecified Form</b> (UNII: GR686LBA74)	3.78 mg in 1 mL
<b>Metacresol</b> (UNII: GGO4Y809LO)	1.76 mg in 1 mL
<b>Zinc oxide</b> (UNII: SOI2LOH54Z)	.025 mg in 1 mL
<b>Phenol</b> (UNII: 339NCG44TV)	.715 mg in 1 mL
<b>Water</b> (UNII: 059QF0KO0R)	
<b>Hydrochloric acid</b> (UNII: QTT17582CB)	
<b>Sodium hydroxide</b> (UNII: 55X04QC32I)	

### Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0002-8233-05	5 in 1 CARTON	02/12/2020	
1	NDC:0002-8233-01	3 mL in 1 SYRINGE; Type 3: Prefilled Biologic Delivery Device/System (syringe, patch, etc.)		

### Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
BLA	BLA021017	02/12/2020	

**Labeler** - Eli Lilly and Company (006421325)

Revised: 12/2023

Eli Lilly and Company