## ORAL GLUCOSE-LOWERING AGENTS

### Drug Class: Sulfonylureas

**Actions:** Stimulates insulin secretion; lowers fasting plasma glucose  
**Indications:** Type 2 diabetes as monotherapy or in combination with insulin, metformin, DPP-IV inhibitors, incretin mimetics, or TZDs

<table>
<thead>
<tr>
<th>RX</th>
<th>Initial Dose</th>
<th>Initial Dose (elderly)</th>
<th>Fixed Dose</th>
<th>Fixed Dose (elderly)</th>
<th>Dose Adjustment Schedule</th>
<th>Usual Maint. Dosage</th>
<th>Max. Effective Dose</th>
<th>A1C Lowering</th>
<th>Wt</th>
<th>Renal Dosing</th>
<th>Hepatic Dosing</th>
<th>Lab Monitoring</th>
<th>Common Side Effects</th>
<th>Contraindications/Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Glipizide</strong></td>
<td>5 mg</td>
<td>5 mg/day</td>
<td>Increase by 2.5 to 5 mg (&gt; 15 mg/day = BID)</td>
<td>5-15 mg/day</td>
<td>20 mg/day</td>
<td>N/A</td>
<td>Start at 2.5 mg/day</td>
<td>N/A</td>
<td>Hypoglycemia</td>
<td>Weight gain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glyburide</strong></td>
<td>2.5 mg</td>
<td>2.5 mg/day</td>
<td>Increase by 1-2 mg</td>
<td>1-4 mg/day</td>
<td>8 mg/day</td>
<td>N/A</td>
<td>Start at 1 mg/day and monitor</td>
<td>Mild--start at 1 mg (monitor)</td>
<td>Severe--avoid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Drug Class: Biguanides

**Actions:** Targets hepatic cells; decreases hepatic glucose production; does not stimulate insulin secretion; lowers fasting plasma glucose  
**Indications:** Type 2 diabetes as monotherapy or in combination with any other agent or insulin; overweight; dyslipidemic; children (approved for ≥ age 10)

<table>
<thead>
<tr>
<th>RX</th>
<th>Initial Dose</th>
<th>Initial Dose (elderly)</th>
<th>Fixed Dose</th>
<th>Fixed Dose (elderly)</th>
<th>Dose Adjustment Schedule</th>
<th>Usual Maint. Dosage</th>
<th>Max. Effective Dose</th>
<th>A1C Lowering</th>
<th>Wt</th>
<th>Renal Dosing</th>
<th>Hepatic Dosing</th>
<th>Lab Monitoring</th>
<th>Common Side Effects</th>
<th>Contraindications/Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metformin</strong></td>
<td>500 mg</td>
<td>1000 mg</td>
<td>500 mg BID</td>
<td>1000-2000 mg/day</td>
<td>2550 mg/day</td>
<td>Contraindicated if SCr ≥ 1.5 mg/dl or eGFR &lt; 50</td>
<td>Avoid due to risk of lactic acidosis</td>
<td>N/A</td>
<td>Hypoglycemia</td>
<td>Weight gain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Metformin ER</strong></td>
<td>500 mg</td>
<td>750 mg</td>
<td>500 mg</td>
<td>500-2000 mg/day</td>
<td>2000 mg/day</td>
<td>1.0-2%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Drug Class: TZD (Thiazolidinediones)

**Actions:** Regulates insulin responsive genes necessary for glucose and lipid metabolism; improves sensitivity to insulin in skeletal and adipose tissue  
**Indications:** Type 2 diabetes as monotherapy or in combination with any other agent; Actos is also approved for use with insulin  
**Note:** Rosiglitazone is not listed on this chart due to restricted use by FDA. For more information, see: [http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm226976.htm](http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm226976.htm)

<table>
<thead>
<tr>
<th>RX</th>
<th>Initial Dose</th>
<th>Initial Dose (elderly)</th>
<th>Fixed Dose</th>
<th>Fixed Dose (elderly)</th>
<th>Dose Adjustment Schedule</th>
<th>Usual Maint. Dosage</th>
<th>Max. Effective Dose</th>
<th>A1C Lowering</th>
<th>Wt</th>
<th>Renal Dosing</th>
<th>Hepatic Dosing</th>
<th>Lab Monitoring</th>
<th>Common Side Effects</th>
<th>Contraindications/Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>pioglitazone (Actos)</td>
<td>15 mg</td>
<td>30 mg</td>
<td>45 mg</td>
<td>15-30 mg</td>
<td>Increase by 15 mg 6-12 wks</td>
<td>15-45 mg/day</td>
<td>45 mg/day (30 mg if on insulin)</td>
<td>1-1.5%</td>
<td>N/A</td>
<td>Do NOT use if ALT &gt; 2.5X ULN</td>
<td>Do NOT use with rosiglitazone in combination with insulin or nitrates (may increase risk of MI)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- **Usual Dosing:**
  - Initial Dose: Start at 1 mg/day, increase by 1-2 mg/week.
  - Usual maintenance dose: 5-15 mg/day.
  - Max. Effective Dose: 2550 mg/day.
  - A1C Lowering: Start at 1.0-2%.

- **Contraindications/Precautions:**
  - Use caution in people with sulfa allergies.
  - Use glyburide with caution due to greater risk of hypoglycemia.
  - Use caution with renal or hepatic insufficiency (glipizide or glimepiride preferred choices).
  - Immediate release and extended release glipizide doses are not equivalent.

- **Common Side Effects:**
  - Hypoglycemia
  - Weight gain

- **Lab Monitoring:**
  - Routine monitoring of HbA1c, fasting blood glucose, and fasting triglycerides.

- **Drug Class:** Sulfonylureas
- **Actions:** Stimulates insulin secretion; lowers fasting plasma glucose
- **Indications:** Type 2 diabetes as monotherapy or in combination with insulin, metformin, DPP-IV inhibitors, incretin mimetics, or TZDs

- **Usual Dosing:**
  - Initial Dose: Start at 1 mg/day, increase by 1-2 mg/week.
  - Usual maintenance dose: 5-15 mg/day.
  - Max. Effective Dose: 2550 mg/day.
  - A1C Lowering: Start at 1.0-2%.

- **Contraindications/Precautions:**
  - Use caution in people with sulfa allergies.
  - Use glyburide with caution due to greater risk of hypoglycemia.
  - Use caution with renal or hepatic insufficiency (glipizide or glimepiride preferred choices).
  - Immediate release and extended release glipizide doses are not equivalent.

- **Common Side Effects:**
  - Hypoglycemia
  - Weight gain

- **Lab Monitoring:**
  - Routine monitoring of HbA1c, fasting blood glucose, and fasting triglycerides.

- **Drug Class:** Biguanides
- **Actions:** Targets hepatic cells; decreases hepatic glucose production; does not stimulate insulin secretion; lowers fasting plasma glucose
- **Indications:** Type 2 diabetes as monotherapy or in combination with any other agent or insulin; overweight; dyslipidemic; children (approved for ≥ age 10)

- **Usual Dosing:**
  - Initial Dose: Start at 1 mg/day, increase by 1-2 mg/week.
  - Usual maintenance dose: 5-15 mg/day.
  - Max. Effective Dose: 2550 mg/day.
  - A1C Lowering: Start at 1.0-2%.

- **Contraindications/Precautions:**
  - Use caution in people with sulfa allergies.
  - Use glyburide with caution due to greater risk of hypoglycemia.
  - Use caution with renal or hepatic insufficiency (glipizide or glimepiride preferred choices).
  - Immediate release and extended release glipizide doses are not equivalent.

- **Common Side Effects:**
  - Hypoglycemia
  - Weight gain

- **Lab Monitoring:**
  - Routine monitoring of HbA1c, fasting blood glucose, and fasting triglycerides.

- **Drug Class:** TZD (Thiazolidinediones)
- **Actions:** Regulates insulin responsive genes necessary for glucose and lipid metabolism; improves sensitivity to insulin in skeletal and adipose tissue
- **Indications:** Type 2 diabetes as monotherapy or in combination with any other agent; Actos is also approved for use with insulin  
**Note:** Rosiglitazone is not listed on this chart due to restricted use by FDA. For more information, see: [http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm226976.htm](http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm226976.htm)

- **Usual Dosing:**
  - Initial Dose: Start at 1 mg/day, increase by 1-2 mg/week.
  - Usual maintenance dose: 5-15 mg/day.
  - Max. Effective Dose: 2550 mg/day.
  - A1C Lowering: Start at 1.0-2%.

- **Contraindications/Precautions:**
  - Use caution in people with sulfa allergies.
  - Use glyburide with caution due to greater risk of hypoglycemia.
  - Use caution with renal or hepatic insufficiency (glipizide or glimepiride preferred choices).
  - Immediate release and extended release glipizide doses are not equivalent.

- **Common Side Effects:**
  - Hypoglycemia
  - Weight gain

- **Lab Monitoring:**
  - Routine monitoring of HbA1c, fasting blood glucose, and fasting triglycerides.
## Oral Glucose-Lowering Agents

### Drug Class: Meglitinides
#### Actions:
- Augments glucose-induced insulin output; more rapid onset of effect and shorter duration of action than sulfonylureas

#### Indications:
- Type 2 diabetes as monotherapy or in combination with other oral agents;
- People with sulfa allergies;
- Hypoglycemia on low doses of sulfonylureas

#### Repaglinide (Prandin)
- **Initial Dose**:
  - Elderly: 0.5 mg with each meal
  - >80 kg: 1 mg with each meal
  - >90 kg: 2 mg with each meal
- **Dosage Adjustment Schedule**:
  - Double after 1-2 wks
- **Usual Effective Dose**:
  - A1C < 8%: 0.5 mg w/each meal
  - A1C > 8%: 1-2 mg w/each meal
- **Dosage Range**:
  - 0.5-4 mg before meals
- **Max. Effect**:
  - 16 mg/day
- **A1C Lowering Wt**:
  - 1-1.5%
- **Contraindications/Precautions**:
  - Hypoglycemia
  - Weight gain

#### Nateglinide (Starlix)
- **Dosage**:
  - 60-120 mg before meals
- **Dosage Adjustment Schedule**:
  - Increase by 60 mg at each meal after 1-2 wks
- **Usual Effective Dose**:
  - 60-120 mg before meals
- **Max. Effect**:
  - 120 mg TID
- **A1C Lowering Wt**:
  - 0.5-1%
- **Contraindications/Precautions**:
  - Hypoglycemia
  - Weight gain

### Drug Class: Alpha-glucosidase Inhibitors
#### Actions:
- Slows absorption of carbohydrates; reduces post-prandial blood glucose

#### Indications:
- Type 2 diabetes as monotherapy or in combination with sulfonylurea, metformin or insulin;
- Post-prandial hyperglycemia

#### Acarbose (Precose)
- **Dosage**:
  - 25 mg TID with meals
- **Dosage Adjustment Schedule**:
  - Double current dosing regimen after 4-8 wks
- **Usual Effective Dose**:
  - 25-100 mg TID with meals
- **Wt. < 60 kg = 50 mg TID**
  - Wt. > 60 kg = 100 mg TID
- **Max. Effect**:
  - 0.5-1%
- **Contraindications/Precautions**:
  - Chronic intestinal disease
  - Renal dysfunction (creatinine > 2.0) (Glyset)
  - Cirrhosis (Precose)

#### Miglitol (Glyset)
- **Dosage**:
  - 50-100 mg TID with meals
- **Dosage Adjustment Schedule**:
  - Double current dosing regimen after 8-12 wks
- **Usual Effective Dose**:
  - 100 mg TID
- **Max. Effect**:
  - 0.5-1%
- **Contraindications/Precautions**:
  - Chronic intestinal disease
  - Renal dysfunction (creatinine > 2.0) (Glyset)
  - Cirrhosis (Precose)

### Drug Class: Dipeptidyl Peptidase 4 Inhibitors (DPP-IV)
#### Actions:
- Increases insulin release and decreases glucagon levels in the circulation in a glucose-dependent manner

#### Indications:
- Type 2 diabetes as monotherapy or in combination with sulfonylureas, metformin, or TZDs

#### Sitagliptin (Januvia)
- **Dosage**:
  - 100 mg daily
- **Dosage Adjustment Schedule**:
  - If making adjustments, wait 4-6 wks
- **Usual Effective Dose**:
  - 100 mg daily
- **Max. Effect**:
  - 0.6-0.8%
- **Contraindications/Precautions**:
  - If used with sulfonylurea or meglintinide, consider lowering dose of sulfonylurea to prevent hypoglycemia

#### Saxagliptin (Onglyza)
- **Dosage**:
  - 2.5 or 5 mg daily
- **Dosage Adjustment Schedule**:
  - Impairment of renal function or with a CYP3A4 inhibitor
- **Usual Effective Dose**:
  - 2.5 mg daily
  - 5 mg daily with or without food
- **Max. Effect**:
  - 0.4%

#### Linagliptin (Tradjenta)
- **Dosage**:
  - 5 mg daily
- **Dosage Adjustment Schedule**:
  - No dosing adjustment needed
- **Usual Effective Dose**:
  - 5 mg daily
- **Max. Effect**:
  - 0.6%

### Based on expert opinion.

### Common Side Effects
- Hypoglycemia
- Weight gain

### Lab Monitoring
- Serum Transaminases q 3 mo. X 1 year

### Contraindications/Precautions
- Strong P-glycoprotein/CYP 3A4 inducer

### RX
- A1C
- AIC
- CrCl
- Hct
- Hgb
- Hgb A1C
- LDL
- Lipid Panel
- Lipids
- Monounsaturated
- Polyunsaturated
- Saturated
- Triglycerides
- Total Cholesterol
- Wt

### Initial Dose
- Elderly
- >80 kg
- >90 kg

### Dose Adjustment
- Double after 1-2 wks
- Increase by 60 mg at each meal after 1-2 wks
- Double current dosing regimen after 8-12 wks

### Usual Effective Dose
- 0.5-1%
- 0.4%
- 0.6-0.8%
- 0.5-0.8%
- 0.4%

### Max. Effect
- 16 mg/day
- 0.5-1%
- 0.5-1%
- 0.5-1%
- 0.4%

### A1C Lowering Wt
- 1-1.5%
- 1-1.5%
- 0.5-0.8%
- 0.5-0.8%
- 0.4%

### Contraindications/Precautions
- Strong P-glycoprotein/CYP 3A4 inducer
- Hypoglycemia
- Weight gain

### Common Side Effects
- Flatulence
- Diarrhea
- Abdominal pain
- Headache
- Nasopharyngitis
- Upper respiratory tract infection

### Lab Monitoring
- Serum Transaminases q 3 mo. X 1 year

### Contraindications/Precautions
- Strong P-glycoprotein/CYP 3A4 inducer
- Hypoglycemia
- Weight gain

### Common Side Effects
- Hypoglycemia
- Weight gain

### Lab Monitoring
- Serum Transaminases q 3 mo. X 1 year

### Contraindications/Precautions
- Strong P-glycoprotein/CYP 3A4 inducer
- Hypoglycemia
- Weight gain

### Common Side Effects
- Hypoglycemia
- Weight gain

### Lab Monitoring
- Serum Transaminases q 3 mo. X 1 year

### Contraindications/Precautions
- Strong P-glycoprotein/CYP 3A4 inducer
- Hypoglycemia
- Weight gain
### INJECTABLE NON-INSULIN GLUCOSE-LOWERING AGENTS

<table>
<thead>
<tr>
<th>RX</th>
<th>Avail. Dosage</th>
<th>Initial Dose</th>
<th>Dose Adjustment Schedule</th>
<th>Max. Dose</th>
<th>Meal Timing</th>
<th>A1C Lowering</th>
<th>Wt</th>
<th>Renal Dosing</th>
<th>Hepatic Dosing</th>
<th>Lab Monitoring</th>
<th>Stability</th>
<th>Common Side Effects</th>
<th>Contraindications/Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liraglutide (Victoza)</strong></td>
<td>0.6 mg/mL 3 mL prefilled syringes</td>
<td>Type 2 DM: 0.6 mg subcutaneously once a day for 1 week*</td>
<td>Type 2 DM: Titrate to 1.2 mg after 1 week then may increase to 1.8 mg if 1 mg reveals no significant changes</td>
<td>1.8 mg one time daily</td>
<td>Independent of meals</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>No dosage adjustment necessary, caution w/ renal impairment N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Exenatide extended-release (Bydureon)</strong></td>
<td>2 mg single dose trays</td>
<td>Type 2 DM: 0 mg 5 mcg BID at any time within the 60-minute period before the 2 main meals of the day approximately 6 hours or more apart</td>
<td>Type 2 DM: May be increased to 10 mcg BID after one month of therapy</td>
<td>10 mcg twice a day</td>
<td>Within 60 minute period before morning and evening meals</td>
<td>1%</td>
<td>-</td>
<td>Do not use if CrCl &lt; 30 ml/min</td>
<td>N/A</td>
<td>Monitor INR for patients on warfarin</td>
<td>Store unused pen in refrigerator. After first use, may be kept at room temp (up to 77° F) for up to 30 days.</td>
<td>• nausea</td>
<td>• other GI disturbance</td>
</tr>
<tr>
<td><strong>Exenatide (Byetta)</strong></td>
<td>5 mcg per dose, 60 doses, 2.4 mL prefilled pen</td>
<td>Type 2 DM: 5 mcg BID at any time within the 60-minute period before the 2 main meals of the day approximately 6 hours or more apart</td>
<td>Type 2 DM: May be increased to 10 mcg BID after one month of therapy</td>
<td>10 mcg twice a day</td>
<td>Within 60 minute period before morning and evening meals</td>
<td>1%</td>
<td>-</td>
<td>Do not use if CrCl &lt; 30 ml/min</td>
<td>N/A</td>
<td>Monitor INR for patients on warfarin</td>
<td>Store unused pen in refrigerator. After first use, may be kept at room temp (up to 77° F) for up to 30 days.</td>
<td>• nausea</td>
<td>• other GI disturbance</td>
</tr>
<tr>
<td><strong>Pramlintide (Symlin)</strong></td>
<td>0.6 mg/mL 5 mL vials 1 mg/mL prefilled pens</td>
<td>Type 1 DM: 15 mcg immediately prior to major meals</td>
<td>Type 2 DM: 60 mcg immediately prior to major meals</td>
<td>120 mcg before major meals</td>
<td>Immediately before meals containing ≥ 250 kcal or ≥ 30 grams of carbohydrate</td>
<td>0.4 – 0.6% 0/-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Discard 28 days after first use. Open bottles may be refrigerated or kept at room temp.</td>
<td>• nausea</td>
</tr>
</tbody>
</table>

### Drug Class: GLP-1 agonist

### Actions:
- Stimulates the pancreas to increase insulin production and suppress glucagon secretion.
- Secondary actions include inhibition of gastric emptying and reduction of appetite and food intake.

### Indications:
- Type 2 diabetes as monotherapy or in combination with sulfonylureas, metformin, or TZDs.

- See individual drug insert recommendations for when it is appropriate to use with a specific type of basal insulin in adults with type 2 diabetes. Not approved for use with type 1 diabetes.

### Drug Class: Amylin analogue

### Actions:
- Slows gastric emptying, decreases glucagon secretion, centrally modulates appetite

- Note: A specialist should prescribe Symlin due to the complexity of dosing guidelines.

---

@ May be given at any time of day independent of meals

* Reduce prandial, rapid-acting or short-acting, insulin dosages, including fixed-mix insulins by 50%

* Dose titrations should occur only when no clinically significant nausea has been seen for 3 days
# INSULIN® THERAPY 2012

<table>
<thead>
<tr>
<th>CLASS</th>
<th>INSULIN TYPE</th>
<th>BRAND</th>
<th>FORMULATIONS</th>
<th>ONSET of Action</th>
<th>PEAK</th>
<th>DURATION of Action</th>
<th>BASAL/BOLUS</th>
<th>MEAL TIMING</th>
<th>APPEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Acting</td>
<td>Lispro</td>
<td>Humalog</td>
<td>Vials, cartridges</td>
<td>5-15 min</td>
<td>1-2 hours</td>
<td>2-4 hours</td>
<td>Bolus</td>
<td>15 min before or immediately after</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>Aspart</td>
<td>Novolog</td>
<td>Vials, cartridges</td>
<td>5-15 min</td>
<td>1-2 hours</td>
<td>2-4 hours</td>
<td>Bolus</td>
<td>5-10 min before</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glulisine</td>
<td>Apidra</td>
<td>Vials, pen</td>
<td>5-15 min</td>
<td>1-2 hours</td>
<td>2-4 hours</td>
<td>Bolus</td>
<td>Within 15 min before or within 20 min after starting a meal</td>
<td></td>
</tr>
<tr>
<td>Short Acting</td>
<td>Regular</td>
<td>Humulin R</td>
<td>Vials</td>
<td>30-60 min</td>
<td>2-4 hours</td>
<td>4-6 hours</td>
<td>Bolus</td>
<td>30 min before meals</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>Novolin R</td>
<td>Vials</td>
<td>30-60 min</td>
<td>2-4 hours</td>
<td>4-6 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NPH</td>
<td>Humulin N</td>
<td>Vials, cartridges</td>
<td>1-2 hours</td>
<td>4-8 hours</td>
<td>10-20 hours</td>
<td>Basal</td>
<td>Within 15 min before meals when mixed with rapid-acting insulin; 30 min before meals when mixed with regular insulin</td>
<td>Cloudy</td>
</tr>
<tr>
<td></td>
<td>Novolin N</td>
<td>Vials</td>
<td>1-2 hours</td>
<td>4-8 hours</td>
<td>10-20 hours</td>
<td></td>
<td>Basal</td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>Intermediate Acting</td>
<td>Detemir</td>
<td>Levemir</td>
<td>Vials, pen</td>
<td>1-2 hours</td>
<td>6-8 hours</td>
<td>Dose-dependent #</td>
<td>Basal</td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>Long Acting</td>
<td>Glargine</td>
<td>Lantus</td>
<td>Vials, pens</td>
<td>1-2 hours *</td>
<td>Flat</td>
<td>~24 hours *</td>
<td>Basal</td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>Detemir</td>
<td>Levemir</td>
<td>Vials, pen</td>
<td>1-2 hours</td>
<td>6-8 hours</td>
<td>Dose-dependent #</td>
<td>Basal</td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>Combination</td>
<td>70 NPH/30 Regular</td>
<td>Humulin 70/30</td>
<td>Vials, pens</td>
<td>30-60 min</td>
<td>10-16 hours</td>
<td></td>
<td>Approximately 30 min before meals</td>
<td>Cloudy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Novolin 70/30</td>
<td>Vials</td>
<td>30-60 min</td>
<td>10-16 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>70 aspart protamine/30 insulin aspart</td>
<td>Novolog Mix 70/30</td>
<td>Vials, cartridges, pens</td>
<td>10-20 min</td>
<td>10-20 hours</td>
<td>Within 15 min of meal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>75 lispro protamine/25 lispro</td>
<td>Humalog Mix 75/25</td>
<td>Vials, pens</td>
<td>Less than 30 min</td>
<td>15-18 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Strength U-500 Insulin</td>
<td>Regular</td>
<td>Humulin RU-500™</td>
<td>Vials</td>
<td>30 min</td>
<td>2-4 hours</td>
<td>6.5-8 hours</td>
<td>Basal/Bolus</td>
<td>Varies*</td>
<td>Clear</td>
</tr>
</tbody>
</table>

*The time course of action (onset of action, peak, duration of action) of any insulin may vary in different individuals or at different times in the same individual and can sometimes be dependent on dose. Time periods indicated should be considered a general guide only. Time may vary based on initial and subsequent doses. Consult with insulin package insert for additional information.

U-500 is a high-strength concentration of insulin (5-fold higher concentration than U-100 insulin) and typically used in people with very high insulin resistance; consultation with a diabetes specialist is recommended. See Section 4: Glycemic Control for more information related to U-500 use and precautions.

 pessoa may have a peak at 10-14 hours and the duration may be <24 hours.

Some people may have a peak at 10-14 hours and the duration may be <24 hours.

A 4-5 hour onset of action with initial dosing may occur based on expert opinion.

Some people may benefit from a BID dose schedule.

Available in Humulin®/ReliOn® insulin manufactured for Walmart by Eli Lilly.