# Comparison of Insulins and Injectable Diabetes Meds

**Rapid-acting**

|  | Insulin Lispro | Insulin Aspart |
|---|---|---|
| **Brand name** | Humalog | NovoRapid |
| **Onset** | 10 to 15 min | 10 to 15 min |
| **Peak** | 1 to 2 hours | 1 to 1.5 hours |
| **Duration** | 3.5 to 4.75 hours | 3 to 5 hours |
| **Administration** | Subcut,IM,IV | Subcut |
| **Meal timing** | Give 15 min before or immediately after meals (within 20 min of the start of the meal). | Give 5 to 10 min before meals or immediately after meals (up to 15 min). |
| **Appearance** | Clear | Clear |
| **Compatibility** | *Can mix with NPH (draw lispro into syringe first to prevent contamination by longer-acting insulin) and inject immediately after mixing<br>*Mixtures should not be administered IV<br>*Do not mix with other brands<br>*Do not mix with glargine | *Can mix with NPH (draw aspart into syringe first and inject immediately after mixing)<br>*No data on mixing with regular<br>*Do not mix with other brands<br>*Do not mix with glargine |
| **Stability of in-use products at room temp** | Vial,cartridge,pen: 28 days<br>External pump: 48 hours (undiluted only); however, some pump manufacturer may state up to 72 hours | Vial, cartridge: 4 weeks<br>External pump: 6 to 7 days |

**Short-acting (i.e. regular insulin)**

| **Brand name** | Humulin R | Novolin ge Toronto |
|---|---|---|
| **Onset** | 0.5 to 1 hour | 0.5 hour |
| **Peak** | 2 to 4 hours | 1.5 to 3.5 hours |
| **Duration** | 6 to 8 hours | 7 to 8 hours |
| **Administration** | Subcut, IM, IV | Subcut, IM, IV |
| **Meal timing** | Give subcut 30 to 45 minutes before meals. | Give subcut 30 to 45 minutes before meals. Should be followed by a meal no later than 30 minutes after injection. |
| **Appearance** | Clear | Clear |
| **Compatibility** | Can mix with Humulin N; mixture stable in syringe for 21 days in the refrigerator. Draw up regular insulin first.<br>Do not mix with other brands. | Can mix with NPH and store for up to 2 weeks in refrigerator with needle pointing upwards to prevent plugging. Draw up regular insulin first. |
| **Stability of in-use products at room temp** | Vial, cartridge: 28 days | Vial, cartridge: 4 weeks |

# Comparison of Insulins and Injectable Diabetes Meds

### Intermediate-acting

| Brand name | Humulin N | Novolin ge NPH |
|---|---|---|
| Onset | 1 to 3 hours | 1.5 hour |
| Peak | 5 to 8 hours | 4 to 12 hours |
| Duration | 18 to 24 hours | 24 hours |
| Administration | Subcut only, shake well | Subcut only, shake well |
| Meal timing | *Inject within 15 minutes before meals when NPH mixed with rapid-acting inulin<br>*Humulin N is usually injected 30 to 45 minutes before meals when mixed with regular insulin<br>*Novolin ge NPH: no recommendations with regards to meal timing. | |
| Appearance | Cloudy | Cloudy |
| Compatibility | Can mix with regular.<br>Can mix with lispro. | Can mix with regular.<br>Can mix with aspart. |
| Stability of in-use products at room temp | Vial, cartridge, pen: 28 days | Vial, cartridge: 4 weeks |

### Long-acting

| | Insulin glargine | Insulin Detemir |
|---|---|---|
| Brand name | Lantus | Levemir |
| Onset | 1.5 hours | 0.8 to 2 hours |
| Peak | No significant peak | 3 to 14 hours (relatively flat) |
| Duration | Up to 24 hours | Dose-dependent: 12 hours for 0.2 units/kg; 17 hours for 0.3 units/kg; 20 hours for 0.4 units/kg; up to 24 hours. Binds to albumin. |
| Administration | Once daily subcut at same time each day. | Give subcut once or twice daily.<br>Insulin naïve patients with type 2 diabetes on oral antidiabetes drugs: start with 10 units or 0.1 to 0.2 units/kg once daily. |
| Meal timing | Not applicable | Not applicable.<br>For patients on twice daily regimen, evening dose can be given at dinner or bedtime. |
| Appearance | Clear | Clear |
| Compatibility | Do not mix with other insulins or diluents. Mixing can change the time/action profile and cause precipitation. | Do not mix with other insulins or diluents. |
| Stability of in-use products at room temp | Vial, cartridge, pen: 28 days | Vial, cartridge: 42 days |

### Non-insulin injectable agents (non-formulary)

| | Exenatide | Liraglutide |
|---|---|---|
| Brand name | Byetta | Victoza |
| Therapeutic class | Incretin mimetic (glucagon-like peptide-1 receptor agonist) | |
| Administration | Subcutaneous injection | |
| Meal timing | Within 60 minutes before morning and evening meals, or the two main meals, at least 6 hours apart. | Once daily, any time of day, independent of meals. |
| Stability of in-use products at room temp | 30 days | 30 days |