

# INSULIN FOR SUBCUTANEOUS USE ONLY

DRUG CLASS	Insulin
AVAILABILITY	<p><b>BIPHASIC OR MIXED INSULIN:</b></p> <p><b>Humulin 30/70, Mixtard 30/70</b> or <b>50/50</b> contain neutral (short-acting) insulin and isophane (intermediate-acting) insulin.<sup>1</sup></p> <p><b>Humalog Mix 25</b> or <b>50</b> and <b>NovoMix 30</b> contain insulin lispro or aspart (ultra short-acting) and insulin lispro protamine or insulin aspart protamine (intermediate acting).<sup>1</sup></p> <p><b>Ryzodeg 70/30</b> contains insulin degludec (ultra-long-acting) and insulin aspart (ultra-short-acting).<sup>1</sup></p> <p><b>INTERMEDIATE-ACTING INSULIN:</b></p> <p><b>Humulin NPH</b> and <b>Protaphane</b> contain 100 units/mL of human isophane insulin.<sup>1</sup></p> <p><b>Hypurin Isophane porcine</b> insulin is available from Aspen Pharmacare through the Special Access Scheme.<sup>2</sup></p> <p><b>LONG-ACTING INSULINS:</b></p> <p><b>Optisulin</b> contains 100 units/mL of insulin glargine.<sup>1</sup></p> <p><b>Semglee</b> contains 100 units/mL of insulin glargine.<sup>1</sup></p> <p><b>Levemir</b> contains 100 units/mL of insulin detemir.<sup>1</sup></p> <p><b>Toujeo</b> contains <b>300 units/mL</b> of insulin glargine.<sup>1</sup></p> <p>Excipients include glycerol, metacresol, phenol, polysorbate-20, protamine, sodium chloride, sodium phosphate, zinc, hydrochloric acid and sodium hydroxide.<sup>1</sup> See the individual Product Information for details.</p> <p>Humulin 30/70 and NPH, Mixtard, Humalog Mix 25 and 50, Novomix and Protaphane are white suspensions.<sup>1</sup></p> <p>Ryzodeg, Optisulin, Levemir, Semglee and Toujeo are clear solutions.<sup>1</sup></p> <p>All preparations including multidose vials are for single patient use only.<sup>1</sup></p>
WARNING	<p>Different brands of insulin are not bioequivalent. Do not substitute brands.<sup>1</sup></p> <p>Not suitable for use in insulin infusion pumps.<sup>1</sup></p> <p>Medication errors have occurred when the wrong insulin has been given. Check the drug chart and product selection carefully.</p>
pH	<p>Toujeo: 4<sup>1</sup></p> <p>Others 6.9–7.8<sup>1,2</sup></p>
PREPARATION	<p>Suspensions: roll the vial or cartridge between the hands or gently shake to make an even white suspension.<sup>1</sup></p> <p>Store Optisulin and Toujeo at room temperature for at least 1 hour before the first use.<sup>1</sup></p> <p><b>Do not shake</b> Optisulin vials as this may cause frothing.<sup>1</sup></p>
STABILITY	<p>Store at 2 to 8 °C. Do not freeze. Once in use store at room temperature and discard any unused product after 28 days (21 days for Humulin cartridges).<sup>1</sup></p>
ADMINISTRATION	
<b>IM injection</b>	<p>Only in an emergency under medical guidance. Suitable for Mixtard, Humulin 30/70, Humulin NPH and Protaphane. Withdraw the dose from a vial or cartridge with a syringe. Do not use the pen.<sup>1</sup></p>
<b>SUBCUT injection</b>	<p>Preferred. Inject into the abdomen, upper arm, thigh or buttocks. Rotate the site of injection so that the same site is not used more than approximately once a month. Do not massage the injection site.<sup>1</sup></p>
<b>IV injection</b>	<p>Contraindicated<sup>1</sup></p>
<b>IV infusion</b>	<p>Contraindicated<sup>1</sup></p>

COMPATIBILITY	<b>Humulin NPH</b> and <b>Protaphane</b> may be mixed with short-acting human insulin. <sup>1</sup> Draw the short-acting insulin into the syringe first to prevent contamination of the vial with the longer-acting insulin. Use immediately after mixing. For subcutaneous injection only.
INCOMPATIBILITY	No information
SPECIAL NOTES	<p><b>Biphasic insulins:</b> the onset of action is 30 minutes to 1 hour for Humulin 30/70 and Mixtard and is 15 minutes for Humalog Mix 25 or 50, Novomix and Ryzodeg. The duration of action is 16 to 24 hours, and may be longer than 24 hours for Ryzodeg.<sup>1</sup></p> <p><b>Intermediate-acting insulins:</b> the onset of action is about 60 to 90 minutes. The duration of action is 16 to 24 hours.<sup>1</sup></p> <p><b>Long-acting insulins:</b> the onset of action of is 1-2 hours for Optisulin and Semglee, 3-4 hours for Levemir and 1-6 hours for Toujeo. The duration of action is up to 24 hours and up to 36 hours for Toujeo.</p> <p>Monitor blood glucose levels regularly.<sup>1</sup></p> <p>Biphasic and intermediate insulins can be given once or twice daily.<sup>1</sup></p> <p>Long-acting insulins are given once daily, Levemir can be given twice daily.</p>

## REFERENCES

1. Product information. Available from [www.tga.gov.au](http://www.tga.gov.au). Accessed 18/09/2020.
2. Aspen Medical Information. Porcine isophane insulin. [phone call]. St Leonards, NSW: Aspen Australia; 15/02/2019.
3. Duncan F. Insulin pH. [email]. Baulkham Hills, NSW: Novo Nordisk Pharmaceuticals; 19/02/2019.