

Converting from pre-mixed insulin to basal & rapid insulin

Premixed insulins (30/70, 50/50, Mix 25/30/50 etc) are still prescribed. While the concept of the use of a pre-mix over separate basal & rapid insulin shots is appealing (fewer doses & needles) in practice the use of pre-mixes results in less flexibility and a higher risk of hypoglycemia.

BCDiabetes recommends switching to separate basal insulin (insulin glargine U100) and rapid insulin (insulin glulisine). Unfortunately rapid insulin is still not a full BC Pharmacare benefit thus in cases of financial hardship regular insulin should be substituted over insulin glulisine.

Unfortunately insulin glargine U100 is still not a benefit when prescribed by Family physicians unless a special authority is requested (in which case NPH insulin is the default basal insulin). On a [“quick” request](#) from a Family Physician BCDiabetes will prescribe insulin glargine U100 - effectively providing a permanent special authorization.

Dose adjustment of basal and rapid insulin should be made with the use of [flash/CGM](#) (preferred) or multiple daily testing (see separate handouts on these topics).

Now look at the ratio of the pre-mixed insulin. The proportion of rapid insulin is always first. So with 30/70 it is 30% rapid, with 50/50 it is 50% rapid, with mix 25/30/50 it is 25%, 30% and 50% rapid insulin.

For basal insulin it is the converse. 30/70 implies 70% basal, 50/50 implies 50% basal and mix 25/30/50 implies 75%, 70% and 50% basal.

1. Calculate the total daily dose (TDD) of premixed insulin

example 30/70 insulin with 40 U before breakfast & 30 U before dinner = 70 Units total

2. Calculate the dose of rapid insulin

Using the above example, based on a total dose of 70 units and assuming 30/70 pre-mix, the dose of rapid = $0.3 * 70 = 21$ units (rounded down to 20 U). The 20 units of rapid insulin should now be given across the meals eaten that day, adjusted based on carb counting and pre & post-meals targets set by your physician.

3. Calculate the dose of basal insulin as 70% of the total dose

Using the above example, based on a total dose of 70 units and assuming 30/70 pre-mix, the dose of basal = $0.7 * 70 = 49$ units (rounded up to 50 U). The 50 units of basal insulin (insulin glargine U100) should now be given as a single daily dose (preferably before breakfast, otherwise before bed) and titrated versus fasting sugar to target set by your physician. If NPH insulin is used by default it should be given as two equally divided doses before breakfast and bed - in this case 25 U before breakfast and 25 units before bed.