

ACCOUNTING FOR UNUSED INSULIN

Rapid-acting insulin continues to lower blood glucose levels for 3–5 hours after it is injected. It is important to account for the activity of previous injections or boluses when deciding how much to give in a correction dose to lower high blood glucose after a meal. In most cases, a person in whom rapid-acting insulin analogs last about 4 hours can expect the insulin’s activity to decline as follows:

TIME SINCE INSULIN WAS GIVEN	INSULIN “USED UP”	INSULIN REMAINING
½ hour	10%	90%
1 hour	30%	70%
1½ hours	50%	50%
2 hours	70%	30%
2½ hours	80%	20%
3 hours	90%	10%
3½ hours	95%	5%
4 hours	100%	0%

For example, if you gave yourself 5 units for a 4 PM snack then checked your blood glucose at 6 PM, you’d still have 30% of your insulin remaining. $5 \text{ units} \times 30\% = 1.5 \text{ units}$. This amount should be deducted from any dose that you are about to give yourself.

Although insulin does not truly stop working in a linear fashion, for the sake of simplicity, some people in whom rapid-acting insulin remains active for 4 hours choose to assume that one-fourth of their insulin is “used up” each hour.

TIME SINCE INSULIN WAS GIVEN	INSULIN “USED UP”	INSULIN REMAINING
1 hour	25%	75%
2 hours	50%	50%
3 hours	75%	25%
4 hours	100%	0%

If you find that rapid-acting insulin lasts shorter or longer than 4 hours for you, you would need to adjust these tables to fit your situation. For example, a person who finds that rapid-acting insulin lasts 3 hours could assume that 33% is used up per hour.