

Mealtime Insulin Dosing for Type 1 Diabetes

ICR covers balanced meals NOT just carbs

Insulin to carbohydrate ratio (ICR) covers the insulin requirement for meals containing balanced amounts carbohydrate, protein, and fat¹.

1. Count carbs (g) within 10g accuracy^{2,3} & use ICR
2. Normal bolus 20 minutes before eating¹⁴

What are balanced meals?

40-55% of total energy from carbohydrate, 20-40% from fat & 10-20% from protein^{22,23}.

Scrambled egg on toast: 20-30g carbs, 5-15g fat, 5-15g protein
Cheese sandwich & yogurt: 40-55g carbs, 10-25g fat, 10-25g protein
Chicken, mash potatoes & veg: 60-75g carbs, 15-35g fat, 15-35g protein

Different meals

High carb, low fat & protein

Carbs more than 55%, fat & protein less than 6g each¹
Fruit, cereal, biscuits & bars, toast & jam, rice crackers

1. Count carbs (g) & use ICR
2. Consider reducing insulin by 20%
3. Must be normal bolus 20 minutes before eating²⁴

High fat with at least 30g carbs

Fat more than 40g^{4,5,6,7,8}
Pizza, takeaways, creamy curry, Sunday roast & pudding, English breakfast

1. Count carbs (g) & use ICR
2. Increase insulin by 20-50%*
3. Pump: 50% before, 50% over 120 mins⁵, MDI: 50% before, 50% in 60 mins⁶
4. KISS method to adjust extra insulin & bolus split²¹

*may need to increase by 17-124%^{5,6,7,8}

Low carb

Carbs less than 15g
Meat & veg, eggs & mushrooms, cheese & salad

1. Count carbs (g) & use ICR
2. Count protein (g) ÷ 4 & use ICR*
3. Add calculated insulin from 1 & 2
4. Pump: Extended 1hr, MDI: Bolus after meal estimated^{9,10}

Stopping after meal glucose spikes

Nutrition tactics

Three balanced meals with minimal snacks¹²

Do not follow:
"Eat what you like, when you like, just give insulin"¹³

Low glycaemic Index carb choices¹¹

Insulin tactics

20 mins¹⁴ before meal or [DynamicGM](#)²⁰
Meal insulin into abdomen or upper arm¹⁵
[Super bolus if on a pump](#)¹⁶
Split large bolus insulin doses¹⁷

Activity tactics

60 mins moderate activity a day¹⁸
[10 mins moderate activity after main meals](#)¹⁹
[DynamicGM short-burst of exercise if spiking 1-2 hours after eating](#)²⁰