

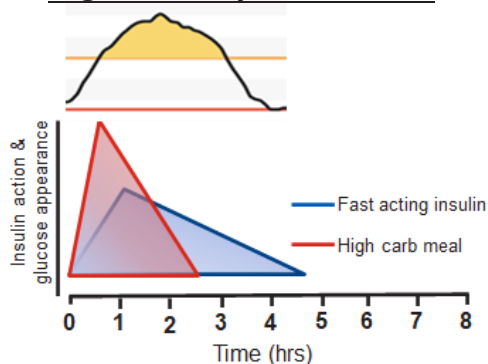
Mealtime Insulin for Type 1 Diabetes

What does the Insulin to Carb Ratio (ICR) actually cover?

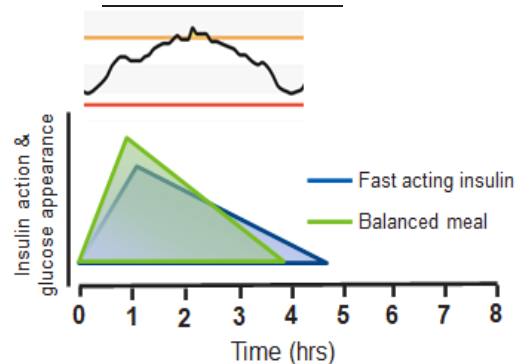
Glucose from digested carbohydrate and the small amount of insulin required to use fat and protein effectively.

Fast acting mealtime insulin **peaks after 60-90 minutes and lasts 4-6 hours**

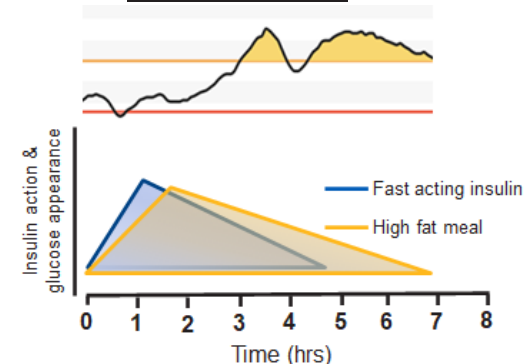
High carbohydrate meals



Balanced meals



High fat meals



Glucose appearance peaks at 30-60 mins, lasts 3-4 hours

Carbs more than 55%

Breakfasts: Cereal with light milk, toast and jam, fruit bread

Meals: Jacket potato & beans, super noodles, waffles & hoops

Snacks: Cereal bars, biscuits, rice crackers, fat free yoghurt

How to better match insulin to a high carbohydrate meal?

1. Count carbs (g) within 10g accuracy & use ICR
2. Choose lower glycaemic index carb choices
3. Must be normal bolus 20 minutes before eating

Glucose appearance peaks at 60-90 mins, lasts 4-5 hours

40-55% carbs, 20-40% fat & 10-20% protein

Breakfasts: Porridge with semi or full milk, egg on toast

Meals: Meat & potatoes & veg, jacket potato & cheese & salad

Snacks: Whole fruit with nuts, nut butter on toast, whole yoghurt

How to better match insulin to a balanced meal?

1. Count carbs (g) within 10g accuracy & use ICR
2. Normal bolus 20 minutes before eating

Want simple changes for balanced meals?

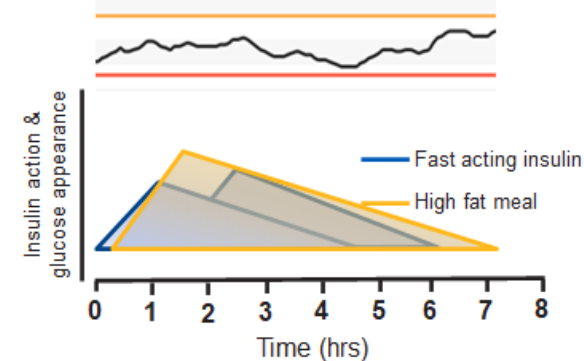
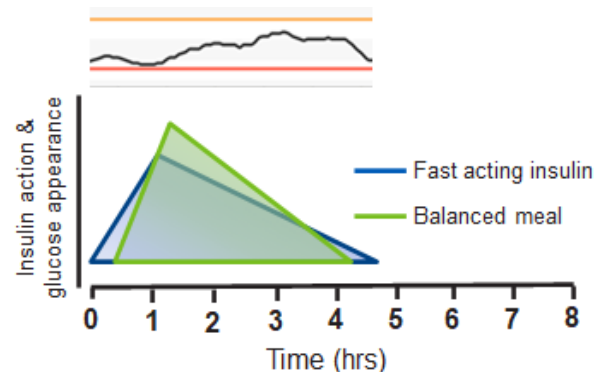
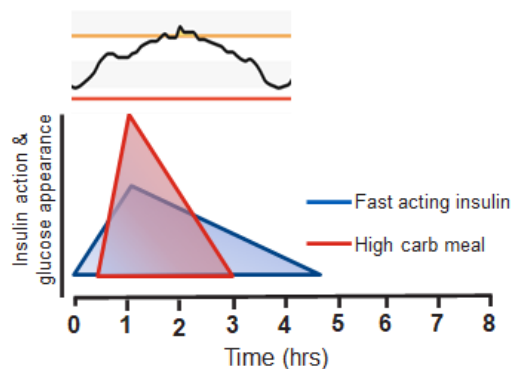
Glucose appearance peaks at 120-180 mins, lasts 6-9 hours

Fat more than 40g with at least 30g carbs

Pizza, takeaways, creamy curry, Sunday roast, English fry-up

How to better match insulin to a high fat meal?

1. Count carbs (g) within 10g accuracy & use ICR
2. Increase insulin by 25% (may need 17-124% extra)
3. Pump: 50% 20 minutes before, 50% over 120 mins
MDI: 50% 20 minutes before, 50% in 60 mins
4. KISS method to adjust extra insulin and how to split



Stopping after meal glucose spikes

Nutrition tactics

Three balanced whole food meals with minimal snacks

Do not follow:

“Eat what you like, when you like, just give insulin”

Low glycaemic index carb choices

Insulin tactics

Insulin 20 mins before meal

Meal insulin into abdomen or upper arms, not in legs or buttocks

Avoid lumpy injection sites and rotate injection/cannula sites

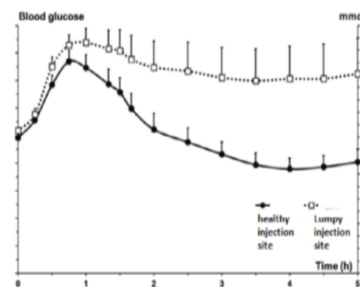
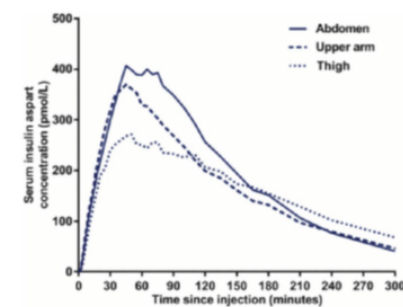
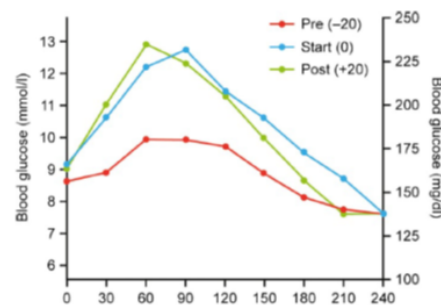
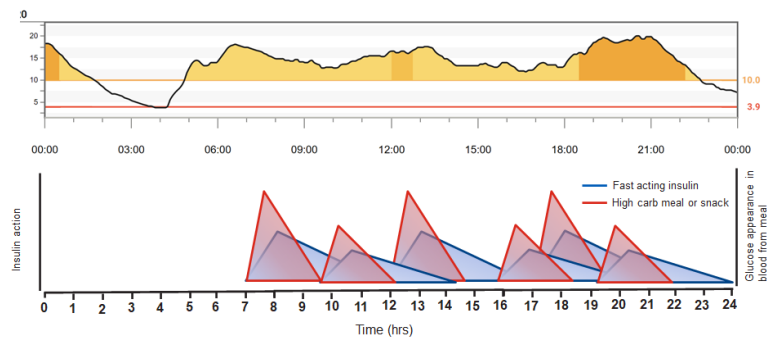
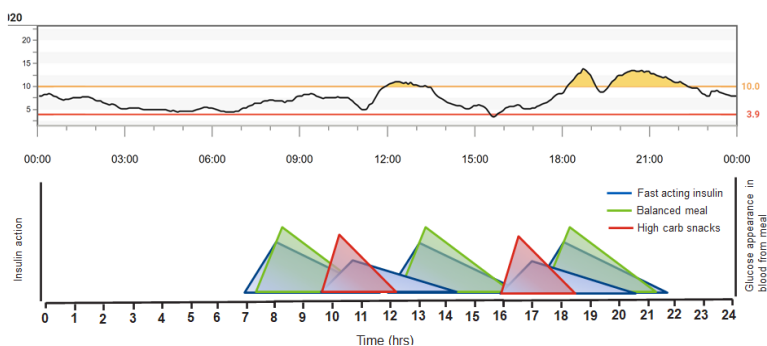
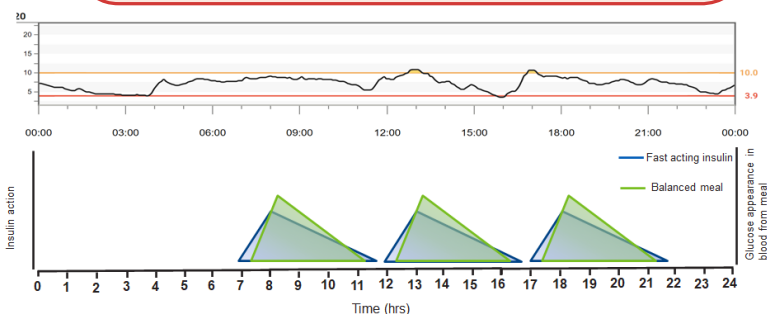
Activity tactics

60 mins moderate activity a day, try three 20 minutes:

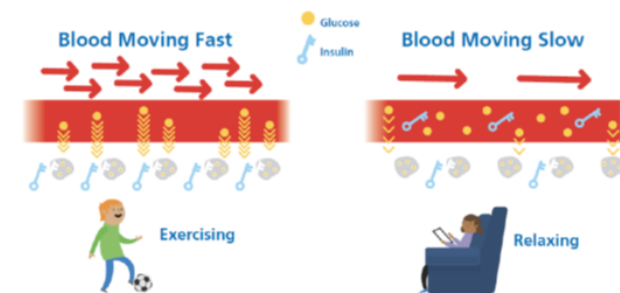
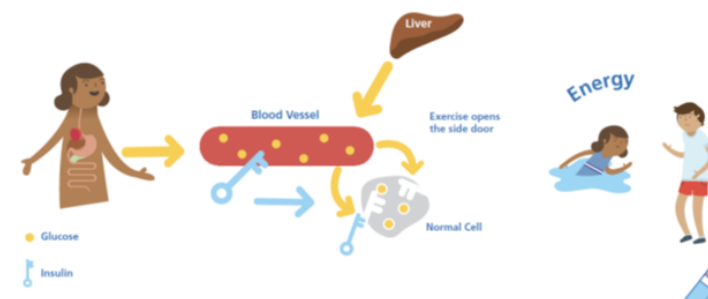
"Opens a side door to muscle cells to let more glucose in"

10 mins of moderate activity after meals:

"Gets insulin to the muscles faster to speed up its action"



Low to moderate intensity activity:
walking, playing in the playground, jogging, shopping



Keep it simple, do 10 minutes of moderate activity after each meal to stop glucose spikes!