

Food

KRKT:TIDE · KRKT's Type 1 Diabetes Education

In an emergency. Someone with type 1 who is confused, very drowsy, can't swallow or is unconscious: call 911.

Education, not medical advice. Every dose, ratio and target belongs with your own diabetes team.

Food

What each kind of food does to blood sugar, why pizza is different from bread, and how to help without policing anyone's plate.

This section is for people who have just been diagnosed with type 1 diabetes, and for the people around them: parents, partners, friends, hosts and caretakers. Nobody here is going to tell you what you may eat. That is the expectation most people arrive with, so it is worth clearing up first.

There is no diabetic diet. No forbidden list, no special aisle. People with type 1 can eat what everyone else eats, birthday cake included, given the right insulin at roughly the right time.

What changes isn't *what* goes on the plate. It's that somebody now has to estimate what's in it, and do the job a pancreas used to do silently, three or four times a day, forever.

The pages below explain what each part of a meal does to blood sugar, why a rich meal can push numbers up hours later, how to read a Canadian Nutrition Facts table, what to keep on hand for a low, and how family and hosts can help without hovering.

This is education, not medical advice. Doses, ratios and targets belong with your diabetes team and dietitian.

Sources: Diabetes Canada · Diabète Québec · ISPAD 2022 nutrition guidelines

What each part of a meal does to blood sugar

Carbohydrate, protein, fat and fibre each act on blood sugar differently. Where carbs hide, and which foods need no insulin dose.

There is no list of banned foods in type 1 diabetes. What helps instead is a simple picture of what each part of a meal does to blood sugar, and how fast. This page sets out that picture, shows where carbohydrate tends to hide, and explains which foods need no insulin dose at all, along with the catch that comes with them.

Four parts of a meal, fastest to slowest

Think of a plate as four ingredients, lined up from fastest to slowest. That ordering is the mental model everything else in this section builds on.

Carbohydrate: fast and large

Up within 15 to 30 minutes, peaking around an hour or two. **This is the one you dose for.** Total carbohydrate has the biggest effect on blood sugar of anything on the plate.

Protein: slow and modest. Protein causes a meaningful rise only when there's a lot of it, and that rise arrives roughly three to five hours later. A normal portion alongside carbs needs no separate dose.

Fat: no direct rise, but a long shadow. Fat doesn't raise blood sugar directly. It slows the whole meal down and makes insulin work less well for hours. That is why the late rise after a rich meal catches people out; it has its own page.

Fibre: counted, then subtracted. Fibre is counted as carbohydrate on the label, but your body doesn't absorb it, so you subtract it back out. It also slows everything around it down, which flattens the peak.

Where the carbohydrate actually hides

Bread and sugar are obvious. These are the ones that catch newly diagnosed people and well-meaning hosts. Ask a host which of these five are in tonight's meal: usually it's three, and usually none of them were mentioned.

- **Starchy vegetables.** Potatoes, corn and green peas are carbohydrate, not free vegetables. "It's a vegetable" is the single most common counting error.
- **Milk and yoghurt.** Dairy carries natural sugar. A glass of milk is a dose, even unsweetened and even when nothing tastes sweet.
- **Beans and lentils.** Filed mentally as protein, counted as carbohydrate. They're high in fibre, so they come on slowly, but they come.
- **Juice and smoothies.** Fruit with the fibre removed and the speed turned up. Excellent for treating a low, awkward as a drink with dinner.
- **Sauces and dressings.** Barbecue sauce, ketchup, teriyaki, sweet chilli and most jarred pasta sauces are sugar-heavy. Nobody counts the glaze.

Foods that need no dose at all

Some foods carry essentially no carbohydrate:

- meat, poultry, fish and eggs
- shellfish
- most cheeses
- tofu
- fats and oils

- herbs, spices and condiments
- tea, coffee and diet drinks
- clear broths
- plain unsweetened gelatin

Salad greens and most non-starchy vegetables are close enough to free that they're treated that way.

Diet drinks belong on this list, which also means they are useless for treating a low. That point comes up again on the page about lows, alcohol and sick days.

The catch worth understanding

"Free" means free of a carbohydrate dose. It does not mean nothing happens. A big plate of steak and cheese carries no carbohydrate at all, and can still push blood sugar up three to five hours later, through the protein and fat. Zero carbs on the label does not mean zero effect on the body.

This apparent contradiction confuses newly diagnosed people constantly. If a carb-free dinner is followed by a higher number later in the evening, nothing was counted wrong: the protein and fat were simply doing their slow work. Bring patterns like this to your diabetes team or dietitian rather than adjusting on your own.

Sources: Diabetes Canada clinical practice guidelines · ISPAD 2022 nutrition guidelines · Diabetes UK · Diabète Québec

Insulin timing and the late rise after rich meals

Why dosing a little before eating helps, why pizza behaves differently from bread, and what care teams do about the delayed rise.

When the insulin goes in matters as much as how much. This page explains why a dose given a little before a meal tends to work better, why a high-fat meal like pizza can push blood sugar up hours after eating, and what diabetes teams may suggest about that late rise, so the words are familiar when you hear them.

Dosing ahead of the meal

Insulin injected under the skin takes time to start working. Food does not wait for it. Giving the dose a little ahead of the meal lets the two line up.

Which insulin you have decides the timing, so there is no universal number:

- **Rapid-acting insulin.** Diabetes Canada says within 15 minutes of eating. Studies of dosing 15 to 20 minutes ahead show a lower peak afterwards, most noticeably at breakfast.
- **Faster-acting insulin.** Designed to go in right at the meal, zero to two minutes before, and can be given up to 20 minutes after if needed.

Many parents assume that dosing before the meal will cause more lows. In the studies, pre-meal dosing did not increase lows. The exception is genuine uncertainty about whether the food will arrive or be eaten.

When not to dose early

A restaurant that hasn't served yet. A small child who may not finish. Anyone who might not eat what was planned. Insulin already working with no food arriving is a low.

Why pizza behaves differently from bread

This is the single most useful idea for someone newly diagnosed, because it explains something they have probably already experienced, and blamed themselves for.

40%

more insulin was needed for a high-fat dinner than a low-fat one carrying exactly the same carbohydrate, in a landmark study

And even with that extra insulin, blood sugar still ran higher.

Pizza, poutine, creamy pasta, curry and naan, fish and chips, a cheese-heavy burger: fat and protein slow the meal down, so the early rise is smaller than expected, and then it arrives late. Roughly **three to six hours after eating**, sometimes longer. Which usually means overnight.

The classic pattern is a perfect number two hours after dinner and a high one at three in the morning. Nothing was done wrong. The meal just hadn't finished yet.

What people do about the late rise

These are approaches your team may discuss with you. They are described here so the terms are familiar when someone says them, not as something to try on your own.

On a pump. An extended or dual-wave bolus splits the dose. A common starting point is 60% right away and 40% stretched over about two and a half hours.

On injections. The usual dose at the meal, and a smaller second dose a few hours later. The evidence here is thinner, so it gets worked out person by person.

A starting point. ISPAD suggests around 20% extra insulin for a high-fat, high-protein meal, then adjusting from what actually happens.

Why not to improvise

A second dose given on a wrong guess can lead to a hypo during the night. This is the highest-risk adjustment in everything covered in this section.

The right move is to bring the pattern to your team, not the fix. Showing them three nights of data after similar meals gives them something to work with; experimenting alone does not.

Sources: Diabetes Canada · Diabète Québec · ISPAD 2022 nutrition guidelines · Wolpert et al., Diabetes Care 2013 · Cambridge University Hospitals NHS fat and protein bolusing guidance

Glycemic index and fibre

What the glycemic index can and can't tell you, where diabetes bodies disagree about it, and the two jobs fibre does at once.

The glycemic index (GI) and fibre both change the *shape* of the rise after a meal rather than its size. They are second-order adjustments: count carbohydrate first, get the timing right, then use GI and fibre to fine-tune. This page covers what GI is, where the evidence is contested, and why fibre matters twice.

Glycemic index: useful, oversold, worth knowing

The glycemic index is a score for how fast a carbohydrate food raises blood sugar. Low is 55 or under, high is 70 or over. It describes the *shape* of the rise, never the *size*; the size is still set by the carbohydrate count.

Where the bodies disagree

Diabetes organizations genuinely disagree on how much GI matters, and you will meet both positions online, so here are both.

- **What supports it.** Diabetes Canada rates low-GI eating as helping glycemic management, and links it to fewer hypoglycemic episodes in type 1 over periods of six months to a year.

- **What argues against.** The American Diabetes Association points to systematic reviews finding no significant effect on A1C and mixed results on fasting glucose.

What moves a food's GI

The same food can behave differently depending on how it's prepared and served:

- pasta cooked al dente
- starches cooled after cooking
- ripeness
- above all, what it's eaten with: vegetables, protein and fat alongside flatten the response

The honest version

Diabetes Canada's own patient page puts it best: some high-GI foods won't affect you much, and some low-GI ones will. Your own numbers outrank any table.

Fibre does two jobs at once

30–50 g

of fibre a day is what Diabetes Canada suggests, with a third or more of it (10 to 20 g) from viscous soluble fibre: oats, barley, psyllium, beans, apples

Other bodies set this differently. Treat it as a direction, not a quota.

It slows the rise

Fibre blunts how fast the rest of the meal arrives, which takes the sharp edge off the peak.

And it comes off the count

On a Canadian label, fibre sits inside the carbohydrate total. Since your body doesn't absorb it, you subtract it back out before dosing. The page on [reading a Nutrition Facts table](#) walks through this.

Why white bread is harder than brown

Same slice size, less fibre, faster arrival, more carbohydrate to cover. The difference is real but modest.

Increase fibre gradually

A sudden jump in fibre is uncomfortable, and people tend to abandon the change within a week. Adding it a little at a time makes it far more likely to stick.

Sources: Diabetes Canada clinical practice guidelines, nutrition therapy · American Diabetes Association

Reading a Canadian Nutrition Facts table

One Canadian rule makes labels simple: Carbohydrate is already the total. How to handle sugars, fibre, sugar alcohols and serving size.

A Nutrition Facts table is the most reliable information you'll get about packaged food, and it's worth more than any reassurance that "there's barely any sugar in it." This page explains how to read a Canadian table for carbohydrate counting: what to count, what to subtract, and the one mistake that doubles a dose.

One rule makes everything else simple

On a Canadian label, "**Carbohydrate**" is already the total. Sugars, starch, fibre and sugar alcohols are all inside that number. Everything below follows from that.

Never add the sugars line

Sugars are already counted inside Carbohydrate. Adding them on top is the most common label mistake, and it doubles the dose.

Start at the serving size

Every number in the table is per serving, not per package. The serving listed is often half of what anyone actually eats. Before doing any arithmetic, compare the serving on the label with the amount on the plate, and scale up or down.

Subtract fibre in full

Fibre is inside the carbohydrate total, and your body doesn't absorb it, so it comes straight back off. Fibre also slows the rest of the meal down; more on that in [glycemic index and fibre](#).

Sugar alcohols: about half

Maltitol, sorbitol, xylitol and erythritol are partly absorbed, and unpredictably. Diabète Québec suggests subtracting half, then watching what your own body does.

Where the guidance splits

Guidance on sugar alcohols is genuinely divided between subtracting all of them and subtracting half. Half is the more conservative choice, and it matches the Québec source. Your dietitian can help you decide what works for you.

Sugar alcohols also turn up in foods marketed as "no sugar added," which is not the same as carb-free. In quantity they can upset stomachs, too.

Sweeteners that never enter the count

Aspartame, stevia and sucralose carry no carbohydrate and never enter the count.

Putting it together

For a packaged food, the working sequence is:

1. Check the serving size and compare it with what you'll actually eat.
2. Take the Carbohydrate number (the total).
3. Subtract all of the fibre.
4. If there are sugar alcohols, subtract about half of them.
5. Ignore the sugars line: it is already inside the total.

The result is the carbohydrate you'd use with the insulin-to-carb ratio your diabetes team gave you. If a host or relative is cooking for someone with type 1, keeping the package or the recipe is one of the most useful things they can do.

Sources: Canadian Food Inspection Agency · Diabète Québec · Diabetes Canada

Lows, alcohol and sick days: the food side

What to eat to treat a low, why alcohol causes delayed lows, and how to get carbohydrate and fluids in when you're too sick to eat.

Three situations turn food into a safety question rather than a menu question: treating a low, drinking alcohol, and being too sick to eat. If you're a parent, partner or caretaker, the sections on lows and sick days are the two most worth saving on your phone.

Treating a low: the one piece of food knowledge everyone needs

Below 3.9 mmol/L, Diabetes Canada says to take 15 g of fast-acting carbohydrate, preferably glucose or sucrose as tablets or a solution, which work better than juice or gels.

Below 3.9 mmol/L: take 15 g of fast sugar

15 grams is any one of:

- 4 glucose tablets
- 15 mL (3 tsp) sugar in water, or 3 packets
- 5 sugar cubes
- 150 mL juice or regular soft drink
- 6 Life Savers
- 15 mL (1 tbsp) honey

Then wait 15 minutes, sitting down. Check again. Still under 3.9? Do it again.

Once you're back up, have the meal that was due. If it's more than an hour away, take a snack with 15 g of carbohydrate plus some protein.

In practice, many people need more than 15 g; one Canadian study found an average of 32 g. Start at 15, recheck, and set your own amount with your diabetes team.

What does not work

- **Chocolate, biscuits, cake.** The fat slows the sugar down.
- **Milk,** for the same reason.
- **Diet or zero drinks.** There is no sugar in them at all.
- **Glucose gel** is slow; tablets beat it.

The diet drink mix-up is the one that catches hosts: both cans sit in the same fridge and look almost identical. Check the label before handing one over.

Alcohol is a food question, not just a party question

Your liver has two jobs here: clearing alcohol, and releasing glucose when you're running low. It will not do the second while it's busy with the first.

So the low doesn't tend to come while you're drinking. It comes hours later, often in your sleep. And glucagon works poorly after drinking, because it works by asking the liver to do exactly the thing alcohol is blocking.

Sugary mixers add a twist: they push blood sugar up first, then the alcohol pulls it down later. Up, then hard down.

If there's drinking

- Eat carbohydrate with it, not instead of dinner
- Never skip the long-acting insulin
- Have something to eat before bed
- Set an alarm, and do an actual check overnight
- Tell whoever you're staying with

A word for friends and caretakers: being drunk and being low can look identical from the outside. At a party, the person slurring may not be drunk. Check before assuming.

Eating when you're too sick to eat

The insulin still goes in

Illness pushes blood sugar up even with no food. Skipping insulin because you haven't eaten raises the risk of diabetic ketoacidosis (DKA).

Carbs in liquid form. If solid food won't stay down, carbohydrate can come as regular soft drink, juice, sports drink, ice pops or sweetened tea, sipped steadily rather than gulped.

Salt and water too. Broth, bouillon or an oral rehydration solution. Dehydration concentrates ketones and makes everything worse, faster.

Check ketones, whatever the glucose reads.

Call for help rather than managing at home if

- ketones are moderate or large
- vomiting won't stop

Have a written sick-day plan from your team before you need it. Judgement suffers when you're ill, and the person reading the plan may well be a parent or partner.

Sources: Diabetes Canada

Celiac disease, thyroid and going gluten-free

Why celiac and thyroid screening are routine in type 1, and why a gluten-free diet can make blood sugar bumpier before it settles.

Type 1 diabetes is an autoimmune condition, and autoimmune conditions tend to travel together. This page explains why celiac disease and thyroid disease are screened for as part of routine follow-up, and what to expect if celiac is confirmed and a gluten-free diet begins.

Autoimmune conditions travel together

~6%

of people with type 1 also have celiac disease; studies range from about 2% to 16%, against under 1% in the general population

17 to 30%

is the rough share affected by autoimmune thyroid disease, which is even more common

Screening for celiac and thyroid disease is routine follow-up, not a sign that something has gone wrong. Families often read a repeat blood test as suspicion that something is off; it isn't. It's scheduled, and it's normal.

Guidelines suggest screening for celiac soon after diagnosis, again within two years, and again at five, which is why the blood test keeps reappearing.

Most celiac in type 1 is silent

Only about one in ten people get the classic digestive symptoms. The rest have vague fatigue, brain fog, headaches or joint pain, or nothing at all. Celiac also becomes more common with age, not less. That's

the reason screening is done on a schedule rather than waiting for symptoms.

Going gluten-free makes blood sugar harder, not easier

This surprises almost everyone. If celiac is confirmed, a gluten-free diet is the treatment and is not optional. But expect the numbers to get bumpier for a while, for two separate reasons.

Gluten-free products carry less fibre

So their carbohydrate arrives faster and peaks higher. Gluten-free bread is not a like-for-like swap for the bread it replaced.

Your gut starts absorbing properly again

As it heals, you take up more of what you eat than you used to. Some people need *more* insulin after starting, not less.

Watch numbers closely during the first weeks of the change, and keep your diabetes team in the loop so doses can follow.

What helps

Higher-fibre and lower-GI gluten-free choices, and getting the insulin in ahead of the meal. Certified gluten-free oats are usually fine in moderation.

And for everyone else

Without confirmed celiac, going gluten-free does nothing for type 1. Don't put someone on it as a favour.

This matters for families. Well-meaning relatives sometimes put people on elimination diets that help nothing and complicate dosing. If you're worried about celiac, the answer is the screening test, not a change of menu.

Sources: ADA Standards of Care 2025 · Breakthrough T1D · ISPAD 2022

Hosting and kids' parties

Practical tips for cooking for someone with type 1, the dinner-delay problem, and how to handle birthday cake, loot bags and kids' parties.

If you're cooking for someone with type 1, or your child has been invited to a birthday party, a little information and a reliable schedule help far more than a special menu. This page is for hosts, relatives and parents: what genuinely helps at the table, the timing problem nobody explains, and how to make kids' parties work.

If you're cooking for someone with type 1

Genuinely helpful

- Say what you're serving, beforehand
- Keep the packaging or the recipe
- Serve at the time you said
- Have regular, non-diet juice or pop in the house
- Say if something is unexpectedly sweet: the glaze, the marinade, the sauce

Not helpful

- Making a separate "diabetic meal"
- Pushing second helpings: that's a second dose, not just more food
- Asking "are you allowed that?"
- Buying sugar-free versions as a kindness
- Announcing to the table why the menu changed

A Nutrition Facts table is worth more than any reassurance. "There's barely any sugar in it" is not a number anyone can dose from. If you're serving something packaged, keep the box; the page on [reading a Nutrition Facts table](#) explains what the guest will be looking for.

The delay problem

This is rarely explained to hosts, and it's one of the most common causes of a low at a family dinner.

Many people with type 1 dose 15 to 20 minutes before eating. If dinner then slips an hour (speeches first, one more round of drinks), the insulin is already working and the food isn't there.

What to do about it

Give an honest time, and update it if it slips. And don't be offended if your guest eats a roll while waiting: that's the insulin, not bad manners.

Birthday cake, loot bags and kids' parties

Going to parties matters for a child's friendships and independence. The answer is never to stay home. It's to plan a bit, and accept that it won't be perfect.

Before

Ask the host what food there is and roughly when. Suggest that the running-around games come after eating rather than before.

During

A plate of food is easier to dose than two hours of grazing. Activity lowers glucose, so a party is not an ordinary afternoon.

The cake, and the loot bag

Both are yes. The sweets in the bag double as hypo treatment later. There is no reason for a child to be the only one without one.

Afterwards, don't withhold food

If they're running high that evening, insulin fixes that; skipping dinner doesn't. Serve sensible carbs, check before bed, and give a snack if needed to prevent an overnight low.

This last point is counterintuitive, so it's worth saying twice. The instinct to compensate for a party by restricting food afterwards is strong, and it does real harm. Withholding food to correct a high doesn't work, and it can be a step toward disordered eating.

Sources: Breakthrough T1D party guidance

Food myths, and not being the diabetes police

Five things people still say about type 1 and food, why they're wrong, and better sentences for family and friends to use instead.

Most of the unhelpful things people say about type 1 and food come from good intentions. This page is for family, friends and caretakers: five common myths and what's actually true, then why watching someone's plate backfires, and what to say instead.

Five things people still say

"They can't have sugar." They can, with insulin to cover it. Sugar is carbohydrate like any other; it just arrives faster.

"Fruit is too sugary." Fruit is counted, not avoided. Whole fruit brings fibre and arrives more slowly than the juice made from it.

"I bought the diabetic ones." Diabetic-branded foods are a marketing category, not a medical one. They're usually pricier, and often no easier to dose.

"No sugar added, so it's fine." No sugar added is not carb-free. Sugar alcohols still count, and in quantity they upset stomachs.

"A high number means they cheated." This is the one worth dwelling on. Numbers move with illness, stress, sleep, hormones, heat and yesterday's pizza. A reading is information, not a verdict on someone's character.

Numbers are data, not a score

Every number on a meter or sensor is data for the next decision. It is never a moral grade on the person wearing it.

Don't be the diabetes police

"Should you be eating that?" is never once helpful. They have insulin. They are dosing for it. They have also heard the question several hundred times.

Hovering and commenting doesn't improve anyone's numbers. What it does is make the person hide things, which is how a teenager stops mentioning the lows.

This is a condition managed around every meal, for life. Surveillance wears people down faster than the condition itself does.

If caretakers remember one thing from this whole section, make it this. Good intentions cause most of what's listed here.

Swap the sentence

Instead of...	Try...
"You look low."	"Have you checked?"

Instead of...	Try...
Handing them something and hoping	"What do you need?"
"Are you allowed this?"	"I'm serving at seven."
Nothing at all	"There's juice in the fridge."

Knowing where the fast sugar is kept is worth more than any amount of watching what goes on the plate. The page on [lows, alcohol and sick days](#) lists what counts as fast sugar, and what doesn't.

Sources: Diabetes Canada · Diabète Québec

KRKT's Type 1 Diabetes Education (KRKT:T1DE), from the KRKT Library.

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