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Metabolic

Type 2 diabetes

Professional dietetics sheet

Type 2 diabetes is the chronic condition where diet has the best documented impact: every point of HbA1c gained reduces complications. From the remission window of recent-onset diabetes to the stabilisation of established disease, this sheet organises advice by clinical stage, with the evidence.

UNDERSTANDING THE CONDITION

Type 2 diabetes

Type 2 diabetes is a metabolic disorder defined by chronic hyperglycaemia linked to insulin resistance, then to a progressive shortfall in insulin secretion. Diagnosis: fasting glucose at or above 1.26 g/L on two occasions, or HbA1c at or above 6.5%. Prediabetes (fasting glucose 1.00-1.25 g/L or HbA1c 5.7-6.4%) precedes the diagnosis by several years: it is the most cost-effective window for intervention. Insulin resistance, silent in itself, can exist for ten years before any biological anomaly appears.

SUGGESTIVE SIGNS

- Increased thirst and frequent urination, sometimes absent at first
- Post-meal fatigue, sugar cravings in mid-afternoon
- Abdominal weight regain, growing waistline
- Fasting glucose between 1.00 and 1.25 g/L or HbA1c 5.7-6.4% (prediabetes)
- High triglycerides, low HDL, rising blood pressure
- Acanthosis nigricans (darkened patches on the neck and skin folds), a sign of insulin resistance

THE FAVOURABLE TERRAIN

Metabolic terrain: abdominal overload, sedentary habits, a diet built on ultraprocessed foods and refined carbohydrates, stress and short sleep. Fatty liver (steatosis) often precedes diabetes: it is the early biological signal. People over 45, those with a family history, and anyone with a past history of gestational diabetes are the profiles to watch.

THE PROFILES

One plan per subtype

Dietary advice cannot be calibrated the same way at every stage: prediabetes prevention, the remission window of recent-onset diabetes, the stabilisation of established disease and the global cardiometabolic terrain each call for their own approach.

SUBTYPE	DISTINCTIVE SIGNS	QUICK SIGNAL
Prediabetes and insulin resistance	HbA1c 5.7-6.4% or fasting glucose 1.00-1.25 g/L, often asymptomatic; rising waistline and triglycerides.	***Routine blood tests or a growing waistline***
Recent-onset or overweight type 2 diabetes	Diagnosis within the last 6 years, overweight or abdominal obesity, potential for remission through significant weight loss.	***Recent diagnosis plus excess weight***
Established type 2 diabetes on treatment	Known diabetes on metformin or another treatment, variable blood sugar, the challenge of preventing complications.	***HbA1c above 6.5% despite treatment, or glycaemic fluctuations***
Global cardiometabolic terrain	Type 2 diabetes combined with hypertension, dyslipidaemia, fatty liver or a cardiovascular history; the stake goes beyond blood sugar.	***High triglycerides + blood pressure + waistline: the metabolic triad***

In practice the stages overlap: the established diabetic who is overweight keeps the remission window open as long as weight remains modifiable, and every type 2 profile carries a cardiovascular risk that justifies the Mediterranean model as a permanent base. Segmentation gives the clinical entry point; the advice combines. One precision for the elderly or frail diabetic: for them, undernutrition and muscle loss are more serious risks than imperfect blood sugar; plans loosen, protein rises, and the target becomes metabolic comfort rather than a figure.

1 Prediabetes and insulin resistance · *The window for action*

Prediabetes is the window in which dietetics prevents diabetes: the Diabetes Prevention Program showed that intensive lifestyle intervention cuts incidence by 58%, more than metformin (NEJM, 2002). Everything turns on carbohydrate quality, fibre and weight.

FOOD	WHY	PRACTICAL ADVICE
Chickpea	A low-GI legume rich in soluble fibre and protein that flattens the post-meal curve; legumes are the most documented starch against progression.	*3 to 4 times a week as the main starch, as homemade houmous, in curry or in salad; 150-200 g cooked per portion.*
Barley	Its soluble beta-glucan slows glucose absorption: meta-analysis on postprandial glycaemia (Eur J Clin Nutr, 2021).	*In place of white rice, in soup or kasha; measure the portion, as it is a starch.*
Oats	The same beta-glucan as barley, with a documented effect on post-meal blood sugar (review of meta-analyses, Crit Rev Food Sci Nutr, 2025).	*Breakfast porridge, 40-50 g of thick-cut or whole rolled oats, not instant: the chunkier the flake, the slower the digestion.*
Chard - Swiss Chard	A green vegetable rich in magnesium and fibre, almost zero glycaemic load.	*Steamed then briefly sautéed, several times a week.*
Spinach	Fibre, magnesium and folate: leafy greens are associated with a lower risk of type 2 diabetes in cohort studies.	*Raw in salad or wilted into dishes; one portion a day is the target.*
Walnut	Meta-analysis of controlled trials: nuts improve glycaemic control (PLoS One, 2014).	*30 g a day, a handful, unsalted and not oil-roasted.*
Almond (seed)	Same mechanism as the walnut, with a documented satiety effect.	*30 g as a snack or in breakfast; prefer whole almonds.*
Yogurt	Unsweetened fermented dairy products are associated with a reduced risk in prospective studies.	*Natural, whole or low-fat, with no added sugar; Greek-style yoghurt delivers more protein.*
Cinnamon	Meta-analyses: a modest but real reduction in fasting glucose (Ann Fam Med, 2013; Diabetes Res Clin Pract, 2019).	*Half a teaspoon in yoghurt or porridge; cassia is the everyday culinary form.*
Vinegar	Acetic acid taken before a meal dampens post-meal blood sugar (controlled trial, J Am Diet Assoc, 2005).	*Vinaigrette on starters as a rule; pickled gherkins play the same role.*

TO LIMIT	REASON
Sodas and fruit juices	A liquid glycaemic load absorbed within minutes; juice, even with no added sugar, remains a concentrate of fast sugars.
White bread and refined flours	High GI, fibre removed; switching to wholegrain measurably lowers the meal's glycaemic load.
Ultra-processed foods	Average caloric overconsumption of +500 kcal a day measured in a controlled trial (Hall, Cell Metab, 2019), plus a density of refined carbohydrates.
Added sugars	In all their forms (syrups, dextrose, coconut sugar, excess honey): what counts is the total daily glycaemic load.
Excess potatoes and white rice	High-GI starches when eaten alone and in large portions; portion size and what accompanies them change everything.

GOLDEN RULE

Prediabetes is won or lost on three daily substitutions: sugary drink for water, refined starch for wholegrain, sweet snack for nuts.

WHAT THE RESEARCH SAYS

The DPP programme (NEJM, 2002) remains the reference: 7% weight loss plus regular physical activity cut incidence by 58% at three years, outperforming metformin. The meta-analysis of low-GI eating patterns confirms improved glycaemic control (BMJ, 2021), and soluble fibre supplementation lowers HbA1c significantly (Clin Nutr, 2021).

2 Recent-onset or overweight type 2 diabetes · *The remission window*

In recently diagnosed overweight patients, remission (HbA1c below 6.5% without medication) is a realistic goal, documented by DiRECT: 46% remission at one year with weight loss of 10 kg or more maintained, a result extended to five years in those who keep the weight off (Lancet, 2018; Lancet D&E, 2024).

FOOD	WHY	PRACTICAL ADVICE
Courgette	A non-starchy vegetable with zero glycaemic load, very filling for its volume.	*Sautéed, in soup or as vegetable ribbons; half the plate.*
Tomato	A vegetable with nil GI that brings volume and acidity without carbohydrates.	*Raw in salad or cooked into a home-made sauce; beware sweetened industrial sauces.*
Mackerel	An oily fish rich in EPA/DHA omega-3, protective against cardiovascular risk, the first complication of type 2 diabetes.	*2 portions of oily fish a week; smoked or tinned mackerel in its own juice is fine.*
Herring	Affordable, sustainable omega-3 with the same protection as mackerel.	*In salad or marinated, 2-3 times a week in rotation with other oily fish.*
Tofu (soy cheese)	A plant protein with nil GI that usefully replaces fatty animal protein.	*In soups, stir-fries or marinated; 150 g as the meal's main protein source.*
Beef	A satiating protein and haem iron, with no glycaemic load; lean cuts limit saturated fat.	*Lean cuts, braised or stewed; 2-3 times a week at most.*
Chicken egg	A high-quality, low-carbohydrate protein linked to better morning satiety.	*At breakfast, 1-2 eggs instead of a sweet breakfast; boiled, poached or scrambled.*
Button Mushroom	Volume for zero carbohydrate, distinctive fungal fibre, and an umami effect that satisfies without sugar.	*In every stir-fry and soup; 150 g per portion as the vegetable.*
Adzuki	A low-GI legume rich in resistant starch that moderates the glycaemic response.	*In soup or in chilled salad; legumes count as the starch of the portion.*
Fenugreek	A mucilaginous seed that slows glucose absorption; supplementation improves glycaemic control in meta-analysis (Int J Mol Sci, 2023).	*Soaked seeds in lentil soups or curry; 1 teaspoon a day.*

TO LIMIT	REASON
Improvised severe calorie restriction	The weight loss that opens remission is managed with the dietitian and the doctor; on glucose-lowering drugs, a sudden deficit exposes the patient to hypoglycaemia.
Industrial and trans fats	They worsen insulin resistance and the cardiovascular risk attached to type 2 diabetes.
Sweetened drinks and juices	The highest glycaemic peak with no satiety; removing them is often the first lever that brings HbA1c down.
Refined starches in large portions	White rice, white bread, overcooked pasta: glycaemic load depends on portion and cooking, and al dente spikes less.
Daily alcohol	Empty calories, delayed hypoglycaemia in treated patients, and worsened fatty liver.

GOLDEN RULE

Losing 10% of body weight over 6 months and keeping it off changes the prognosis of recent-onset diabetes more than any single food: it is the plan's first objective.

WHAT THE RESEARCH SAYS

DiRECT redefined the prognosis of recent-onset type 2 diabetes: 46% remission at one year under a primary-care weight-loss programme, durable at five years in those who maintain it (Lancet, 2018; Lancet D&E, 2024). Low-carbohydrate diets achieve better remission rates at six months (meta-analysis, BMJ, 2021) with an effect that fades by 12 months: durability outranks method. The Mediterranean model reduces incidence and improves control (Diabetologia, 2022; BMJ Open, 2015).

3 Established type 2 diabetes on treatment · *Balance and consistency*

In established diabetes on treatment, the dietary stake shifts from remission to consistency: regular intake to avoid hypoglycaemia and hyperglycaemia, prevention of complications through overall diet quality, and coordination with the doctor for any change in carbohydrate intake.

FOOD	WHY	PRACTICAL ADVICE
Barley	A wholegrain cereal with beta-glucan: systematically switching to wholegrain starches improves HbA1c in trials.	*In soup, kasha or barley risotto; measured portions, 150-180 g cooked.*
Cauliflower	A cruciferous vegetable with zero glycaemic load, versatile as mash, gratin or vegetable couscous.	*Steamed or roasted; replaces part of the starch at evening meals.*
Cabbage	A fibrous crucifer almost nil in carbohydrates, very satiating.	*In soup, stir-fried or fermented as home-made sauerkraut; several times a week.*
Eggplant, Aubergine	A vegetable with nil GI whose fibrous skin slows absorption; very filling for few calories.	*Roasted in the oven rather than fried, since it soaks up oil; as caviar or in curry.*
Onion	An allium with almost zero glycaemic load that flavours without sugar or fat.	*Freely as an aromatic in every dish; garlic and chives follow the same logic.*
Prawn	A lean protein without carbohydrates that helps balance the plate.	*3-4 portions of lean protein a week in rotation with legumes.*
Carrot	A crunchy vegetable with low glycaemic load in a normal portion; raw, it stays very moderate.	*Raw grated or cooked al dente; avoid concentrated carrot juices.*
Apple	A moderate-GI fruit with intact fibre; whole fruit is not juice.	*Whole as a snack or dessert; one to two portions of fruit a day.*
Vinegar	Acidity at the start of a meal dampens the post-meal peak (controlled trial, J Am Diet Assoc, 2005).	*Vinaigrette on starters, lemon juice on fish; a systematic gesture.*
Chives	An aromatic free of salt and sugar that makes salt reduction easier, a cardiovascular stake in type 2 diabetes.	*Generously at the end of cooking; chives, parsley and basil replace part of the salt.*

TO LIMIT	REASON
Irregular mealtimes and skipped meals	Regular intake stabilises blood sugar on treatment better than the composition of any single meal; on sulphonylureas or insulin, a skipped meal exposes the patient to hypoglycaemia.
Sodas, juices and sweetened drinks	Their removal is often the only change needed to see HbA1c fall measurably.
Fried and ultra-processed foods	Hidden caloric load and industrial fats that worsen insulin resistance and cardiovascular risk.
Sugars marketed as healthy	Honey, agave syrup and whole sugar have the same glycaemic load as white sugar: no version is a licence.
Excess dried fruit	Very high sugar concentration per gram: 30 g of raisins equals a whole fruit in glycaemic load.

GOLDEN RULE

Consistency beats perfection: same hours, same portions, same plate structure; regularity is what stabilises blood sugar on treatment.

WHAT THE RESEARCH SAYS

Regular intake and total glycaemic load guide the plan for established diabetes. Low-GI eating patterns improve HbA1c measurably (meta-analysis, BMJ, 2021), soluble fibre lowers fasting glucose (Clin Nutr, 2021), and the Mediterranean model reduces cardiovascular events, the first complication of type 2 diabetes (Diabetologia, 2022). Any change in carbohydrate intake is coordinated with the treating doctor.

4 Global cardiometabolic terrain · *The vascular risk*

When diabetes is joined by hypertension, dyslipidaemia and steatosis, the dietary target widens to overall cardiovascular risk: reducing salt, saturated fat and caloric overload, with the Mediterranean model as the reference for prevention.

FOOD	WHY	PRACTICAL ADVICE
Olive	The fruit and its oil are the signature fat of the Mediterranean model; monounsaturated, they replace saturated fats.	*A few olives as a starter or in salad; olive oil, 2 tablespoons a day as seasoning, rapeseed oil completes the omega-3 picture.*
Mackerel	EPA/DHA omega-3 that lower triglycerides and cardiovascular risk.	*2-3 portions of oily fish a week; tinned fish in its own juice is fine.*
Herring	The same omega-3 protection, the cheapest of the oily fish.	*In Nordic-style salad or marinated; weekly rotation with sardine and mackerel.*
Chickpea	A favourable effect on the lipid profile on top of glycaemic control: soluble fibres that bind cholesterol.	*Daily in place of refined starch; rinsed tinned chickpeas are fine.*
Walnut	Lowers LDL and improves glycaemic control (PLoS One, 2014).	*30 g a day; stirred into morning yoghurt for the satiety effect.*
Avocado	Monounsaturated fats and potassium; in the Mediterranean model it replaces fatty spreads.	*Half an avocado as a starter or snack, with lemon.*
Garlic	A modest but documented effect on blood pressure and the lipid profile; an aromatic that reduces the need for salt.	*Daily in cooking; crushed and left to stand 10 minutes before use.*
Spinach	Potassium and nitrates that help blood pressure; zero glycaemic load.	*Green leaves every day: spinach, chard, cabbage.*
Black Sesame	An oleaginous seed rich in lignans and unsaturated fats.	*A tablespoon of sesame paste in vinaigrette or over vegetables.*
Yogurt	A fermented product associated with a more favourable metabolic profile in cohort studies.	*Natural, unsweetened, whole or low-fat depending on weight; 1-2 a day.*

TO LIMIT	REASON
Excess salt	Hypertension combined with type 2 diabetes multiplies cardiovascular risk; salt hides in bread, cheese and cured meats.
Cured meats and processed meats	Salt, saturated fats and nitrites: the worst combination for a cardiovascular terrain.
Fried foods	Frying adds oxidised fats to the caloric load; prefer oven, steam and stir-fry.
Liquid sugars	Sodas, juices and sweetened drinks: triglycerides, steatosis and glycaemic peaks all at once.
Daily saturated fats	Butter, cream and fatty cheese every day in excess: to be replaced by olive oil and nuts.

GOLDEN RULE

On a cardiometabolic terrain, the Mediterranean model is not an option: it is the documented reference for cardiovascular prevention.

WHAT THE RESEARCH SAYS

The Mediterranean model has demonstrated reduced cardiovascular events and improved glycaemic control (Diabetologia, 2022; BMJ Open, 2015). Nuts improve the lipid profile and blood sugar (PLoS One, 2014), soluble fibres act on cholesterol and glycaemia alike (Clin Nutr, 2021), and the DPP programme confirms that diabetes is prevented through lifestyle (NEJM, 2002).

CROSS-CUTTING

What applies to all profiles

Whatever the stage, diabetes is played out on the regularity and structure of the meal. This advice holds for every profile and is shared with the client.

• Meal order matters: vegetables and protein first, carbohydrates last on the plate. The same carbohydrate ration peaks lower when fibre precedes it.

• Half the plate in vegetables remains the simplest and most effective rule to pass on.

• Vinaigrette or a pickled gherkin at the start of a meal has a measurable effect on post-meal blood sugar.

• Ten to fifteen minutes of walking after the main meal mobilise glucose through the muscles and flatten the peak: the cheapest advice in this sheet.

• Whole fruit rather than juice, wholegrain starch rather than refined, measured portion rather than forbidden: three substitutions that change the terrain for good.

• Regular mealtimes regulate the level as much as content does: diabetes hates improvisation.

• Drink water; every sweetened drink is a guaranteed peak, including fruit juices with no added sugar.

• Glycaemic monitoring remains the compass: any significant dietary change is verified in the numbers, with the doctor for glucose-lowering drugs.

IN THE KITCHEN

Recipes that fit

Everyday French cooking, staple dishes

Ordinary dishes that carry the glycaemic logic: barley, legumes, oily fish.

- Cèpes and barley soup
- Red lentil dal with dill
- Bok choy, tofu and shiitake mushroom soup
- Aubergine and chickpea curry
- Smoked mackerel fillet, caraway espuma and melting potato
- Furofuki daikon

Around the world, simple gestures

Foreign formats directly transferable: congee, herring salad, barley kasha.

- Savory oat congee with mushrooms and ginger
- Sildesalat (herring salad)
- Barley kasha with mushrooms and onions
- Fenugreek lentil soup
- Sesame sautéed chard with soy sauce (ohitashi chard)
- Azuki bean salad with crunchy vegetables and sesame vinaigrette

NOTES FOR THE PRACTITIONER

- This sheet supports dietary work and in no way replaces medical follow-up of diabetes. Any change in carbohydrate intake in a patient on sulphonylureas, insulin or glinides exposes them to hypoglycaemia and is coordinated with the treating doctor.

- Warning signs to raise with the doctor: persistently very high blood sugar, repeated hypoglycaemia, a foot wound that will not heal, sudden vision disturbance, nausea with acetone breath, unintended rapid weight loss.

- Key references: Diabetes Prevention Program, NEJM 2002 (prevention, 58% incidence reduction); DiRECT, Lancet 2018 and 5-year follow-up Lancet Diabetes Endocrinol 2024 (remission); meta-analysis of low-carbohydrate diets, BMJ 2021; meta-analysis of low-GI eating patterns, BMJ 2021; meta-analysis of soluble fibre, Clinical Nutrition 2021; meta-analysis of nuts, PLoS One 2014; meta-analysis of cinnamon, Annals of Family Medicine 2013; Mediterranean model, Diabetologia 2022; post-meal acetic acid, J Am Diet Assoc 2005; fenugreek, Int J Mol Sci 2023.

- Type 2 diabetes is the condition where nutrition has the most measured impact: every point of HbA1c gained reduces microvascular complications. The dietitian is the best placed professional to open the remission window of recent-onset diabetes and secure the stability of established disease.