PuneRunners

PRESENTS

THE RUNNER'S FUEL & NUTRITION GUIDE

Everyday eating, the protein kitchen, and race-day fuelling - built for Indian kitchens and Indian races. Everyday food first, gels only where they earn it. Built on published sports-nutrition research, with estimates labelled.

FREE FOREVER · NO SIGN-UP · NO APP

For the PuneRunners community and every runner who has ever asked "but what do I actually eat?" - this one's for you.

General education, not medical advice. A medical condition, pregnancy, or a history of disordered eating - see a doctor or dietitian first.

SECTION 01

START HERE

Two minutes of orientation before any plan in this guide.

who this is for

Runners who want everyday eating handled - enough protein, enough carbs, no supplement-shop dependence - and race-day fuelling that survives Indian heat, Indian food and Indian race logistics.

how to use this guide

Part one is everyday eating and the protein kitchen: pick a day plan and repeat it. Part two is race fuel: read it two weeks before a race, then follow the race-week page. Part three levels up. The free calculator at punerunners.com/runnersfuel personalises the numbers. Your food and hydration strategy should reflect your actual training schedule - the sibling Runner's Workout Guide maps your weekly running, strength and recovery demands.

important health and training disclaimer: this guide is for general educational purposes - it is not a substitute for individual medical advice, diagnosis, treatment or professional coaching. Exercise and nutrition requirements vary between individuals: consult an appropriate healthcare professional before beginning a programme if you have a medical condition, injury, significant health concern or a history of disordered eating (if you are pregnant or under 18, set targets with your doctor or a registered dietitian). Stop training if you experience concerning symptoms, progress gradually, and adjust the programme to your ability, training history and recovery. The authors and publishers are not providing individual medical or nutritional prescriptions through this guide.

the two ideas everything hangs on

Protein anchor, carb base: every meal is a protein anchor plus a carb base plus veg or fruit. **Fuel for the work required:** eat for the run you're actually doing - easy days lighter, long-run and race days loaded.

honest numbers

Food figures come from IFCT 2017, USDA tables and pack labels, and brands vary - treat every total as approximate (~). Targets come from published sports-nutrition guidance for healthy adults; your body, your training and your doctor outrank any table here.

the one habit that matters: whatever the pack claims on the front, flip it and read protein per 100 g on the back panel. That one habit beats every marketing name in the aisle.

CONTENTS

WHAT'S INSIDE

Three parts: eat everyday, fuel the race, level up. Screenshot the contents; jump to what you need.

PART ONE · EAT EVERYDAY

SECTION	CHAPTER	WHAT YOU GET
02	the everyday plate	training-week thali, calories & macros by hand, eating on repeat, fuelling the week, the gym side
03	the protein kitchen	the anchor kit, weekly rhythm, four audited day plans (~114-130 g), scaling to 150/200 g, packs, lactose-free swaps, the shopping basket

PART TWO · RACE FUEL

SECTION	CHAPTER	WHAT YOU GET
04	before the race	carb loading, race morning, race week step by step
05	during & after	pocket fuel, sodium & fluid, the short-race question, hydration & the sweat test, recovery eating
06	the edges	caffeine, supplements graded, special situations, gut trouble, eating out & airports, racing away from home

PART THREE · LEVEL UP + REFERENCE

SECTION	CHAPTER	WHAT YOU GET
07	level up	how fuel becomes pace, micronutrients, gut training, periodising carbs, supplement protocols, ultras/heat/monsoon, three runners
08	reference	glossary, common mistakes, every number on one page, sources

pair it with its sibling: the Runner's Workout Guide covers the training half - week templates, running plans, strength lanes for every equipment setup, recovery and comebacks. Free at punerunners.com/runnersworkout.

THE TRAINING-WEEK THALI

On normal training weeks, build most meals the way an Indian plate already works: a big carb base, a protein, vegetables, and a little fat. You do not need imported health food. You need enough total food.

NUTRIENT	DAILY TARGET FOR RUNNERS	INDIAN SOURCES
carbs	5-7 g/kg on normal days; 7-10 g/kg in heavy marathon training	rice, roti, poha, upma, idli, dosa, potato, banana, fruit
protein	~1.2-1.6 g/kg/day for recreational training (the master table in the protein kitchen), spread across meals	dal, chana, rajma, paneer, curd, milk, soy chunks, eggs, chicken, fish
fat	the rest - keep fried food occasional, not daily	ghee, nuts, seeds, oil in cooking

veg runners, two honest flags: iron and B12 are the two nutrients most often low in vegetarian runners, and low iron quietly wrecks endurance. Don't guess and don't self-prescribe iron pills (too much iron is harmful). If fatigue or slowing times show up, get a blood test before reaching for a supplement - and supplement only if the report and your doctor say so.

PROTEIN WITHOUT A SUPPLEMENT SHOP

A 60 kg runner needs roughly 70-95 g protein a day. That is very reachable: 2 eggs (12 g) + a katori of dal (7 g) + 100 g paneer (18 g) + a glass of milk (8 g) + curd (5 g) + rajma or chana at dinner (12-15 g) + the protein inside your rice, roti and vegetables (20-25 g) lands you there. Whey is convenience, not necessity.

100 g is a target, not a law

Needs scale with body weight and training - the "how much do you need" page later in this part shows how to pick your number. The four day plans in this part aim at ~114-130 g with slack for swaps, and each one scales up or down without new recipes.

ps: punerunners is a free running club - no fees, no pace too slow. Come run the internet with us: r/punerunners · @punerunnersclub on Instagram · punerunners.com.

YOUR CALORIES & MACROS, BY HAND

The same math the calculator at punerunners.com/runnersfuel uses, done by hand.

STEP 1 · YOUR RESTING BURN (BMR)

the most-used research equation (Mifflin-St Jeor)

men: BMR = 10 x weight(kg) + 6.25 x height(cm) - 5 x age + 5
women: BMR = 10 x weight(kg) + 6.25 x height(cm) - 5 x age - 161
Example: 60 kg, 170 cm, 28-year-old man = 10x60 + 6.25x170 - 5x28 + 5 = 1528 kcal

STEP 2 · ADD YOUR LIFE (ACTIVITY FACTOR)

YOUR WEEK	MULTIPLY BMR BY
desk job, light training (2-3 runs)	x 1.4-1.5
training 4-5 days a week	x 1.55-1.65
heavy training, 6+ days or doubles	x 1.7-1.9

Our example runner at 4-5 days: 1528 x 1.6 = ~2450 kcal/day to stay the same weight.

STEP 3 · SET THE GOAL

GOAL	ADJUSTMENT	RULE
perform / maintain	eat at your number	under-eating is the most common training error
lose fat	minus 300-500 kcal/day	slow only - big cuts cost muscle, recovery and immunity
build muscle	plus 200-300 kcal/day	small surplus + protein + progressive lifting

STEP 4 · SPLIT IT INTO FOOD (MACROS)

MACRO	RUNNER TARGET	60 KG EXAMPLE
protein	1.2-1.6 g/kg · 1.4-1.8 with regular gym work (master table, protein kitchen)	72-96 g/day
carbs	3-5 g/kg light · 5-7 normal · 7-10 heavy blocks	300-420 g normal
fat	the remaining calories, ~20-30%	55-80 g

estimates, not prescriptions - and don't go low: calorie math gives an initial estimate, not a prescription - actual needs vary with daily movement, training load, body composition, recovery, sleep and metabolism. Use it as a starting point; assess energy, performance, recovery and weight over 2-4 weeks before adjusting. Persistent fatigue, declining performance, frequent illness, poor recovery, disrupted menstrual function or reduced libido may mean inadequate energy availability (REDs): eat more, not less, and see a doctor.

EATING, ON REPEAT

A diet you can follow beats a perfect diet you can't - including runner + gym days, and eating out.

THE REPEATABLE WEEK (VEG BASE, SWAP AS YOU LIKE)

MEAL	HOME VERSION
breakfast	poha with peanuts + curd · or 2-3 eggs + 2 toast · or oats/dalia with milk + banana
lunch	thali: 2-3 roti or rice + dal + sabzi + curd + salad
snack	banana + chai · roasted chana · paneer/egg sandwich · fruit + a handful of nuts
dinner	rice or roti + rajma/chole/paneer/chicken + curd · khichdi + curd on easy days

Repetition is a feature, not a failure. Most good runners eat a small set of meals on rotation - it makes shopping, cooking and hitting your numbers automatic.

RUNNER + GYM DAYS

- **Carbs around the run** - a banana or toast before, a real meal after.
- **Protein around the gym** - 20-30 g within a couple of hours of lifting (2 eggs + milk, paneer, chicken, soy, or dal-rice).
- **Hard session days eat more, rest days eat normal** - don't slash carbs on rest days; tomorrow's run is being fuelled tonight.
- **Lift and run the same day?** Separate them by a few hours when you can; if you cannot, do the session that matters more to your current goal first, while you are fresh.

EATING OUT / OFFICE CANTEEN / TRAVELLING

PICK THESE	GO EASY ON THESE
idli, dosa, uttapam	medu vada, bhature, poori-bhaji daily
dal-rice, rajma-rice, khichdi, curd-rice	butter-laden gravies + naan as the default
tandoori / grilled chicken, paneer tikka, egg curry + rice	deep-fried starters as the meal
boiled eggs from the breakfast counter or a thela	pastries and cream desserts as a "snack"
chaas, nimbu pani, coconut water, plain lassi	daily sugary cold drinks and loaded milkshakes
sandwiches, frankie with egg/paneer, poha/upma at the canteen	chips-and-soft-drink lunch substitutes

the boiled-egg rule: when in doubt outside, anchor the meal with a simple protein you can see - boiled eggs, grilled chicken, paneer, dal - add rice or roti, and you're basically on plan. Perfection is not required; the anchor is.

FUELLING YOUR TRAINING WEEK

"Fuel for the work required" - eat for the run you're actually doing, not the one on Instagram.

DAY	WHAT CHANGES
easy run (under 60-75 min)	normal meals. nothing special before; a snack if hungry.
long run (90+ min)	carb-rich dinner the night before; breakfast 1-3 h before; practise race fuel during - 30-60 g carbs/h. This is where race day is rehearsed.
intervals / tempo	a carb snack 60-90 min before (banana, toast); protein + carbs after.
gym day	20-30 g protein within ~2 h of lifting; normal carbs.
rest day	eat normally - don't slash carbs. tomorrow's run is fuelled tonight. slightly smaller portions are fine if you're less hungry.

periodise, don't flatline: your biggest eating days should be your biggest training days. Heavy marathon-block weeks need 7-10 g/kg carbs; easy weeks need less. Weight that drifts up in heavy training usually means under-fuelling during runs and over-compensating after - fix the during first.

THE PORTION DIALS

DAY	TURN
easy / rest	base day as-is. smaller snack if less hungry - don't slash dinner, tomorrow is fuelled tonight.
long run	+ carb serving at breakfast and lunch (extra katori rice, extra toast); in-run fuel on top.
intervals / tempo	+ carb snack 60-90 min before; protein + carbs after.
gym + run	+ 20-30 g protein around the gym (2 eggs + milk, paneer, soy chunks); carbs stay.
fat loss	trim ~300-400 kcal from oils, snacks and the bed-time milk - never from pre/post-run food.

office & after-work runs

Tiffin that travels: roti + sabzi + curd, rice-dal, egg or paneer sandwich. The 5 pm pre-run snack lives in your bag (banana, bread-jam, dates). Run at 6-7 pm, dinner becomes the recovery meal within an hour or two of finishing. Morning runner? Shift the snack to post-breakfast and keep dinner normal.

meal-prep for full-time workers (sunday, ~1 hour): boil 6-8 eggs · cook a big dal + a big rice batch · chop 2 days of sabzi · portion peanuts/chana into small boxes · bananas + bread on the counter. Weekdays then run on assembly, not cooking.

THE GYM SIDE

Running + lifting together, without one eating the other.

- **Protein is the anchor:** 1.4-1.8 g/kg/day when running meets regular lifting (master table, protein kitchen) - many gym+run runners land near 1.6 - split into 3-5 meals of ~20-40 g. The "30-minute anabolic window" is mostly myth - total daily protein matters far more than timing. Just don't go many hours empty after lifting.
- **Separate hard sessions:** lift and run hard on the same day only if separated by a few hours; otherwise alternate hard/easy days. Legs day before a long run is a classic self-own.
- **Building muscle while running:** small calorie surplus (+200-300 kcal), high-end protein, and accept that heavy mileage slows muscle gain. Pick the priority per season.
- **Creatine (3-5 g/day, any time):** the one supplement with deep evidence for gym work - strength, power, muscle. It often adds some water weight (commonly ~1-2 kg, but it varies), which distance runners feel. Use it in gym-focused blocks, not peak race weeks.
- **Veg lifters:** soy chunks (52 g protein/100 g dry), paneer, curd, milk, dal + rice together, peanuts - hitting 1.6 g/kg veg is very doable.
- **Fuelling for HYROX / hybrid events:** HYROX combines running with demanding functional exercise, so fuelling covers both endurance demands and muscular work. Prioritise familiar carbohydrate-rich meals in the 24-48 hours before, eat a familiar pre-event meal ~3-4 hours before the start (adjust timing and portion size to your tolerance), and treat any small carbohydrate top-up closer to the start as useful for some, not mandatory. Practise the strategy in training; no unfamiliar foods or supplements on race day [23]. No marathon-length loading needed.

A FULL DAY OF EATING, THREE WAYS

Veg, with eggs, or non-veg - one training day on a plate, with approximate numbers. 60-65 kg runner, evening run day.

MEAL	THE PLATE (VEG BASE)	APPROX
breakfast	poha with peanuts + 1 katori curd	450 kcal · 14 g protein · 65 g carbs
mid-morning	banana + chai	150 kcal · 2 g · 30 g
lunch	2 roti + 1 katori rice + dal + sabzi + curd	700 kcal · 25 g · 110 g
pre-run (5 pm)	2 toast + jam, or a banana	150 kcal · 3 g · 30 g
dinner (post-run)	rice + rajma + curd + salad	700 kcal · 25 g · 100 g
before bed	1 glass milk	150 kcal · 8 g · 12 g
day total	**~2300 kcal · ~77 g protein · ~350 g carbs**	

With eggs: breakfast becomes 3 eggs + 2 toast (+8 g protein); boiled eggs work as a snack. **Non-veg:** lunch becomes chicken curry + rice, or grilled fish + rice at dinner (+15-20 g protein). Carbs and calories barely move - protein is what the swaps buy.

THE SHORT VERSION

Five ideas the whole kitchen chapter runs on.

1. **Soya chunks are the cheat code.** ~52 g protein per 100 g dry - the base this whole chapter runs on. Soak, squeeze, cook into anything.
2. **One day of ordinary food covers it.** 100 g+ protein with vegetables, fruit, oil and spices included - with eggs or fully vegetarian, from a regular kitchen. A convenience-pack version exists for rushed days.
3. **Whey is a tool, not a requirement.** It earns its place when there is no time, no kitchen or no appetite right after training. One 32 g sachet gives ~25 g.
4. **Read per 100 g, never the pack name.** A "50 g protein" yogurt tub has ~12 g per 100 g - the 50 g is the whole tub, so a 60 g serving is about 7 g.
5. **100 g is a target, not a law.** Needs scale with body weight and training - "how much do you need" (a few pages on) shows how to pick your number. These plans aim at 100 g with slack for swaps.

why this chapter exists: most Indian runners under-eat protein without noticing - dal twice a day feels like enough and rarely is. The kitchen chapter fixes that with food you already cook, then gets out of the way.

THE ANCHOR KIT

Six staples that do all the heavy lifting. The four dry ones keep for weeks at room temperature; eggs and dairy are the chilled ones.

STAPLE	PROTEIN	WHY IT'S HERE
soya chunks	~52 g / 100 g dry	The heavy lifter. Prep per the pack: soak ~10 min in boiling water, squeeze, cook into the dish; some packs say boil 5-10 min instead. 50 g dry ≈ 26 g protein - about four katoris of dal.
eggs	~6.3 g / egg	Boil 8-10 on Sunday. Hard-boiled eggs keep about a week in the fridge.
milk & curd	~3.2-3.4 g / 100 ml	Set curd from tonight's milk - it becomes dahi, raita and lassi. Milk troubles your stomach? The lactose-free page explains.
roasted chana	~19 g / 100 g	The desk jar. 30 g ≈ 6 g protein and kills the 5pm snack run. Ground up it becomes sattu: ~22 g per 100 g, stirred straight into water or milk.
peanut butter & peanuts	~26 g / 100 g	The calorie lever when the rest of the day was too lean. Calorie-dense, so weigh them.
rolled oats	~12 g / 100 g	The overnight-oats base, and upma's faster cousin.

desk-day trick: curd, fruit, roasted chana or a whey shake all beat the namkeen and biscuit aisle at 5pm. Keep one within reach and the decision makes itself.

THE WEEKLY RHYTHM

About 45 minutes on Sunday carries the whole week.

1. **Sunday, ~45 minutes.** Boil 8-10 eggs. Portion soya chunks and oats into daily servings. Set the curd habit going.
2. **Weekdays, 15-30 minutes.** Mostly one-pot dal-rice or soya pulao, plus assembly: jars, chana, fruit, peanuts.
3. **Cook once for 3 days.** Dal, cooked soya chunks and sabzi keep 2-3 days refrigerated. Cool batches quickly, then chill; pack tomorrow's office meals the night before.
4. **Fridge rhythm.** Milk and curd run on a 2-3 day cycle. Boiled eggs last about a week. Fresh high-protein milk (Provilac-style) lasts only 2 days, even refrigerated.
5. **No fridge?** Swap fresh milk for high-protein milk tetrapaks, fresh curd for packaged buttermilk, and lean on tin paneer, UHT packs and the dry staples. Shelf-stable means unopened: once opened, follow the label - refrigerate, or finish single-serve packs straight away.
6. **Rice safety.** Keep rice fresh-cooked; the batches above are dal, soya and sabzi. Without a fridge there is no safe way to pack cooked rice for a 12-hour workday - refrigerate within 2 hours (1 hour above 32 °C). Reheating does not remove Bacillus cereus toxins.

OVERNIGHT OATS, THE ACTUAL METHOD

Oats + milk + curd in a jar, fridge for 6-12 hours, eaten cold. Make two jars at a time; they hold 2-3 days refrigerated. Skip the freezer - it changes the texture and buys nothing the fridge does not. A 25 g-protein whey sachet stirred in takes the jar to ~47 g protein.

the quoted combo: high-protein milk + muesli

Provilac-style HP milk: ~25 g per 250 ml pack, lactose free, fresh with a 2-day shelf life. HP muesli: ~24 g protein and 17 g sugar per 100 g. One pack + 40 g muesli ≈ 35 g protein - the fastest 35 g breakfast here, and the most packaged one. A rotation, not a default. The fresh HP milk label says do not heat it, so no hot oats with that milk.

EVERYDAY · DAY PLAN 01

VEG + EGGS, WHOLE FOODS

The default. The whole-food route. Staples weighed dry; lactose-free swaps a few pages on.

Important note about these meal plans: this and the next three days are examples of how meals can be structured from accessible foods. Calorie and protein totals are estimates, not personalised prescriptions - your requirements depend on body size, training load, goals, health status and daily activity, so adjust portion sizes and food choices accordingly. A higher-protein meal plan is not automatically better: adequate total energy and carbohydrate intake matter just as much for endurance performance and recovery.

MEAL	WHAT'S IN IT	PROTEIN
overnight oats jar	50 g oats, 250 ml milk, 100 g curd, 20 g peanut butter. Fridge overnight.	~22 g
2 boiled eggs + roasted chana 30 g	Eggs from the Sunday batch.	~18 g
soya chunk pulao with veg	50 g dry chunks, 60 g rice, 100 g spinach or any sabzi, 1 tsp oil, 150 g curd.	~37 g
milk, peanuts and a guava	250 ml milk, 20 g peanuts. Guava's vitamin C pulls more iron out of the day.	~16 g
dal, 2 rotis, sabzi, curd	40 g dry toor dal, 60 g atta, 100 g any veg, 1 tsp oil, 100 g curd.	~21 g

the day, totalled

~114 g protein · ~2,125 kcal · ~39 g fibre (est) · about 25 minutes of work plus the Sunday batch.

how to read the numbers

Every figure is an estimate from IFCT 2017 / USDA tables and pack labels - brands and home measures vary, so treat totals as approximate. The audit trail is in the sources.

make it yours: any sabzi works, any dal works, roti and rice swap freely. The anchors - soya, eggs, dairy, chana - are what carry the number.

dry vs cooked - weigh it once

The day plans weigh staples dry because cooked weight depends on your kitchen: rice and dal swell with the water they take on, and roti size varies by household. Cooking for family or serving out of a shared pot? Weigh your portion once to learn what your katori or ladle holds, then serve by eye. (NIN's standard katori is 200 ml; home bowls vary.)

TWO MORE DAYS

Same skeleton, different weeks. Soya, dal, rice and atta weighed dry.

PLAN 02 · PURE VEGETARIAN, NO EGGS

MEAL	WHAT'S IN IT	PROTEIN
overnight oats jar	50 g oats, 250 ml milk, 100 g curd, 20 g peanut butter	~22 g
roasted chana 50 g + curd 100 g	the desk snack	~13 g
soya chunk pulao with veg	60 g dry chunks, 60 g rice, 100 g veg, 1 tsp oil, 150 g curd	~43 g
HP tin paneer 50 g, 1 roti, guava	ordinary fresh paneer runs ~9-10 g per 50 g, so the row drops ~3 g	~19 g
dal, 2 rotis, sabzi, curd	50 g dry dal, 60 g atta, 100 g veg, 1 tsp oil, 100 g curd	~23 g
total - paneer and extra soya take the egg slots		**~120 g · ~2,150 kcal**

PLAN 03 · THE CONVENIENCE STACK

MEAL	WHAT'S IN IT	PROTEIN
Provilac HP milk + HP muesli 40 g	one pack, one pour - breakfast in 60 seconds; with the Amul tetrapak it is ~45 g	~35 g
soya pulao + HP buttermilk	40 g dry chunks, 80 g rice, tomato, 1 tsp oil, one 200 ml pack	~42 g
tin paneer 50 g, peanuts 50 g, fruit	1 banana, 1 guava - no cooking at all	~29 g
dal, 3 rotis, salad, curd	40 g dry dal, 90 g atta, cucumber-tomato salad, 1 tsp oil, 100 g curd	~24 g
total - assembled from the Sunday batch and the fridge stash; nothing here is cooked from scratch on the day		**~130 g · ~1,950 kcal**

EVERYDAY · DAY PLAN 04

THE HARD TRAINING DAY

Same food, more of it - one sachet where convenience earns it.

PLAN 04 · HARD TRAINING DAY

MEAL	WHAT'S IN IT	PROTEIN
overnight oats jar, bigger	60 g oats, 250 ml milk, 100 g curd, 20 g peanut butter	~23 g
whey sachet in water, 1 banana	right after training, when appetite is low	~26 g
soya chunk pulao with veg	50 g dry chunks, 80 g rice, 100 g veg, 1 tsp oil, 150 g curd	~39 g
2 eggs, 2 rotis, guava	evening protein	~22 g
dal, rice, sabzi, curd	40 g dry dal, 60 g rice, 100 g veg, 1 tsp oil, 100 g curd	~18 g
total - same food, more of it, one sachet where convenience earns it		**~128 g · ~2,350 kcal**

make it yours: shift the sachet to whenever appetite is lowest after training. On easy weeks, eat plan 01 and skip the sachet.

HOW MUCH DO YOU NEED?

One master reference table, used throughout this guide and its sibling workout guide (sports-nutrition guidance for exercising adults: ISSN 2017; ACSM/AND/DC 2016).

TRAINING FOCUS	PRACTICAL DAILY PROTEIN REFERENCE
Recreational endurance training	1.2-1.6 g/kg
Running combined with regular strength training	1.4-1.8 g/kg
Strength-focused training	1.6-2.0 g/kg

These ranges are practical reference points, not mandatory targets. Protein needs vary with training volume, energy intake, age, recovery demands and individual circumstances. People with kidney disease or other relevant medical conditions should seek individual advice from a qualified healthcare professional.

Example for a 60 kg runner: 1.2 g/kg = 72 g/day · 1.6 g/kg = 96 g/day · 1.8 g/kg = 108 g/day · 2.0 g/kg = 120 g/day. Not every runner needs the highest figure - most training sits inside the first two rows.

where 100 g fits - everyday target

A sensible everyday number for many runners, which is why this guide's plans aim there with slack. Your own number comes from your weight and training.

where 200 g fits - special case

The reference ranges reach ~200 g only at heavier body weights, around 100 kg and up. For a 60 kg person, 200 g of protein is approximately 3.3 g/kg/day - substantially above the general reference ranges in this guide, and not a standard target for runners. It remains a deliberate muscle-gain choice to make with a coach or nutritionist. Mind the carb squeeze on the next page.

a safety note: the published ranges behind this table come from studies of healthy adults who exercise (ISSN 2017; ACSM/AND/DC 2016); the three rows above are our practical reference points within those ranges, not any organization's exact table. Anyone with kidney disease, diabetes or another medical condition should set protein targets with their doctor, not a PDF.

SCALING UP & THE REST OF THE PLATE

Day plan 01 scales without new recipes. Estimates from IFCT 2017 and USDA tables.

TARGET	HOW TO GET THERE
to ~150 g	base day + 1 whey sachet + 2 eggs (Sunday batch) ≈ 151 g protein, ~2,400 kcal
to ~200 g	base day + 2 whey sachets + 50 g extra dry soya + 2 eggs ≈ 202 g protein, ~2,700 kcal - at 60 kg that is ~3.3 g/kg/day, well above the master table: the heavier-athlete or coach-led muscle-gain case, not a standard target

the carb squeeze

Carb needs scale with training (ACSM/IOC): ~3-5 g per kg on light days, 5-7 g for an hour a day, 6-10 g for 1-3 hours. The base day's roughly 250 g of carbs sits in the light-day range for many runners; as training hours build, add carb portions - extra rice, rotis, fruit - around your runs. The protein add-ons above don't automatically cover those training carbs.

fibre and the macro split (estimates)

The base day carries an estimated 35-40 g of fibre from the oats, dal, chana, whole-wheat rotis, sabzi and fruit. ICMR-NIN 2020 guidance is ~15 g per 1,000 kcal, so this day clears it with room. Energy: about 47% carbs, 32% fat, 22% protein (IOM balanced ranges). Fibre for plans 02-04 was not separately audited - expect a similar pattern and let your own labels decide.

BUILD YOUR OWN PLATE

Every meal is a protein anchor + a carb base + veg or fruit + a little fat. Training more? Grow the carb base first. Protein target up? Add an anchor, not a new recipe. Suspect a gap? Check the micronutrients watch-list in part three; if a concern or symptom persists, discuss it with a clinician.

PACKS THAT EARN THEIR PLACE

Three of the six are already lactose free - the lactose page explains. Pack details checked on BigBasket, Zepto, Amul and brand sites, 5 Nov 2026.

PACK	FORMAT	THE HONEST READ
Amul HP Paneer	400 g tin	~25 g per 100 g, shelf-stable 9 months. No setting paneer at home, no daily market run.
Amul HP Buttermilk	200 ml pack	~15 g per pack, no fridge needed, 180-day shelf. About as easy as desk protein gets.
Amul whey sachets	32 g sachet	~25 g per sachet. Single-serve, travels well, no tub commitment - and labelled lactose free.
Provilac HP Milk	250 ml pack	~25 g per pack, fresh, lactose free. Great when the fridge routine works; waste risk when it does not.
Amul HP Milk	250 ml tetrapak	~35 g per pack, lactose free, shelf-stable. Warm it, never boil it.
Pintola HP Muesli	400 g pack	~24 g protein but 17 g sugar per 100 g. A measured pour over curd, not a bottomless bowl.

naming traps, verified: a "Turbo 50 g" yogurt is ~12 g per 100 g - the 50 g is the whole tub. SuperYou Kesar Badam really does deliver ~24 g per 36 g scoop. Alpino HP oats run ~24 g per 100 g, varying by variant. Pack names are marketing; the per-100 g panel is the truth. And protein bars are convenience food, not strategy.

IF MILK TROUBLES YOUR STOMACH

About three in five Indian adults do not fully digest lactose (Lancet 2017 meta-analysis) - that is lactose malabsorption, not the same as symptomatic lactose intolerance. Many people who malabsorb still handle ordinary servings without trouble (NIDDK). It is about dose, not a ban: many handle up to 12 g of lactose - roughly one 250 ml glass of milk - in small servings with meals (NIDDK).

curd usually sits better

Fermentation converts part of the lactose, so curd and chaas are often easier than milk (NIDDK). Tolerance is individual - start small.

paneer: low, not zero

Much of the lactose drains away with the whey when paneer sets, but fresh paneer keeps some. Start with a small serving.

lactose-free milk is real milk

Lactase enzyme splits the milk sugar; protein and calcium stay the same (NIDDK). Amul Lactose Free comes in 250 ml packs: under 0.1% lactose, 6-month shelf. The HP milks on the packs page are labelled lactose free too.

whey: look for a lactose-free label

Isolates generally carry less lactose than concentrates, but it varies by product. The only guarantee is the pack: pick one labelled lactose free and test your tolerance with a small serving.

SWAP, DON'T SCRAP

ITEM	THE SWAP
milk	lactose-free milk or soy milk - check protein per 100 ml on your pack; add soy curd for a fully plant-based jar
curd	often easier than milk; if it still doesn't sit well, soy curd - or extra soya chunks in the meal
paneer	firm tofu, ~17 g protein per 100 g (USDA) and naturally lactose free; softer packs run lower, so read the panel
whey	a sachet labelled lactose free; isolate usually runs lower than concentrate - check the label and your tolerance

the zero-dairy protein drink

Sattu. 30 g stirred into water with lemon and salt gives ~6-7 g protein - mix fresh, drink straight away, no fridge needed. Made with 250 ml soy milk instead, ~14-15 g; treat that one like any milk drink and keep it chilled.

get it checked, don't guess: regular bloating, gas or loose motions after milk? A doctor can confirm it with a simple breath test - don't self-diagnose from a PDF. Lactose-free products are still dairy, and no help for a milk allergy, which is a different condition. If dairy drops out fully, watch calcium and vitamin D: tofu, leafy greens, beans and fortified soy milk (NIDDK).

THE SHOPPING BASKET

No math needed at the shop. Three piles, in the order to fill the basket.

PILE	WHAT GOES IN
1 · the dry base	soya chunks, whole chana and sattu (~22 g protein per 100 g), toor, moong and rajma, peanuts, rolled oats. All dry, all keep for weeks at room temperature, all ordinary kirana-shelf staples. Fills most of the protein.
2 · the fresh staples	eggs by the dozen, milk for homemade curd - or lactose-free packs - plus two shelf-stable shortcuts: HP paneer (400 g tin) and HP buttermilk (no fridge needed).
3 · the convenience corner	fresh HP milk, HP milk tetrapak, whey sachets, HP muesli. For the worst days, when time is short.

the one habit that matters: whatever the pack claims on the front, flip it and read protein per 100 g on the back panel. That one habit beats every marketing name in the aisle.

Pack details checked on BigBasket, Zepto, Amul and brand sites, 5 Nov 2026. Fruit, veg and spice amounts are estimates.

CARB LOADING

The one legal performance boost every marathoner should use - and most Indian runners skip.

WHAT IT IS (AND WHO IT'S FOR)

Your muscles store carbs as glycogen. In a long race, glycogen is the fuel that keeps your pace alive past the 30 km mark. Carb loading - eating 10-12 g of carbohydrate per kg of body weight per day for the last 36-48 hours - pushes those stores well above normal; studies show real performance benefits from loading in events longer than about 90 minutes [1][2]. For anything shorter, your normal stores already cover you. Start after your last real training session, and spread the carbs across 5-6 eating occasions a day - giant single meals are hard to finish.

RACE	LOADING PLAN
5k / 10k	none needed - eat normally; the race-morning meal is enough
half marathon	normal carb-rich eating covers most runners; an extra carb-focused day can help a long or hard race - a full 2-day load is optional
marathon	2 full days (36-48 h) at 10-12 g/kg/day - this is where loading pays off
ultra	2-3 days at the same 10-12 g/kg/day target

CLEAN CARBS - WHAT TO ACTUALLY EAT

"Clean" for loading means low fibre, low fat, easy on the gut: white over brown, peeled over skin-on, cooked over raw, light on oil and masala. These are not the days for brown rice, salads and sprouts - fibre slows absorption and can cause race-morning trouble. This low-fibre pattern is a 36-48 h race tool, not an upgrade on everyday eating: the brown rice, salads and sprouts come back after the medal.

FOOD	SERVING	CARBS	FOOD	CARBS
white rice (cooked)	1 cup / katori	~45 g	chapati (1)	~18 g
potato (boiled, peeled)	1 medium	~30 g	dates (4)	~28 g
banana (ripe)	1 medium	~25 g	jam / honey (1 tbsp)	~15 g
idli	2 pieces	~20 g	fruit juice (1 glass)	~25 g
white bread	2 slices	~30 g	poha / upma, plain (1 plate)	~40 g
sabudana khichdi	1 plate	~45 g	dosa, plain (1)	~30 g

Whatever your diet - veg, eggetarian, non-veg or vegan - the loading foods stay the same staples. Protein (eggs, chicken, dal, paneer) can stay on the plate, just modest, while rice, roti, potato and fruit take the space.

A SAMPLE 2-DAY LOAD

60 kg runner · ~640 g/day (~10.5 g/kg - inside the 10-12 target). Scale the portions to your own weight.

DAY -2

MEAL	CARBS
breakfast: big plate poha + banana + juice	~95 g
mid-morning: 2 bread + jam + milk	~60 g
lunch: 3 cups rice + dal + boiled potato + curd	~185 g
snack: 4 dates + banana + juice	~80 g
dinner: 2.5 cups rice + light sabzi + curd	~140 g
before bed: milk + 1 tbsp honey	~30 g
sips through the day: juice / sports drink	~50 g
day total	**~640 g**

DAY -1 (CLEAN & SIMPLE, LOW FIBRE)

MEAL	CARBS
breakfast: 4 idlis + honey + juice, or white-bread jam + juice	~85 g
mid-morning: banana + sports drink	~50 g
lunch: 3 cups white rice + thin dal + curd (skip heavy sabzi)	~160 g
snack: light sabudana khichdi + dates	~75 g
second snack: 2 bread + jam	~45 g
dinner (early): 2.5 cups rice or 5 chapatis + potato + plain curd	~140 g
before bed: milk + 1 tbsp honey	~30 g
sips through the day: juice / sports drink	~60 g
day total	**~645 g**

Your diet, your plan: veg is the base above. Eggetarian - add 2 boiled eggs at breakfast. Non-veg - a small grilled-chicken or fish portion with rice at lunch. Vegan - soy milk plus extra juice, banana and dates. The carb numbers barely move.

what loading is not: rice, banana, potato, bread, jaggery, juice and dates cover nearly the whole load - ordinary food does this job. And loading is not eating to sickness: if ~640 g feels impossible, start with 8 g/kg and build up across races. A smaller load done comfortably beats a perfect load you can't finish. And loading is a race tool, not a training-week habit - ordinary weeks don't need it.

RACE MORNING

Top off the tank, calm the gut, start hydrated.

WHEN	WHAT
3-4 h out	main pre-race meal: 1-4 g/kg carbs (for 60 kg, ~120 g about 3 h out). Low fibre, low fat, low protein. White bread + jam + banana, or idli + honey. Sip 5-7 ml/kg fluid (300-420 ml).
~1 h out	optional small top-up only if you're used to it: a banana, a few dates, or half a gel (~20-30 g carbs). Skip entirely if your stomach is nervous.
10 min out	a few sips of water or sports drink. That's it - the work is done.

What to avoid: anything fried, very spicy, creamy, or high-fibre; milk-heavy breakfasts if dairy sits heavy for you; and above all, anything you have not eaten before a training run.

early-start reality: Indian races often start at 5-6 am. A 3-hour gap means a 2 am alarm - if that's not happening, eat a smaller version (~1 g/kg) 60-90 minutes out: 2 bread + jam, or 2 idlis + half a banana. A small meal you keep down beats a big one you don't.

fuelling for HYROX / hybrid events

HYROX combines running with demanding functional exercise - fuel for both the endurance and the muscular work. Familiar carbohydrate-rich meals in the 24-48 hours before; a familiar pre-event meal ~3-4 hours out, adjusted to your tolerance; a small carbohydrate top-up closer to the start is optional, not mandatory. Practise in training; nothing unfamiliar on race day [23]. No marathon-length loading needed.

the 4 am race-morning gut & toilet routine

- Wake 2.5-3 hours before the gun (or 90 min for the small breakfast); have your usual morning drink - coffee, chai or water, whatever normally gets things moving for you.
- Give yourself 10-15 unhurried minutes on your feet - easy walking around the room, gentle hip/torso movement, no rushing.
- Rehearse this exact wake-up, drink, breakfast and toilet timing before two Sunday long runs, so race morning is automatic.

DURING THE RACE

Carbs per hour by race length, sodium for the sweat, and the desi fuels that work.

EXERCISE DURATION	GENERAL CARBOHYDRATE REFERENCE	NOTES
under 75 minutes	often little or no carbohydrate is needed during the session	a carb mouth-rinse or a few sips of sports drink can still help the brain [20]
approximately 1-2.5 hours	30-60 g/hour	any carb source works at these rates
longer than ~2.5 hours	progressively build towards 60-90 g/hour where appropriate	needs glucose + fructose together (most gels and sports drinks are blends); start at ~60 g/h and build up across training

Higher carbohydrate intakes require practice and individual tolerance. Practise your race fuelling strategy during training, and check the carbohydrate content of the actual gels, drinks and foods you use - do not assume every product contains the same amount.

why the blend matters

A single carb source absorbs at ~60 g/h max - that's the gut's ceiling, not the muscle's need. Glucose and fructose use different gut transporters, so together they get past the ceiling with less stomach trouble.

FLUID AND SODIUM DURING RUNNING

Fluid and sodium needs vary with sweat rate, sweat sodium concentration, weather, running intensity, duration and individual tolerance - and they are two different dials: fluid is how much you drink, sodium is what is dissolved in it.

A broad starting reference for many endurance sessions is approximately 400-800 ml of fluid per hour, scaled to your sweat test and the weather. It is not a mandatory target - some runners need less, others more in particular conditions. Never drink more than you sweat (hyponatremia, hydration page).

A drink containing approximately 500-700 mg of sodium per litre is one possible starting formulation - not a universal requirement. At that concentration:

FLUID CONSUMED	SODIUM CONSUMED
400 ml	200-280 mg
600 ml	300-420 mg
800 ml	400-560 mg

Hourly sodium intake depends on both drink concentration and the amount consumed, and sweat sodium losses vary considerably between individuals - salty sweaters use the upper end (hydration page). Do not increase fluid intake simply to reach a sodium target: avoid over-drinking, and avoid finishing a session heavier than you started. Unusually high sweat losses or suspected high sweat sodium losses deserve individual assessment from a qualified sports dietitian.

POCKET FUEL

What to carry, what it gives. Mix and match to your hourly target.

CARRY / GRAB	CARBS	NOTES
energy gel (1)	~22-25 g	the standard - take with water
banana (1)	~25 g	gentle on the gut, available everywhere
dates (4)	~28 g	the original desi gel
chikki (1 small piece)	~20-25 g	works, but has fat + fibre - test in training first
glucose biscuits (4)	~20 g	dry - needs water alongside
raisins (small box)	~30 g	easy to portion
jaggery cube	~12-15 g	emergency top-up
sports drink (500 ml)	~30-40 g + sodium	carbs and electrolytes together
nimbu pani, salt + sugar (500 ml)	~25-30 g + sodium	the home-mixed sports drink
cola (200 ml)	~22 g	late-race classic at aid stations

the golden rule of race food: mix and match to your hourly target (60-90 g/h for a marathon): 1 gel + half a bottle of sports drink per hour, or a banana + dates + sips. Anything you race with must be something your gut has already met on long training runs. Race day is never the debut.

THE SHORT-RACE QUESTION: 5K & 10K

Running under ~75 minutes? Here's the honest shopping list: almost nothing.

"I want to run 10k under 60 minutes - what do I eat, carry and load?" Mostly: nothing special. Your glycogen tank holds far more than 75 minutes of hard running - the load menus and gel belts in this guide start mattering only at longer distances [2][3]. Nobody ever carb-loaded their way under 60 minutes in the 10k: the runners who break 60 eat normal dinners, sleep well, and train for months. The gel at km 7 is a security blanket, not fuel.

FOR A 5K/10K UNDER ~75 MIN	VERDICT
carb load (10-12 g/kg menus)	not needed - loading is a tool for events over ~90 minutes [2]
gels / chews / in-race carbs	not needed - the tank you started with is the whole story
electrolyte drinks	not needed on a normal day; food sodium covers a short race
water	drink to thirst; a few sips at the start or a station if it's hot [8]

WHAT TO ACTUALLY DO

- **Night before:** a normal dinner with carbs - dal-rice, roti-sabzi, pasta. No loading menus, no force-feeding [27].
- **Race morning:** light, familiar, low-fibre: 2 idlis, toast + jam, or a banana about 60-90 min out (2-3 h if you eat a full breakfast). Sip ~500 ml of fluid from waking to the start, ideally with a little sodium [27]. A 5:30 am 10k needs no 2 am meal - and running it fasted is fine for most healthy runners.
- **During:** nothing to carry. Water to thirst. On a hot, humid morning a few sips at a station is comfort, not chemistry. Chasing seconds? A carb mouth-rinse (swill and spit) shows a small real benefit in 30-75 min events [20].
- **After:** normal recovery - carbs + protein within a couple of hours. Misal pav counts.

WHEN THE SHORT RACE STOPS BEING SIMPLE

- **Very hot / humid, or you sweat buckets:** add sodium to your bottle (nimbu pani + a pinch of salt works) - salty sweaters, the hydration page applies at any distance.
- **Out there 75+ min (hot-day 10k, hilly 15k):** the 1-2.5 h row of the during-race table now applies - ~30 g/h of carbs is reasonable.
- **Chasing a hard PB:** caffeine 1-3 mg/kg about an hour before the start is legal speed with real evidence [6] - test it in training first.
- **Diabetes, kidney, heart or blood-pressure conditions:** your doctor's plan outranks this page. Fasted racing in particular is not for everyone.

Elite practice matches (practice, not research): Eilish McColgan, European 10k road record holder - pasta/rice with chicken or fish the night before, porridge + berries + banana on race morning, nothing during runs under an hour: "on a race day, I never try anything new" [28].

HYDRATION & THE SWEAT TEST

The single most useful measurement a runner can take at home - one hour, no lab.

THE 1-HOUR SWEAT TEST, STEP BY STEP

1. **Weigh in:** dry, minimal clothes, right before a 1-hour run at race pace. Write it down.
2. **Run:** track exactly how much you drink, in ml.
3. **Weigh out:** towel off, weigh again, same conditions.
4. **Calculate:** sweat rate = (kg lost x 1000 + ml you drank) / hours run. Every 1 kg = 1 litre of sweat.
5. **Repeat in race-like weather:** Pune runners should test on a warm morning, not a cool one.

Example: 60.0 kg before, 59.0 kg after, 500 ml drunk in 1 hour = (1.0 x 1000 + 500) / 1 = 1500 ml/h. Your race fluid plan should replace a good share of that - not all of it. How much exactly depends on your pace, the heat and your stomach, which is why you rehearse it in training. The hard line runs the other way: never drink so much that you finish heavier than you started. Plan first; thirst fine-tunes. And remember what the number is: an estimate of fluid loss under one session's conditions, not an instruction to replace every millilitre while running - a measured 1.5 litres per hour is not an order to drink 1.5 litres per hour. Use it alongside thirst, comfort, body-weight changes and practical fluid tolerance.

AM I A SALTY SWEATER?

White salt lines on clothes or cap brim, sweat that stings your eyes, gritty skin after a run - those are signs of a salty sweater. Sweat sodium varies enormously between people - field data from 30,000+ athlete sweat tests puts the average near ~950 mg per litre with roughly a ten-fold spread, and your number is mostly genetic and stable [21]. Two honest limits. These signs are qualitative: they point at salty sweat but can't give you your exact sodium number - only a lab or patch sweat test can, and most runners don't need one. And the weigh-before/after test above measures how much you sweat (sweat rate), not how salty it is - sweat rate and sodium concentration are two different measurements [9][21]. If the signs describe you, use the upper end of the sodium ranges in this guide.

the danger nobody warns runners about: hyponatremia. Drinking far more plain water than you sweat dilutes blood sodium. Mild cases cause nausea, headache, confusion; severe cases are life-threatening. It is more common in slower runners drinking at every station "to be safe". Prevention is mostly about not over-drinking: know your sweat rate, drink to plan or to thirst, and never force-drink beyond your losses - sodium in your bottle does not make continued over-drinking safe [8]. And severe headache, confusion or vomiting during an event is not a self-treat moment: stop and get urgent medical assessment.

EVERYDAY HYDRATION

Daily hydration needs vary with body size, activity, climate, food intake and individual physiology - there is no single daily water target that suits every runner. Drink regularly through the day, watch thirst and urine patterns (pale-yellow is a decent check), and expect needs to rise in hot weather and higher training loads.

RECOVERY

The race isn't over at the finish line - the next training block starts with what you eat in the first hours.

THE FIRST HOURS

WHAT	TARGET	60 KG EXAMPLE
carbs	rapid turnaround (another hard session within ~8 h): ~1.0-1.2 g/kg per hour for the first few hours [7]. Otherwise: a proper carb-rich meal soon, then normal eating across the day	rapid: ~60-72 g/h
protein	~0.25-0.3 g/kg with the carbs	~15-18 g
fluid	~1.25-1.5 litres per kg of body mass lost, sipped gradually over the recovery period, with sodium through suitable drinks or food	lost 2 kg = ~2.5-3 L over the day

The hourly carb number is the rapid-recovery protocol - it matters when the next hard session is close, not after an ordinary Sunday run with an easy Monday ahead. The rehydration reference works the same way: most relevant when rapid recovery is needed or fluid losses were substantial, not a compulsory prescription after every ordinary training session. Carbs refill glycogen fastest in the first hours after hard exercise; protein repairs muscle. Together is better than either alone - and the sodium matters because without it you pee out much of what you drink.

INDIAN RECOVERY PLATES

- dal-rice + curd + banana
- curd-rice + potato + buttermilk
- egg bhurji + 2-3 rotis + milk
- rajma-rice + lassi
- chicken curry + rice + nimbu pani
- soy-chunk pulao + soy or peanut curd (vegan)
- a glass of milk or soy milk + dates, if a full meal won't go down yet

THE NEXT DAY

Keep eating normally with plenty of carbs; appetite often lags while recovery demand stays high for 24-48 hours. Gentle walking helps stiffness. Sleep is the most powerful recovery tool you own - no supplement outperforms it. Eliud Kipchoge sleeps about 10 hours a day in heavy blocks (eight at night plus two by day), and NN Running Team coach Addy Ruiter says the 10-hour rule is common among elite marathoners [25]. Your version: guard the 8 at night first.

CAFFEINE

The legal performance aid already in your kitchen.

Caffeine reliably improves endurance performance: it reduces how hard the effort feels and helps you hold pace late in a race. The studied range is 3-6 mg per kg of body weight, about 60 minutes before the start - but benefits show from much less and tend to plateau around 3 mg/kg [6]. Start at 1-3 mg/kg: for a 60 kg runner that's 60-180 mg, roughly 1-2 strong coffees. Chai counts too, but its caffeine varies a lot with the tea and the brew, so treat cup counts as rough. Some runners add a small top-up (a caffeinated gel or cola) in the second half of a marathon.

SOURCE	APPROX CAFFEINE
filter coffee / strong coffee (1 cup)	~80-120 mg
instant coffee (1 cup)	~60-80 mg
strong chai (1 cup)	~40-60 mg
cola (330 ml)	~35 mg
caffeinated gel	25-50 mg (check the label)

honest edges: skip it if caffeine makes you jittery, gives you palpitations, wrecks your sleep, or you rarely take it - the gains aren't worth a ruined race. Never try caffeine for the first time on race day. More is not better: beyond ~6 mg/kg, side effects climb and benefits don't.

SUPPLEMENTS, GRADED

Honest grades, informed by the Australian Institute of Sport's framework.

A · SOLID EVIDENCE, WORTH CONSIDERING

SUPPLEMENT	WHAT IT DOES	NOTES
sports drinks / gels / electrolytes	deliver carbs, fluid, sodium	fuel tools, not magic - food versions work too (see pocket fuel)
caffeine	endurance performance	1-3 mg/kg to start (studied range 3-6), ~60 min pre-race; coffee/chai count
iron	only if a blood test shows deficiency	never self-prescribe; excess iron is harmful
vitamin D	bone/immune health if deficient	common in India even with sun; test first

B · REAL, BUT SCENARIO-SPECIFIC

SUPPLEMENT	HONEST READ
beetroot juice / nitrate	small endurance gains in some studies, more in recreational runners than elites. The dose that matters is nitrate (~5-9 mmol), not a fixed juice volume - products vary. Food first: beetroot is a vegetable, you can just eat it.
beta-alanine	helps 1-4 minute maximal efforts (800m-1500m type work); little reason for distance runners.
creatine	genuinely effective for gym strength and sprint/power - not a distance-running supplement. Fine for your gym days; expect a little water-weight gain.
sodium bicarbonate	can help short, hard efforts - with real risk of stomach distress, so rehearse it or skip it. Not for marathons, and not without your doctor's okay with kidney or blood-pressure issues.
collagen + vitamin C	early evidence for tendon/ligament support; plausible, not proven.

WHAT TO SKIP

The C grade - marketing ahead of evidence.

C · SKIP THESE

SUPPLEMENT	WHY NOT
BCAA / amino blends	if you eat enough protein, you already get these.
glutamine (for performance)	evidence for performance benefit is weak.
"fat burner" products	no meaningful effect, real side-effect risk, sometimes contaminated.
antioxidant megadoses (vit C/E pills)	high doses may actually blunt training adaptation. Fruit covers you.
testosterone "boosters"	don't work as marketed; contamination risk with actual banned substances.
most "superfood" powders	the whole foods they imitate do the job better.

The best supplement stack is still boring: dal, eggs, milk, bananas and sleep.

one more safety line: supplements in India are loosely regulated, and contamination happens. If you ever compete in tested events, use only batch-tested products (look for Informed Sport / NSF Certified for Sport) - certification cuts contamination risk; it doesn't prove a supplement works or that you need it. Food first, always.

SPECIAL SITUATIONS

Bodies differ. Here's the honest, research-based read for the situations Indian runners actually ask about.

WOMEN RUNNERS

- Same fuelling formulas apply; targets scale with body weight, so absolute numbers are often smaller - not the percentages.
- Iron matters more: periods raise iron loss, and distance running adds to it. Tired-all-the-time + slowing times deserve a ferritin blood test, not another supplement guess.
- Watch the REDs signs: missed or irregular periods while training hard is a signal to eat more and see a doctor, not a badge of discipline.
- Protein at the upper end (1.6 g/kg) supports masters women especially.

MASTERS RUNNERS (40+)

- Muscle holds less easily with age - aim for the top of the protein range (1.6 g/kg, some research says up to 1.8) and spread it across the day; ~30-40 g per meal.
- The recovery chapter applies double: the post-run carbs + protein window and sleep matter more each decade.
- If your doctor orders blood work, vitamin D and B12 are worth adding to the panel.

TEEN RUNNERS

- Growing athletes need MORE food, not restriction. No calorie cutting, no carb fear, no supplements beyond food and a doctor's advice.
- The patterns in this guide (regular meals, carbs around runs, milk/curd/dal/eggs) are exactly right; calorie floors don't apply - teens shouldn't count at all without a professional.

FASTING, MEDICAL CONDITIONS, PUNE WEATHER

FASTED RUNS, FASTING FESTIVALS & RAMADAN

- Easy 30-60 min runs can be done fasted if you feel fine; performance in anything hard or long suffers, so don't race or do long runs truly empty.
- Training through Ramadan: shift hard runs to after iftar when possible, front-load fluids and sodium between iftar and suhoor, keep suhoor carb-rich (oats, roti, banana, dates, milk) - dates at suhoor are genuinely ideal fuel.
- Ekadashi-style one-day fasts: treat as a rest or easy day, and rehydrate properly after.

fasted training, honestly: fasted training is not necessary for improving endurance performance, and it may be unsuitable during demanding sessions, high-volume training blocks or periods of inadequate energy intake. Do not use fasted training as a weight-loss shortcut. If you have a history of disordered eating, low energy availability or a relevant medical condition, seek professional guidance before experimenting with it.

MEDICAL CONDITIONS

Diabetes, thyroid conditions, blood pressure, kidney issues, celiac, pregnancy: this guide is not written for you directly. The principles still stand, but the numbers must come from your doctor or a registered dietitian who knows your reports. Bring this guide to that conversation.

HEAT & MONSOON (THE PUNE CHAPTER)

- Hot & humid days can double sweat rate - redo your sweat test when the season changes.
- Pre-hydrate on hot race mornings; add sodium on any run over an hour in heat.
- Monsoon: less sweat doesn't mean no sweat - humid air still drives losses. Don't skip fluids just because it's raining.
- Signs to stop: dizziness, chills, confusion, cramps that won't settle. Shade, fluids, help.

RACE WEEK, STEP BY STEP

The whole guide, compressed into the last 7 days. Screenshot this page.

WHEN	DO THIS
race -6 to -4	eat normally. Taper is running less, not eating less - you gain nothing by cutting food while mileage drops. Stay hydrated, nothing exotic.
race -3	start shifting the plate: more rice/roti/potato/bread, a bit less heavy protein and fried food. Begin sipping through the day.
race -2	full carb load day 1 (10-12 g/kg). Pack your race kit: gels/dates/chikki you trained with, salt/electrolytes, bib, pins, watch.
race -1	load day 2, low fibre. Early, simple dinner. Lay out everything. Nothing new, nothing spicy, no alcohol. Normal water intake - no force-chugging.
race morning	your practised breakfast 3 h out (or the small 1 h version). Sips till the start. Toilet plan executed. Caffeine only if usual.
during	your rehearsed per-hour plan: carbs from the first hour, sodium in the heat, never over-drink. Walk aid stations if needed - 20 seconds of walking beats 20 minutes of stomach war.
after	carbs + protein within the first hours, fluids with sodium, then a proper meal. Celebrate - you earned the misal.

the checklist

gels/fuel counted · electrolytes · bib + pins · watch charged · breakfast planned · transport sorted · alarm x2 · a throwaway layer for cold starts · your crew's meeting point.

racing away from home? Carry your race-morning foods with you (bread, jam, bananas, idlis travel fine) and don't experiment with the local specialty the night before; it will still be there after the medal. The full away-race timeline, what to order where, food safety and the food-bag packing list are on the next pages.

WHEN YOUR GUT FIGHTS BACK

Stitches, nausea and emergency toilet stops - the unglamorous chapter everyone needs.

PROBLEM	LIKELY CAUSE	FIX
side stitch	big meal too close to the start; weak pacing early	finish eating 3 h out; slow down, exhale hard, press the spot; fades with fitness
nausea mid-race	too much sugar at once, concentrated gels without water, over-drinking	smaller doses more often; always water with gels; slow fluid intake to plan
runner's trots	high fibre/fat the day before, caffeine on a nervous stomach, race nerves	low-fibre day -1, test caffeine in training, morning routine at home, know the route toilets
bloated, sloshing stomach	drinking faster than you absorb	you're over the sweat rate - back off, add sodium, sip don't chug
can't eat after hard runs	normal - blood flow is still with the muscles	liquid first (milk, lassi, smoothie), solid meal an hour later

the long-term fix: gut training. Practise eating and drinking at race intensity on long runs, starting small (30 g/h) and building up over weeks. The gut adapts like any other part of you - the masterclass is in part three.

MYTHS, BUSTED

- **"keto / low-carb makes you a better fat-burning runner"** - you do burn more fat... and lose top-end pace. Studies show low-carb adaptation impairs the high-intensity gears racing needs. Carbs are not the enemy.
- **"fasted cardio burns more fat, so it's better"** - it burns more fat during the session and roughly nothing more over the day. Harder sessions done fuelled beat soft sessions done empty.
- **"protein must be taken within 30 minutes"** - the window is hours wide. Total daily protein is what matters.
- **"more supplements = more serious runner"** - the strongest predictor is still boring: sleep, consistency, enough food.
- **"electrolytes prevent all cramps"** - most cramps are fatigue and pacing, not sodium. Electrolytes help heavy salty sweaters; they don't make you cramp-proof.
- **"you must drink before you're thirsty"** - old advice, now reversed: forced over-drinking is the hyponatremia risk. Plan or thirst, both beat chugging.

EATING OUT, AIRPORTS & RACE TOWNS

What to order, wherever the week (or the race) takes you - everyday picks, plus the loading-window version.

WHERE	EVERYDAY ORDER	LOADING WINDOW (FINAL 24-48 H)
office canteen	dal-rice, idli, chapati-sabzi, curd-rice	extra rice, curd, banana; skip the fried side
south indian	idli, plain dosa, uttapam, curd rice	idli + extra idli, plain dosa; skip vada and spicy podi
thali place	roti/rice + dal + light sabzi + curd	ask for extra rice; skip papad, heavy gravies, the sweet-but-one
cafes	egg/paneer sandwich, toast, pancakes, smoothie	jam toast, banana smoothie, juice; skip creamy pasta and oily bakes
roadside / dhaba	tawa roti + dal + jeera rice, fresh and hot	same, plus boiled potato if they have it; skip butter-fried everything
airport	idli/dosa counter, sandwich, banana, juice	bread-jam, rice bowl, juice; your packed snacks win here
railway station	hot idli from a busy stall, platform bananas, sealed water	same - busy stall, hot food, sealed bottle. That's the whole rule
hotel buffet	idli, bread-jam, banana, boiled eggs, curd, rice-dal	rice + potato + bread + juice; go light on salads (fibre) and rich desserts
near the race venue	plain rice-dal, khichdi, curd-rice - boring on purpose	same. The local specialty will still be there after the medal

the loading-window rule, without confusion: picking lower fibre, fat and spice for 24-48 h (white rice over brown, peeled potato, ripe banana, plain over masala) is a short race tool for a calm gut - it does not make these foods "healthier" for everyday eating.

food safety on the road: hot and freshly cooked beats cold buffet; sealed bottled water, skip ice; fruit you peel yourself; a busy stall beats an empty pretty one. If a place feels doubtful, packaged food plus your own packed snacks wins. A stomach bug is the one race-weekend souvenir you don't want.

RACING AWAY FROM HOME

The outstation race, hour by hour - plus the food bag to pack.

WHEN	DO THIS
journey day	eat normal, familiar food; sip water through the trip; snack from your own bag; nothing experimental "because we're on a trip".
check-in	scout the hotel breakfast timing (and whether it opens early enough on race day); find one rice-dal place near the stay for load-day meals; ask for a kettle/fridge if you need one.
race -2	load day 1, 10-12 g/kg - with foods your gut knows. Hotel buffet + your packed snacks cover most of it.
race -1	load day 2, low fibre; early, simple dinner; lay out kit; normal water, no force-chugging; nothing new, nothing spicy.
race morning	your packed, practised breakfast 3 h out in the room - this is why you carried it. Sips till the start. Toilet plan before leaving the hotel.
during	your rehearsed per-hour plan; aid-station drinks count toward it; walk stations if needed.
after	carbs + protein within the first hours (the snack in your bag bridges to a real meal), fluids with sodium, then go eat the local specialty - you've earned it now.

THE FOOD BAG (PACK THIS)

- race fuel you trained with - gels / dates / chikki, counted per hour + 1-2 spares
- electrolytes / salt - sachets, tablets or a small labelled box
- race-morning kit: bread + jam, or oats + a banana (idlis and thepla travel well too)
- journey snacks: bananas, sandwiches, roasted chana, biscuits
- small tiffin with salt + sugar (emergency homemade ORS - for illness-related dehydration, not a race sports drink: 1 litre water + 6 level tsp sugar + 1/2 level tsp salt; use packaged ORS when available, and discard homemade mix after 24 h)
- water bottle for sips; ziplock bags keep all of it organised and dry

away race coming up? Someone at r/punerunners has probably run it - ask about the course, the food near the venue and where the toilets are. This is what the club is for.

LEVEL UP

HOW FUEL BECOMES PACE

The physiology underneath every recommendation in this guide.

YOUR TWO FUEL TANKS

You run on a mix of fat and carbohydrate (stored as glycogen in muscle and liver). Fat supply is huge - even lean runners carry days' worth - but burning it fast is hard: it delivers energy slowly. Carbs are the high-octane tank: limited (roughly 400-600 g stored), but able to fuel fast running. The mix shifts with intensity: easy jogging is fat-dominant; as pace rises toward race effort, carbs take over. This is why "just burn fat" fails at race pace - you cannot burn fat fast enough to run your best marathon.

TANK	SIZE	USED FOR	RUNS OUT?
fat	enormous	easy pace, daily life, ultra shuffle	practically never
muscle glycogen	~300-500 g	threshold and race pace	~90-120 min of hard running
liver glycogen	~80-100 g	keeps blood sugar steady for brain + muscles	overnight / long races

THE BONK, EXPLAINED PROPERLY

"Hitting the wall" is glycogen running low. Low muscle glycogen limits the pace you can sustain; low liver glycogen can impair blood glucose, contributing to the fatigue. Carb availability is one factor, not the whole story. In-race carbs exist to defend blood glucose, not just to feed muscles. This is why eating from the first hour works and eating when you feel bad is too late.

HOW THE GUT BECOMES THE BOTTLENECK

In long races the limit often isn't your legs - it's absorption. Glucose enters blood through the SGLT1 transporter, which saturates near 60 g/hour; fructose uses a different door (GLUT5). Together they clear ~90 g/h. Fluid absorption also depends on drink concentration: very sugary drinks empty slowly from the stomach (that sloshy feeling), which is why sports drinks sit at 4-8% carbs and why you always take gels with water.

why this matters

Carb loading (bigger tank), in-race fueling (defending blood sugar), sodium (absorption + thirst), gut training (raising the bottleneck) - every rule in this guide is one of these four mechanisms. Understand the mechanisms and you can improvise correctly when plans meet reality.

LEVEL UP

MICRONUTRIENTS FOR RUNNERS

The small stuff that quietly decides how the big stuff feels. Everyday-kitchen gaps and runner-specific needs, one table.

NUTRIENT	WHY RUNNERS CARE	INDIAN FOOD SOURCES	SMART MOVE
iron	carries oxygen; low ferritin = tired, slow, breathless	heme: chicken, fish, eggs. Non-heme: spinach, dal, chana, jaggery, til	pair non-heme iron with vitamin C (nimbu on dal, guava, amla); keep chai/coffee an hour away from iron-rich meals; test ferritin if tiredness persists
vitamin D + calcium	bone strength; low levels link to stress fractures	D: sunlight + fortified milk. Calcium: milk, curd, paneer, ragi, til	curd daily; ragi dosa is a runner's friend; indoor desk workers can run low even with sun - a doctor can test before you supplement
B12	red blood cells, nerves; veg runners run low	milk, curd, eggs; fortified foods	include dairy daily; the egg-free plan is the one to watch; fully vegan days need a fortified food or supplement
omega-3	no plant staple here is rich in it	flaxseed, walnuts	1 tbsp ground flaxseed or a few walnuts in the oats jar
iodine	thyroid function; matters more if soya becomes a daily anchor	iodized salt	coverage depends on how much you use and its iodine content
potassium	fluid balance inside cells, muscle function	banana, potato, coconut water, dal	normal food covers it; coconut water is a natural potassium drink - but it is low in sodium, so it can't stand in for a sodium drink on long sweaty runs
magnesium	muscle function, sleep, energy metabolism	nuts, seeds, whole grains, banana, dark greens	a handful of nuts daily beats a pill
zinc	immunity, recovery	dal, chana, nuts, seeds, eggs, dairy	covered by a varied Indian plate

the pattern: runners usually don't have a supplement deficiency - they have a testing deficiency. If you suspect a gap - or unusual fatigue shows up - a doctor can run the right tests (ferritin, B12, vitamin D and the like) before you supplement, and tell you which row of this table actually applies. Treat the report, not the internet. These are gaps a typical Indian vegetarian diet tends to have, not a verdict on anyone's health.

LEVEL UP

GUT TRAINING MASTERCLASS

The 4-week progression that turns race fueling from stomach-war into routine.

Your gut is trainable like your legs: regular carb intake during running increases absorption capacity and tolerance. Elite athletes taking 90-120 g/h didn't start there - they built up over months. Here's the build.

WEEK	TARGET ON LONG RUNS	HOW
1	30 g/h	1 gel or a banana or 4 dates per hour, always with water. Note how the stomach feels at each dose.
2	40-50 g/h	split into 2 doses per hour, 20-30 min apart - smaller hits absorb kinder.
3	60 g/h	introduce a glucose+fructose product (most gels/drinks) - blends are required past 60.
4	60-75 g/h, at race pace	rehearse the exact race plan: same products, same timing, same breakfast, same wake-up time.

- **Concentration rules:** drinks above ~8% carbs empty slowly - sloshing means dilute it or slow down the intake.
- **Practise the whole morning:** breakfast, timing, caffeine, kit - not just the gels.
- **Trouble signs to adjust, not abandon:** nausea = smaller, more frequent doses; sloshing = too much fluid; cramps = usually pacing, not fuel.
- **Off-season:** gut capacity fades - rebuild before each race block rather than assuming last season's tolerance.

LEVEL UP · EXPERT

PERIODISING YOUR CARBS

Eating like a program, not a habit - match the fuel to the work.

The modern framework is called "fuel for the work required" [16]: carbohydrate is not a fixed daily religion, it scales with the session. Hard days are high-carb days. Easy days are moderate. This is how elite programs eat, and it asks nothing extra - just timing.

DAY TYPE	CARBS	WHAT THAT LOOKS LIKE
rest / very easy	3-5 g/kg	normal Indian plate, grains at each meal, no forcing
moderate (45-75 min)	5-7 g/kg	add a carb serving at breakfast and the pre-run meal
quality (intervals, tempo)	6-8 g/kg, carbs before + after	never run key sessions low - quality needs glycogen
long run (90 min+)	7-10 g/kg + in-run fueling	practise race fueling here (gut training page)
race week	taper volume, load last 36-48 h at 10-12 g/kg	the carb-loading chapter does the math

"TRAIN LOW" - THE HONEST VERSION

Doing some easy sessions with low glycogen (e.g. morning run before breakfast) can amplify cellular training adaptations [16]. But the performance evidence is weak, and the risks are real: worse session quality, higher illness and injury risk, and a slide into chronic under-fueling (REDs) [11]. If you experiment: keep it to occasional easy sessions, never key workouts, never race week, and stop if you feel flat for days.

AND KETO / LOW-CARB FOR RACING?

Adaptation to a ketogenic diet massively raises fat burning - and still made elite race walkers slower in a controlled study, because fat burning costs more oxygen at race pace and it negated their training gains [13]. Verdict: fine as a personal diet choice, a proven disadvantage for racing your fastest.

the 80% version: eat carbs around hard and long sessions, eat normally otherwise, never diet aggressively while training hard. That alone beats 95% of "optimised" diets.

LEVEL UP · EXPERT

SUPPLEMENT PROTOCOLS, PROPERLY

The few with real evidence, at the doses the studies actually used. The graded shelf is in part two; this page is the how for the AIS "Group A" list [5][17]. None of these outrun a bad diet; each is a 1-3% edge.

SUPPLEMENT	PROTOCOL USED IN RESEARCH	WATCH OUT
caffeine [6][17]	1-3 mg/kg to start (studied range 3-6), ~60 min pre-race (60 kg: 60-180 mg to start)	response varies genetically; more is not better (jitters, gut upset); daily heavy use blunts sensitivity and steals sleep, which costs more than caffeine gives
nitrate (beetroot juice) [5][17]	~5-9 mmol nitrate (~310-560 mg) 2-3 h before; daily for 3+ days works better than once	antibacterial mouthwash kills the effect (oral bacteria convert nitrate); benefits shrink in highly trained athletes; turns urine pink, which is harmless and alarming
sodium bicarbonate [5][17]	0.2-0.4 g/kg, 60-150 min pre, split doses with food	GI distress is common - rehearse in training or skip; mainly helps hard 1-10 min efforts, less for steady road races
beta-alanine [5][17]	3.2-6.4 g/day for 4+ weeks (not a race-day pill)	tingling (paresthesia) is harmless; targets 1-4 min max efforts - useful for milers, mostly decorative for marathoners
creatine [5][17]	3-5 g/day, any time (loading: 20 g/day split x 5-7 days, optional)	often adds ~1-2 kg water/muscle (varies) - great for the gym block, counterproductive right before a race you carry your weight through

- Test everything in training - the golden rule applies double to bicarbonate.
- Contamination is real: supplements can carry banned or undeclared substances [17]. If you compete, choose third-party-tested products (Informed Sport or similar); if a brand hides its testing, that is your answer.
- Vitamins/minerals only fix a measured deficiency - more is not faster, and iron without a blood test can do harm.

the order of operations, honestly

Sleep 8 hours > eat enough > train consistently > carbs around hard sessions > caffeine > everything else on this page. Supplements are the garnish, never the meal.

LEVEL UP · EXPERT

ULTRAS, HEAT & THE MONSOON

When the race is 4+ hours, or the weather is the real opponent.

ULTRA DISTANCE: FUELING IS THE EVENT

- Start eating in the first 30-45 min and never stop: 40-90 g/h by gut training, front-loaded - races are lost to fueling debt you cannot repay later.
- Mix food types: gels early, real food (potato, banana, sandwich, upma) as hours pass, something savoury by hour 3-4 - sweet fatigue is the top reason ultra runners stop eating.
- The Ironman version of the same rule: triathlon coaches feed every 15-20 min on the bike with real food - rice cakes, jam sandwiches, mashed banana - precisely to beat flavour fatigue [24].
- Caffeine is a late-race tool: hold it for the final third, when it does the most [6].
- Sodium matters more with duration: 300-600 mg/h (salty sweaters higher) from drink + food, especially in heat - but more water is not more safety: drinking beyond thirst/sweat rate causes hyponatremia, the dangerous one [8].

RACING IN INDIAN HEAT & HUMIDITY

- Acclimatise: 10-14 days of training in the heat raises plasma volume and earlier sweating - the single biggest heat adaptation available, and it asks no equipment.
- Humidity changes the math: when sweat can't evaporate, you overheat without losing as much fluid. Drink to your plan, but accept the pace the heat assigns - heart rate and effort over the watch.
- Pre-cool and mid-cool: cold drinks, ice in the cap/bandana, sponge stations. Small, real, simple.
- Adjust targets: a hot day can add minutes. Racing a PB plan in 32 °C humidity is how DNFs are made.

race director brain: at your event's aid stations, practise with what they'll serve or carry your own - "what's on the course" is a fueling variable like any other. And tell someone your plan: ultras reward boring, careful people.

LEVEL UP

THREE RUNNERS, THREE PLANS

The whole method applied, start to finish, on three very different people.

runner A · 50 kg, 24F, first 10k, veg, light training

BMR = 10x50 + 6.25x160 - 5x24 - 161 = 1219 · x 1.45 ≈ 1770 kcal to maintain. Protein 60-80 g (dal, paneer, curd, soy daily). Carbs ~4 g/kg (~200 g) on light weeks, more on bigger days. Race plan: no loading, no in-race fuel - breakfast (2 idlis + half banana) 2 h out, water at the start, normal food after. Ferritin + B12 checked if energy dips - veg runners run low, a doctor confirms. Supplements: none needed.

runner B · 70 kg, 32M, runs 4x + gym 3x, wants fat loss, eggetarian

BMR = 10x70 + 6.25x175 - 5x32 + 5 = 1638 · x 1.6 ≈ 2620 · minus 400 ≈ 2220 kcal/day. Protein high end: 1.6 g/kg = 112 g (eggs daily + paneer/soy/curd, protein around gym). Carbs ~4.6 g/kg (320 g) centered around runs. Creatine fine for his gym blocks. Slow loss: ~0.3-0.5 kg/week - faster would cost muscle and run quality. Eating out: the boiled-egg rule.

runner C · 65 kg, 38M, marathon 4:00 goal, hot race, salty sweater

Load: 65 x 10-12 = 650-780 g/day for 2 days, low fibre on day -1. Race morning: ~130 g carbs 3 h out + ~350-450 ml fluid. During: build to 70-90 g/h glucose+fructose (gut-trained), fluid 500-800 ml/h from his sweat test, sodium ~400-560 mg/h via drink + salt (~0.7 g per litre of his fluid). Caffeine 3 mg/kg ≈ 200 mg an hour out, if usual. Recovery: a carb + protein meal within the hour; the rapid 1.0-1.2 g/kg/h protocol matters for back-to-back hard days, not after race day. Fluids ~1.5x losses with sodium - misal earned.

notice: same formulas, three completely different plates. That's the entire skill - and now you have it.

REFERENCE

THE GLOSSARY

Sound like you know what you're talking about (because now you do).

TERM	PLAIN MEANING
glycogen	stored carbohydrate in muscle and liver - the high-octane tank
carb loading	deliberately overfilling the tank (10-12 g/kg/day, 36-48 h) before long races
BMR / TDEE	resting burn / total daily burn including life and training
energy availability	food energy left for your body after training costs are subtracted; chronically low = REDs
REDs	relative energy deficiency in sport - under-fuelling syndrome: stalled performance, illness, hormonal disruption
osmolality	how concentrated a drink is; too concentrated empties slowly (sloshing)
glucose : fructose	two carb types absorbed through different gut transporters; blends beat the ~60 g/h single-source ceiling
sodium / electrolytes	salts lost in sweat; sodium drives thirst, absorption and fluid retention
hyponatremia	dangerously diluted blood sodium from over-drinking; worse than dehydration
sweat rate	litres of sweat per hour - your personal fluid-loss number, from the 1-hour test
ferritin	iron storage marker; low = fatigue and slow times long before anemia shows
glycemic index	how fast a food raises blood sugar; useful around races, overrated elsewhere
gut training	progressively practising in-run eating to raise absorption and tolerance
periodisation	matching food to the training cycle - eat most on the biggest training days
anabolic window	the mythologised 30-minute post-gym protein deadline; reality: hours wide, daily total wins

REFERENCE

COMMON MISTAKES

Seven ways runners sabotage good training with avoidable food errors.

1. **Under-fuelling long runs** - training your gut is part of training; eat on runs over 90 minutes.
2. **Trying new food on race day** - the golden rule exists because everyone breaks it once.
3. **Over-drinking plain water** - hyponatremia is more dangerous than mild dehydration.
4. **Carb loading for a 5k** - pointless. Loading is for 90+ minute races.
5. **Copying elite intakes** - elites taking 100-120 g/h are gut-trained for years; build up slowly from 30-60.
6. **Cutting food hard while training hard** - the fastest way to get slower, sick or injured.
7. **Skipping recovery food because "I'm not hungry"** - appetite lags, recovery doesn't wait.

one honest close: if you've read this far you know more applied sports nutrition than most people handing out advice online. Use it well, share it freely, and when someone's case is medical - send them to a registered dietitian. Knowing the edges of what you know is the actual expertise.

REFERENCE · NUMBERS APPENDIX

EVERY NUMBER, ONE PAGE

Every formula the calculator uses, with a worked example - check us by hand. Worked example: 60 kg runner, marathon in 4:30, hot & humid, salty sweater. Every number is a starting range from research, not a prescription - for a personal plan, a registered sports dietitian is the professional.

STEP	FORMULA	WORKED EXAMPLE
daily calories	BMR (Mifflin-St Jeor) x activity factor (1.4-1.9), then goal: -300 to -500 (lose) / 0 (perform) / +200-300 (build)	1528 (60 kg, 170 cm, 28 M) x 1.6 ≈ 2450 kcal to maintain
protein	master table: 1.2-1.6 recreational · 1.4-1.8 run + strength · 1.6-2.0 strength focus	72-96 g/day recreational
carb load	weight x 10-12 g/kg/day, last 36-48 h	60 x 10-12 = 600-720 g/day
race-morning meal	1-4 g/kg, 1-4 h before	~2 g/kg at 3 h out ≈ 120 g
pre-race fluid	5-7 ml/kg with the meal	300-420 ml
in-race carbs	<75 min: little/none · ~1-2.5 h: 30-60 g/h · >~2.5 h: build towards 60-90 g/h where appropriate	4:30 race = 60-90 g/h, gut-trained
sweat rate	((weight before - weight after) x 1000 + ml drunk) / hours	(1.0 x 1000 + 500)/1 = 1500 ml/h
race fluid	400-800 ml/h, scaled by sweat test, never above sweat rate	hot day = 500-800 ml/h
sodium	~500-700 mg per litre of drink is one starting formulation; hourly intake = concentration x amount drunk; salty sweaters aim higher	600 ml/h at 500-700 mg/L = 300-420 mg/h
caffeine	1-3 mg/kg to start (studied 3-6), ~60 min before	60-180 mg to start; most runners stay at or under ~180 mg
recovery	rapid turnaround (<8 h to next hard session): 1.0-1.2 g/kg carbs/h + 0.25-0.3 g/kg protein early; fluid ~1.25-1.5x losses with sodium	~60-72 g carbs/h + ~15-18 g protein (rapid days)

THE KITCHEN NUMBERS

DAY PLAN	PROTEIN	CALORIES
01 · veg + eggs, whole foods (+39 g fibre)	~114 g	~2,125 kcal
02 · pure vegetarian, no eggs	~120 g	~2,150 kcal
03 · the convenience stack	~130 g	~1,950 kcal
04 · hard training day	~128 g	~2,350 kcal
scaled to ~150 g (base + sachet + eggs)	~151 g	~2,400 kcal
scaled to ~200 g (coach-led)	~202 g	~2,700 kcal

SOURCES

RESEARCH SOURCES

Peer-reviewed and position-stand sources. Every load-bearing number in this guide traces here.

Evidence and professional guidance: this guide combines established sports-nutrition recommendations with practical food examples and coaching-oriented suggestions. Throughout, we distinguish between evidence-based sports-nutrition recommendations (this page), professional organisation guidance, practical examples and suggested meal structures, and individual coaching recommendations (the practice sources, next page). A practical example is never presented as a universal scientific requirement.

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- **Food composition:** IFCT 2017, National Institute of Nutrition · USDA FoodData Central · product pack labels via BigBasket and Zepto (checked 5 Nov 2026) · cooked-rice safety, University of Maine Extension.
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- **Pack labels:** Nutrela, Pintola, Epigamia, Amul, roasted chana and toor dal packs on BigBasket and Zepto · Provilac (provilac.in) · Amul HP range on amul.com · SuperYou (superyou.in) · Alpino (alpino.store).

the fine print: macros from IFCT 2017, USDA and product labels; brands vary - treat totals as approximate. Fibre figures are estimates from the same tables. Day totals are the sums of the listed meal rows. This guide is general education, not medical advice; your doctor and a registered sports dietitian can personalise it to your health, blood work and goals.

from your friends at PuneRunners

PuneRunners is a free community of Pune runners - every pace, every distance, every body. No fees, no forms, no gatekeeping: show up, run, belong.

Find the WhatsApp community, the Strava club, r/punerunners and @punerunnersclub on Instagram - all linked at punerunners.com.

Pair this guide with its sibling, the Runner's Workout Guide (week templates, running plans, strength lanes), and the free fuel calculator - both at punerunners.com.

The Runner's Fuel & Nutrition Guide is general education for healthy adults, not medical advice, diagnosis, or treatment. Consult a doctor or registered dietitian before changing how you eat if you have any medical condition, are pregnant, or have a history of disordered eating. Research and practice sources are listed and labelled separately. Free forever - share it with a runner who needs it.

November 2026 revision: vegan recovery-plate label corrected; the bonk explanation now covers muscle and liver glycogen; weigh-once dry-vs-cooked guidance added to day plan 01; a 4 am race-morning gut routine added to race morning. Earlier November 2026 revisions: one master protein table used across both guides; calorie, hydration, sodium, sweat-rate, recovery and race-carbohydrate guidance clarified with dose context; fasted-training caution added; meal plans labelled as examples; HYROX fuelling aligned with general running guidance; evidence-transparency note added to sources; the original 32-page Runner's Fuel Guide consolidated with the 100g Protein Kitchen Guide - four audited day plans, anchor kit, weekly rhythm, lactose-free swaps, shopping basket and scaling math added; kitchen gaps merged into the micronutrients page; money references and the Jain diet branch removed; fibre audit labelled per plan. First released October 2026.