

FOR HEALTHCARE PROFESSIONALS ONLY

THE SCIENCE OF YOGHURT

From spoon, though the gut,
to whole body benefits

REFERENCE GUIDE 2026



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HOW THE EVIDENCE IS GRADED

Every substantive statement in this guide carries one of four labels, printed beside the claim.

AUTHORISED CLAIM

An authorised claim, regulation or formal opinion from a recognised authority. Reproduced verbatim, attributed, with its jurisdiction stated.

CONVINCING

Consistent high-quality evidence, typically several large studies or good meta-analyses pointing the same way.

PROBABLE

A real and consistent signal, with limitations that remain: observational design, residual confounding or surrogate outcomes.

EMERGING

Early, mechanistic, mixed or small-study evidence. Interesting, and not yet a basis for firm advice.

Compliance. Health claims reproduced in this guide are shown verbatim with their source and jurisdiction. Claims authorised in other jurisdictions have no standing under the South African labelling regulations (R.146 of 2010) and appear here as scientific and regulatory context, not as claims made for any product.

INTRODUCTION

Yoghurt is milk that fermentation has changed. It carries the nutrient package of the milk it was made from, and it adds live cultures, lactic acid and peptides formed during fermentation. That combination is why yoghurt is treated as a food category in its own right in dietary guidelines around the world, and why it earns a scientific guide of its own.

WHY THIS MATTERS IN SOUTH AFRICA

South Africa carries a double burden. Undernutrition and micronutrient shortfalls sit alongside rising overweight, obesity and non-communicable disease. Calcium, protein and potassium are recognised shortfall nutrients, which is why the revised food-based dietary guidelines include a dedicated dairy message (Vorster, Badham and Venter, 2013).

“HAVE MILK, MAAS AND YOGHURT EVERY DAY.”

The Provincial Dietary Intake Study found median calcium intake below the estimated average requirement in every age group of children aged 1 to under 10 years studied in Gauteng and the Western Cape (Senekal *et al.*, 2020). Yet dairy remains among the least consumed food groups in lower-income communities, and the barriers are well described: beliefs about lactose intolerance, taste, price and limited awareness of nutritional value (Rediscover Dairy, 2022).

THE APPROACH TAKEN HERE

This guide separates four things that are often blurred together: established mechanisms, observational associations, intervention evidence and regulatory claims. Each is labelled. Where the evidence is observational, the language says so, and phrases such as ***associated with*** and ***linked to*** are used deliberately in place of causal wording.

Limitations are stated alongside findings rather than collected at the end. Where a figure could not be verified against a primary source, it is not stated at all.

A note on scope. This guide covers the six messages presented on the Gut Tunnel stand. It does not extend to infant and young child feeding, pregnancy or specific clinical populations, and it makes no product-specific claims.

THE SCIENCE OF YOGHURT: A SUMMARY

01	Milk, plus more	CONVINCING
MOUTH	Fermentation unlocks additional benefits in milk's already nutrient dense dairy matrix.	p5
02	Fermentation did the work first	CONVINCING PROBABLE
STOMACH	Yoghurt arrives part-fermented and the dairy matrix slows everything down: enhanced digestibility, low glycaemic index.	p6
03	Lactose-sensitive? Yoghurt is different	AUTHORISED CLAIM CONVINCING
SMALL INTESTINE	Live cultures improve digestion of the lactose in yoghurt in people with lactose maldigestion. An authorised EU claim.	p7
04	Yoghurt helps your gut to flourish	CONVINCING PROBABLE
LARGE INTESTINE	The dense microbial community sits in the colon. Cultures from yoghurt survive transit and shift composition while being eaten.	p8
05	The daily habit with benefits for years to come	PROBABLE
BLOODSTREAM	Habitual intake is associated with lower type 2 diabetes and hypertension risk. Associations, not causation.	p9
06	Two a day. Every day.	CONVINCING PROBABLE
WHOLE BODY	Aim for one daily serving of yoghurt: 200 g, or two small tubs.	p10

WHAT MAKES A YOGHURT A YOGHURT

CULTURES	Fermented by <i>Lactobacillus delbrueckii</i> subsp. <i>bulgaricus</i> and <i>Streptococcus thermophilus</i> . Both are compulsory.
VIABILITY	At least 10 ⁷ CFU/g of yoghurt culture in the finished product. Heat treatment after fermentation is not permitted.
PROTEIN	Minimum 2.7 g/100 g for plain yoghurt, 5.6 g/100 g for strained yoghurt or 2.0g/100g for yoghurt with added foodstuffs (flavoured or fruit)

Regulation R.1510 of 2019 (South Africa); Codex Alimentarius CXS 243-2003.

Milk, plus more



1. Fermentation unlocks additional benefits in milk. The nutrients come from the milk, and nothing here diminishes milk itself.
2. What fermentation adds is additional: live cultures, lactic acid, peptides and a changed vitamin profile.

CONVINCING

01

A NATURALLY NUTRIENT-DENSE MATRIX

Protein, calcium, iodine, phosphorus, potassium and B vitamins arrive together in the dairy matrix. Delivered together, they behave differently from the same nutrients taken in isolation.

02

LIVE FERMENTS ADD NUTRITIONAL VALUE

Yoghurt cultures synthesise folate during fermentation, and riboflavin-producing strains raise vitamin B2. Riboflavin and B12 also carry over from the milk, and dairy is one of few reliable everyday sources of both.

03

A BILLION LIVE, ACTIVE CULTURES IN EVERY TUB

South African regulation requires at least 10^7 CFU of yoghurt culture per gram in the finished product. On that minimum alone, a 100 g tub carries at least one billion live, active cultures.

99.4%

of 6 to <10 year olds
below the calcium EAR

Median calcium intake fell below the estimated average requirement in every age group studied, and the shortfall widened with age. Dairy is the most practical everyday source of bioavailable calcium in this population.

Cross-sectional dietary survey · children 1 to <10 years, Gauteng and Western Cape · repeat 24-hour recall · outcome: intake against EAR · limitation: two provinces only, not nationally representative. Senekal *et al.*, 2020

Fermentation did the work first



1. Yoghurt offers enhanced digestibility and a low glycaemic index.
2. Yoghurt arrives part-fermented, and the dairy matrix slows everything down.

CONVINCING

PROBABLE

01 YOGHURT ARRIVES PART-FERMENTED

The cultures break down part of the milk's lactose and partly digest its proteins before the tub is opened. Less of that work is left for the gut to do.

02 FERMENTATION IMPROVES NUTRIENT BIOAVAILABILITY

Acidification during fermentation keeps calcium and other minerals soluble, and bacterial proteolysis releases peptides that help keep calcium available further along the small intestine.

03 THE YOGHURT MATRIX SLOWS GASTRIC EMPTYING

A semi-solid, acidified gel leaves the stomach more gradually than a liquid. Nutrients reach the small intestine over a longer period rather than as a single load, and the matrix shields the cultures from gastric acid and bile on the way.

YOGHURT IS A LOW GLYCAEMIC INDEX FOOD

26

plain yoghurt

≈40

sweetened yoghurt

55

low-GI threshold

Plain yoghurt has a glycaemic index of roughly 26, and sweetened yoghurt generally stays around 40, below the low-GI threshold of 55. The high protein-to-carbohydrate ratio and the partial hydrolysis of lactose during fermentation both contribute (Wolever, 2017).

Savaiano and Hutkins, 2021; Aryana and Olson, 2017; Fernandez *et al.*, 2017; Wolever, 2017.

Lactose-sensitive? Yoghurt is different



1. Live yoghurt cultures carry their own lactase into the small intestine and keep breaking down the lactose that arrived with them.
2. An authorised European claim recognises this. It is scoped to the lactose in that product, in people with lactose maldigestion, and is not a treatment for intolerance.

AUTHORISED CLAIM

CONVINCING

Commission Regulation (EU) No 432/2012, Annex: live yoghurt cultures

“Live cultures in yoghurt or fermented milk improve lactose digestion of the product in individuals who have difficulty digesting lactose”

Conditions of use. “In order to bear the claim, yoghurt or fermented milk should contain at least 10⁸ Colony Forming Units live starter microorganisms (*Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus*) per gram.”

Reproduced verbatim. The underlying opinion is EFSA, 2010, *EFSA Journal* 8(10):1763, pp. 2, 8 and 9.

Both starter organisms express β -galactosidase, the bacterial equivalent of intestinal lactase. Protected by the matrix, a proportion survive gastric acid and bile and reach the small intestine still active, where the enzyme acts on the lactose delivered with it. They do not colonise and do not multiply in transit.

IT SAYS

- Live cultures improve digestion of the lactose in that product
- The target group is people with lactose maldigestion
- A cause-and-effect relationship has been established

IT DOES NOT SAY

- That yoghurt is lactose-free
- That yoghurt cures or treats lactose intolerance
- That the effect extends to lactose from other foods

IN THE CONSULTING ROOM

A systematic review of 108 studies found lactose digestion to be the one outcome where the relationship with yoghurt is causal, not associative (Savaiano and Hutkins, 2021). Clinically, most people who avoid all dairy have never been assessed, and blanket exclusion is associated with inadequate calcium and vitamin D intake (Suchy *et al.*, 2010).

Yoghurt helps your gut to flourish

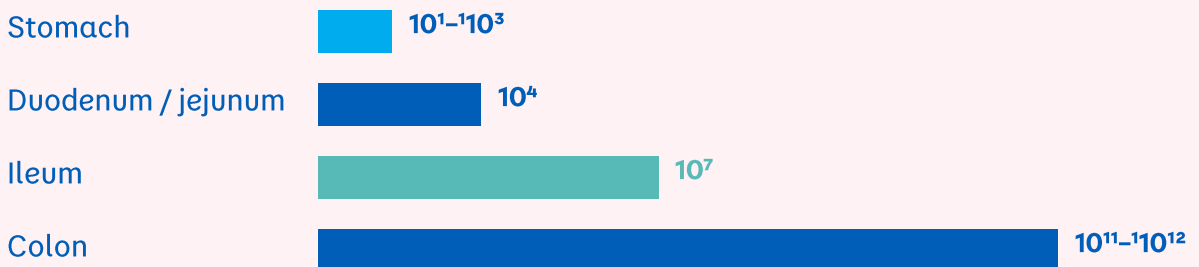


1. The dense microbial community lives in the colon, not the stomach. Numbers rise by many orders of magnitude along the tract.
2. Yoghurt cultures survive transit and shift gut microbiota composition while yoghurt is being eaten. The shift is consistent, and it is transient.

CONVINCING

PROBABLE

Approximate bacterial density along the gastrointestinal tract, per gram or millilitre of contents



Orders of magnitude, shown on a linear scale. Sender, Fuchs and Milo, 2016; Federico *et al.*, 2017.

WHAT LIVE CULTURES DO

Survive gastrointestinal transit

CONVINCING

Demonstrated repeatedly in human studies, and the basis of the authorised lactose claim.

Shift microbiota composition while being eaten

CONVINCING

In a large twin and population cohort, yoghurt intake was associated with higher relative abundance of the starter species and with changes in the faecal and blood metabolome (le Roy *et al.*, 2022). Composition returns towards baseline when intake stops.

Support barrier function and immune responses

EMERGING

Biologically plausible, and supported mainly by animal and mechanistic work. Human clinical outcome evidence remains limited.

LIVE CULTURES ARE NOT PROBIOTICS

Probiotic is reserved for a defined strain, at a defined dose, with a documented health benefit (Hill *et al.*, 2014). Yoghurt's standard starters do not meet this criteria, hence referred to as live and active cultures. Where a named strain with that evidence is present, the term applies and the strain should be named.

The daily habit with benefits for years to come



Key takeaway

1. Habitual yoghurt intake is associated with lower risk of type 2 diabetes and hypertension, and with healthier weight.
2. These are associations, not demonstrated causal effects.

PROBABLE

14 %

lower T2D risk
per 80 g/day

Pooled across 22 prospective cohort studies, each 80 g per day of yoghurt was associated with a 14% lower risk of type 2 diabetes.

Meta-analysis of prospective cohorts · 579,832 adults · habitual intake by food questionnaire · outcome: incident type 2 diabetes · limitation: observational, self-reported intake, residual confounding. YINI, 2023

REGULATORY LANDSCAPE: THE UNITED STATES QUALIFIED HEALTH CLAIM

“Eating yogurt regularly, at least 2 cups (3 servings) per week, may reduce the risk of type 2 diabetes according to limited scientific evidence.”

US FDA, 2024. Verbatim, with its mandatory qualifier and US spelling. No standing under R.146 of 2010; not a claim for any product.

- **Blood pressure**

Across three US cohorts and 184,178 adults, at least five servings a week was associated with a 16% lower pooled risk of high blood pressure. Not significant in the male cohort; attenuated to 10% after BMI adjustment (Buendia *et al.*, 2018).

- **Weight and waist**

Up to 165 g per day is associated with lower obesity risk and less weight gain (Sayón-Orea *et al.*, 2017), and with abdominal obesity reversion in PREDIMED (Santiago *et al.*, 2016).

- **The healthy-user problem**

Regular yoghurt eaters are on average more active and eat better overall. Cohorts cannot adjust for what they do not measure (Tremblay and Panahi, 2017).



Two a day. Every day.



Key takeaway

1. Choosing yoghurt as part of a daily routine brings the nutritional benefits of dairy alongside the natural benefits of fermentation.
2. Two a day is a practical serving recommendation, not a therapeutic dose.

CONVINCING

PROBABLE

WHAT THREE SERVINGS OF DAIRY LOOKS LIKE

South African dairy guidance recommends **three servings of dairy each day**. One of those servings could be 200 g of yoghurt, which is two small tubs.

3

servings of dairy
a day

1

of those could be
200g of yoghurt

200 g

which is two
100g tubs



The South African food-based dietary guideline is to have milk, maas or yoghurt every day (Vorster, Badham and Venter, 2013). The three-serving figure and the serving sizes above are the South African dairy sector's consumer guidance (Rediscover Dairy, 2022).

MAKING TWO A DAY PRACTICAL

With breakfast cereal or oats

As a mid-morning or mid-afternoon snack

Blended with fruit

Stirred through soups, curries or mash at the end of cooking

As a base for salad dressings and marinades

Maas where it is preferred, or more affordable

THE POSITION ON SWEETENED YOGHURT

All yoghurt, plain or sweetened, delivers the benefits of dairy, live cultures and fermentation. When counselling patients, encourage plain yoghurt most often as a choice free from added sugar. For patients who prefer sweetened yoghurt, recommend options containing less than 10 g total sugar per 100 g. The recommendation of two 100 g servings per day applies to all yoghurt types. Where plain yoghurt is unlikely to be consumed, a lower-sugar sweetened yoghurt that is eaten regularly is still offers a beneficial option.

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THE SCIENCE OF YOGHURT

REFERENCE GUIDE 2026

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DOCUMENT DATE

October 2026

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