

Health benefits of reformulating with fibre in the Chinese population¹

Tate & Lyle's research study shows
potential health gains

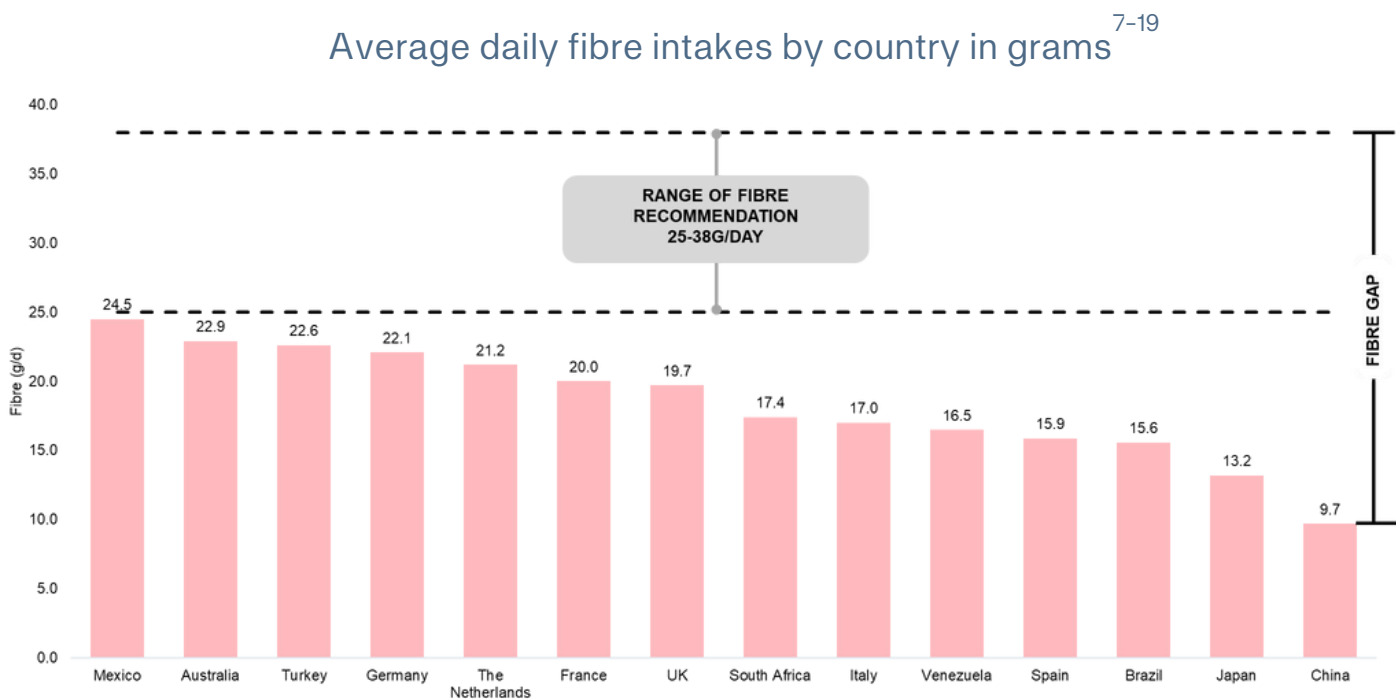
\ Find out more

www.tateandlyle.com\nutrition-centre

Global shortfall in fibre intake

Dietary fibre provides a host of health benefits beyond supporting digestive health. Some fibres help to keep blood glucose levels healthy, support weight management, prevent cardiovascular disease (CVD) and enhance calcium absorption, which is essential for bone health². Recognising these benefits, the World Health Organisation (WHO) recommends that adults consume 25–35g of fibre daily. However, fibre intake in most countries is well below these guidelines.^{3,4}

Meanwhile, China faces a growing obesity crisis, with more than half of its adult population being overweight.⁵ Projections suggest that by 2030, nearly two out of three adults and one in three school-age children and adolescents in China could be overweight.⁵



Food reformulation presents a promising strategy for improving public health by allowing people to enjoy their preferred products while reducing intake of less desirable nutrients, such as sugars and fats, and potentially increasing intake of beneficial nutrients such as dietary fibre⁶.

Purpose of the study

How can fibre fortification impact the diet and health of consumers in China?



Why we did it

While traditional sources of fibre, such as whole grains, fruits, and vegetables, should be encouraged, added fibres in foods also significantly boost dietary fibre intake and promote positive health outcomes⁶.

The average daily fibre intake of most countries is well below recommended amounts.

How we did it

Tate & Lyle looked at what Chinese consumers currently eat and drink using the China Health and Nutrition Survey, which included nine provinces in China.

A statistical modelling scenario was applied to see how food and drinks reformulated with additional fibre would affect consumers' diets and health.

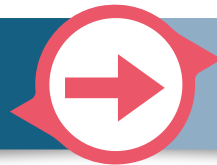


Fibre fortification levels

Foods and beverages eligible for fibre fortification and the concentrations of fibre used at intervention were identified based on Chinese legislations and regulations of nutrition label claims.²⁰

Food and beverage products were fortified with fibre according to the following scenarios

Food/beverage with 0g fibre/100g or 100ml



Fibre left at zero

Beverage containing less than 1.5g fibre/100ml



Fibre increased to 1.5g/100ml

Food containing less than 3g fibre/100g



Fibre increased to 3g/100g

Food containing greater than or equal to 3g fibre/100g



3g fibre was added

Tate & Lyle's health modelling study in the Chinese population shows potential public health benefits of adding more fibre to everyday foods.



Fibre fortification would enable **48% and 54% more Chinese adults and children** to consume the recommended fibre amount.



Fibre fortification could help **avert or delay** approximately 73,065 deaths per year due to CVD in China.



Fibre fortification would **reduce the risk** of developing CVD in the next 10 years by **2.74%** in China.



Fibre fortification could potentially **prevent or delay** 234 cases of diabetes per day (85,340 cases/year) and would **reduce the risk of** developing type 2 diabetes by 1.41% over the next 10 years in China.

KEY TAKE AWAYS

Fibre formulation in a variety of food categories in China could:

- Increase adherence to recommended fibre intake.
- Provide positive health benefits, including reducing CVD risk-related deaths and reducing type 2 diabetes risk.

WHY DOES IT MATTER?

This study could support and encourage food and beverage producers in China to consider fibre fortification through food reformulation.



REFERENCES

1. Teh T, et al. (2024). BMJ Open. 2024 May 23;14(5):e079924.
2. Barber TM, Kabisch S, Pfeiffer AFH, et al. The health benefits of dietary fibre. *Nutrients* 2020;12:3209.
3. Stephen AM, Champ MM-J, Cloran SJ, et al. Dietary fibre in Europe: Current state of knowledge on definitions, sources, recommendations, intakes and relationships to health. *Nutr Res Rev* 2017;30:149–90.
4. Reynolds A, Mann J, Cummings J, et al. Carbohydrate quality and human health: a series of systematic reviews and meta-analyses. *Lancet* 2019;393:434–45.
5. Chinese Nutrition Society. *Dietary Guidelines for Chinese Resident*. Beijing: Chinese Nutrition Society; 2022
6. Canene-Adams K, Laurie I, Karnik K, et al. Estimating the potential public health impact of fibre enrichment: a UK Modelling study. *Br J Nutr* 2022;128:1868–74.
7. Fayet-Moore F, et al. 2018. Dietary Fibre Intake in Australia. Paper II: Comparative Examination of Food Sources of Fibre among High and Low Fibre Consumers. *Nutrients*. 2018; 10(9):1223.
8. Turkey Nutrition and Health Survey (TNHS) 2017. Available online [TBSA_RAPOR_KITAP_2017_ENG_.pdf \(saglik.gov.tr\)](https://www.saglik.gov.tr/TBSA_RAPOR_KITAP_2017_ENG.pdf).
9. The diet of the Dutch Results of the Dutch National Food Consumption Survey 2019– 2021 on food consumption and evaluation with dietary guidelines. Available online: [The diet of the Dutch Results of the Dutch National Food Consumption Survey 2019–2021 on food consumption and evaluation with dietary guidelines \(rivm.nl\)](https://rivm.nl/en/food-consumption-and-evaluation-with-dietary-guidelines)
10. López-Olmedo N, et al. 2016. Usual Intake of Added Sugars and Saturated Fats Is High while Dietary Fiber Is Low in the Mexican Population. *J Nutr*. 2016 Sep;146(9):1856S–65S.
11. The Third French Individual and National Food Consumption (INCA3) Survey 2014–2015. Available online: <https://www.anses.fr/en/system/files/PRES2017DPA04EN.pdf>
12. Straßburg A, et al. 2017. Comparison of food consumption and nutrient intake assessed with three dietary assessment methods: results of the German National Nutrition Survey II. *Eur J Nutr*. 2019 Feb;58(1):193–210.
13. National Diet and Nutrition Survey Rolling programme Years 9 to 11 (2016/2017 to 2018/2019) A survey carried out on behalf of Public Health England and the Food Standards Agency.
14. Frank T, et al. 2024. Dietary intake of low-income adults in South Africa: ultra-processed food consumption a cause for concern. *Public Health Nutr*. 2024 Jan 11;27(1):e41.
15. González-Rodríguez LG, et al. 2017. Intake and Dietary Food Sources of Fibre in Spain: Differences with Regard to the Prevalence of Excess Body Weight and Abdominal Obesity in Adults of the ANIBES Study. *Nutrients*. 2017 Mar 25;9(4):326.
16. Gómez G, et al. 2019. Diet Quality and Diet Diversity in Eight Latin American Countries: Results from the Latin American Study of Nutrition and Health (ELANS). *Nutrients*. 2019 Jul 15;11(7):1605.
17. Fourth nationwide food consumption study in Italy (IV SCAI ADULT). CREA – Centro di ricerca Alimenti e Nutrizione Studio sui Consumi Alimentari in Italia – IV SCAI: estratto dei risultati. 2023. Available online: [IV SCAI – Studio sui consumi alimentari in Italia – IV SCAI – Studio sui consumi alimentari in Italia – Food and Nutrition – CREA](https://www.crea.gov.it/iv-scai-studio-sui-consumi-alimentari-in-italia)
18. Katagiri R, et al. 2020. Dietary fiber intake and total and cause-specific mortality: the Japan Public Health, Center-based prospective study. *Am J Clin Nutr*. May 1;111(5):1027–1035.
19. Yu D, et al. Status and trends in consumption of grains and dietary fibre among Chinese adults (1982–2015). *Nutr Rev* 2020;78:43–53.
20. GB 28050–2011 national food safety standard nutrition labeling of prepackaged foods

For more information please visit tateandlyle.com/nutrition-centre.

Health benefits of reformulating with fibre in the Chinese population

\ Find out more

www.tateandlyle.com\nutrition-centre

This leaflet is provided for general circulation to the nutrition science and health professional community and professional participants in the food industry, including prospective customers for Tate & Lyle food ingredients. It is not designed for consumer use. The applicability of label claims, health claims and the regulatory and intellectual property status of our ingredients varies by jurisdiction. You should obtain your own advice regarding all legal and regulatory aspects of our ingredients and their usage in your own products to determine suitability for their particular purposes, claims, freedom to operate, labelling or specific applications in any particular jurisdiction. This product information is published for your consideration and independent verification. Tate & Lyle accepts no liability for its accuracy or completeness. Tate & Lyle 5450 Prairie Sone parkway, Hoffman Estates, IL 60192, 1.800.526.5728.