

Making Whole Grains the New Norm:

Changing Consumer Attitudes & Perceptions in Latin America and around the World

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Mexico City • March 2018

Overview

- Whole Grain Consumption in Latin America
- Whole Grain Habits and Attitudes... and How to Change Them
- Global Trend Toward Whole Grains
- 6 Takeaway Lessons from Around the World

Whole Grain Consumption in Latin America

Global Nutrition and Policy Consortium

Home of the Global Dietary Database

BMJ Open Global, regional and national consumption of major food groups in 1990 and 2010: a systematic analysis including 266 country-specific nutrition surveys worldwide

Renata Micha,¹ Shahab Khatibzadeh,² Peilin Shi,¹ Kathryn G Andrews,³ Rebecca E Engell,³ Dariush Mozaffarian,¹ on behalf of the Global Burden of Diseases Nutrition and Chronic Diseases Expert Group (NutriCoDE)

To cite: Micha R, Khatibzadeh S, Shi P, et al. Global, regional and national consumption of major food groups in 1990 and 2010: a systematic analysis including 266 country-specific nutrition surveys worldwide. *BMJ Open* 2015;5:e008705. doi:10.1136/bmjopen-2015-008705

► Prepublication history and additional material is available. To view please visit the journal (<http://dx.doi.org/10.1136/bmjopen-2015-008705>).

Received 7 May 2015
Revised 5 August 2015
Accepted 13 August 2015

ABSTRACT

Objective: To quantify global intakes of key foods related to non-communicable diseases in adults by region (n=21), country (n=187), age and sex, in 1990 and 2010.

Design: We searched and obtained individual-level intake data in 16 age/sex groups worldwide from 266 surveys across 113 countries. We combined these data with food balance sheets available in all nations and years. A hierarchical Bayesian model estimated mean food intake and associated uncertainty for each age-sex-country-year stratum, accounting for differences in intakes versus availability, survey methods and representativeness, and sampling and modelling uncertainty.

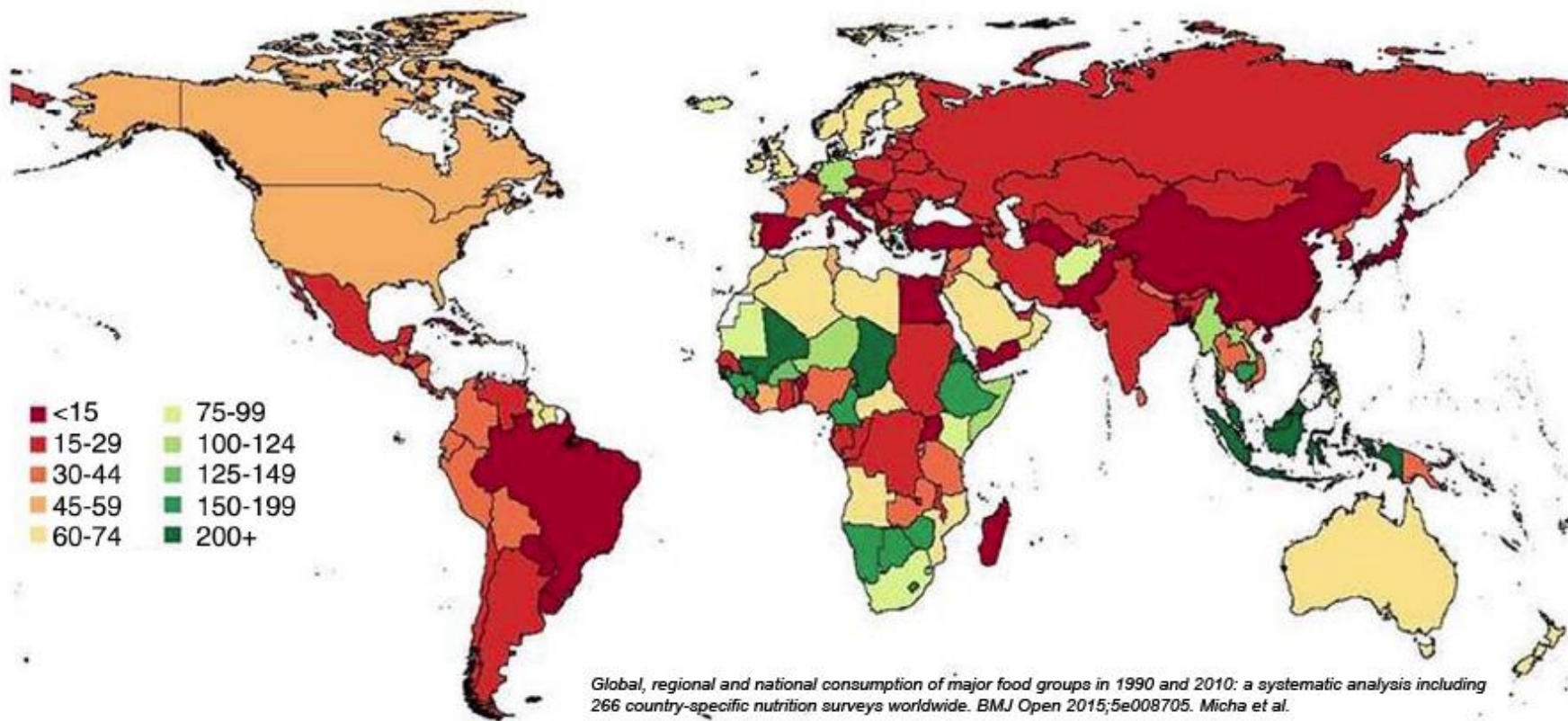
Setting/population: Global adult population, by age, sex, country and time.

Results: In 2010, global fruit intake was 81.3 g/day (95% uncertainty interval 78.9–83.7), with country-specific intakes ranging from 19.2–325.1 g/day; in

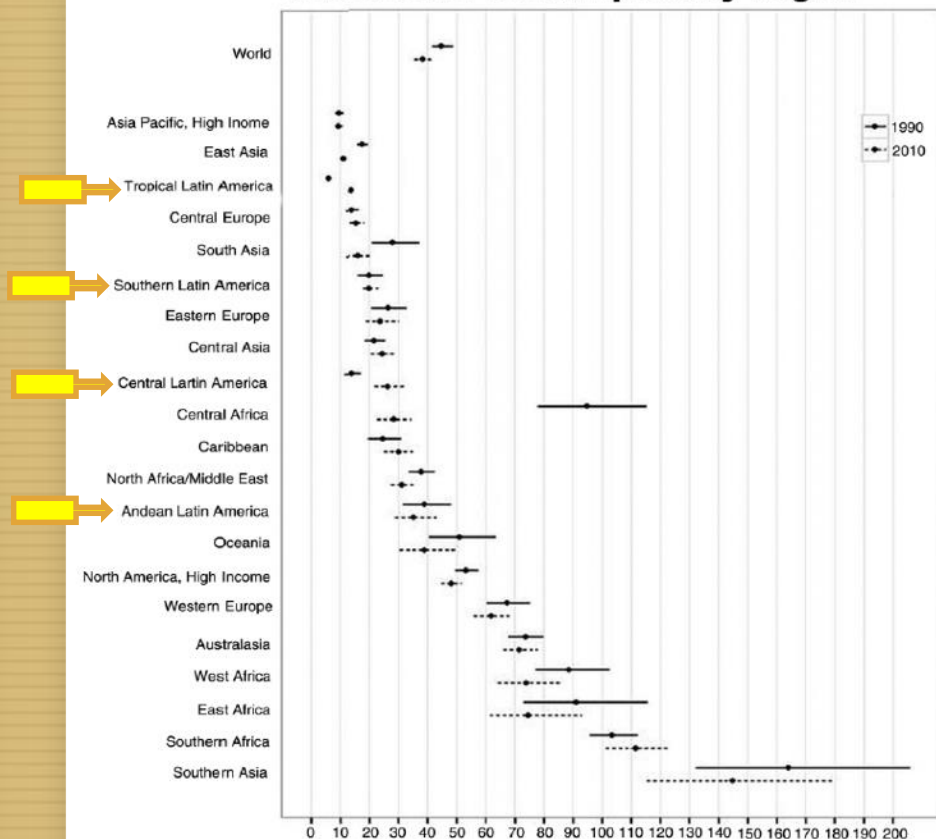
Strengths and limitations of this study

- Suboptimal diet is now the leading risk factor for non-communicable diseases; intakes of specific foods, rather than macronutrients or micronutrients, may be most relevant for non-communicable disease risk. This is the first study to provide comprehensive and comparable quantitative estimates, based on individual-level global intakes and their uncertainties, of key foods influencing chronic diseases, including by region, country, age, sex and time.
- We identified and made use of a much larger set of primary data sources than previous collations, which have relied mainly on crude availability or expenditure data that may not accurately reflect individual intake.
- These global data identify key challenges and opportunities for optimising diets; facilitate quantification of disease burdens attributable to key foods; and inform policies and priorities for

Whole Grain Consumption Worldwide in daily grams (mean)



Whole Grain Consumption by Region



Latin America

Bolivia 37.8 g/day (highest)

Ecuador 35.4 g/day

Colombia 31.4 g/day

Costa Rica 28.8 g/day

Chile 27.4 g/day

Mexico 24.6 g/day

Argentina 17.7 g/day

Brazil 13.8 g/day

Uruguay 10.1 g/day

Paraguay 8.1 g/day (lowest)

(other Latin American countries in this range)

Whole Grain Habits and Attitudes... and How to Change Them

“With this rice you have to
chew really hard...
This rice sits like a stone in
the stomach and takes a
long time to digest.”

India

Perceptions about varieties of brown rice: A qualitative study from Southern India. J of the Am Diet Assn. 2011. doi: 10.1016/j.jada.2011.07.002. Kumar et al.



“I’ve been turned off by
brown pasta in a big
way because it tastes
like the cardboard box it
comes out of.”

United Kingdom

WHOLEheart study participant acceptance of wholegrain foods. Appetite 59 (2012) 187-193. Kuznesof et al.

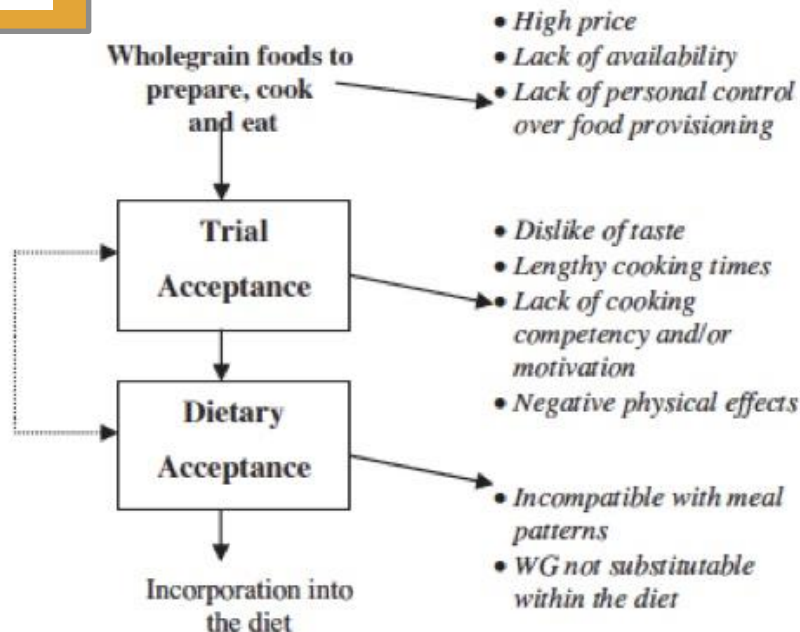


Research report

WHOLEheart study participant acceptance of wholegrain foods^{*}

Underlying Constructs

- Taste
- Dietary motivation
- Self-efficacy
- Time
- Financial constraints
- Sustainability



WHOLEheart study participant acceptance of wholegrain foods.
Appetite 59 (2012) 187-193, Kuznesof et al.

We All Have Habits



Singapore: the Challenge

Goal / Recommendation:

Singapore's Health Promotion Board recommends 2-3 servings (60-90g) of whole grain per day

Whole grain consumption is low:

- **Pregnant women:** 70% eat no whole grains; of the 30% who eat whole grains, average intake is 23.6g/day.
- **Children:** 62% eat no whole grains; median intake 15.3g/day.
- **Overall:** Just 6% of carbs (3% of calories) come from whole grains
- **Global ranking:** #104 out of 113 in 2010



Asia Pac J Clin Nutr 2015;24(4)

SNDA.org.sg "Advocating whole grains consumption as a key approach in diabetes prevention."

J of Nutr Sci 2016;5(e33)

Singapore: Solution 1

Healthier Hawker Centres



<https://www.healthhub.sg/live-healthy/24/healthyhawkerfood>

The plan:

- **Develop** partially whole grain noodles with noodle supplier; supply them at same cost as refined.
- **Educate** food vendors (chef demos) and incentivize them with common signage, grading system.
- **Promote** with consumers.

The results:

- 70% of noodle stalls adopted whole grain as default. One portion = 20g whole grain = $\frac{1}{2}$ daily requirement.
- 50% of rice sold = brown or mixed (in a population where <20% eat brown rice)

Singapore: Solution 2

Supermarket Promotions



<http://www.straitstimes.com/singapore/supermarkets-promoting-wholegrain-rice-as-healthier-alternative>

The plan:

- **Target the problem:** HPB identifies white rice as main diabetes concern.
- **Encourage** supermarkets to offer discounts and promotions on brown rice.
- **Drive competition** in the market.
- **Provide signage** graphics with HPB's Healthier Choice symbol.

The results:

- Cold Storage chain: 10% fall in white rice sales, 15% increase in brown in three years.
- Market share of all "Healthier Choice" products growing 9% annually.

India: the Challenge

Goal / Recommendation:

Cut refined foods; increase consumption of whole grains, low-glycemic foods and fiber-rich foods.

White rice is the primary grain staple

Refined grain intake = around half of calories. 75% of this = white rice.
Negative perceptions of brown rice: “Looks like cheap quality” ... “People will think poorly of us” ... “You have to chew really hard” ...

Global ranking: #78 out of 113 countries

Diabetes rates are high:

India had world's highest number of diabetics (31.7m) in 2000. Predicted up to 79.4m by 2030.



Food Science and Human Wellness 2 (2013) 105-112

J Am Diet Assoc. 2011;111:1517-1522

Australas Med J 7(1); 2014

India: Solution 1

Brown Rice Idli



Photo from The Sizzling Pan

<http://my-kitchens-aroma.blogspot.com/2012/12/brown-rice-idlis-and-dosa.html>

The study:

- **Experiment** with different levels of brown rice substituted for white rice in a widely-eaten staple called *idli*.

The results:

- 90% of test subjects preferred brown-rice-blended idli as their first choice.
- However, 25% and 50% replacements were preferred over 75% and 100% replacements.
- “Informed group” – told they were eating healthier choice – liked brown rice more than “blind group.”

Food Science and Human Wellness 2 (2013) 105-112, Manickvasagan et al.

India: Solution 2

Whole Wheat Flatbread



Photo from WikiCommons
By Fatimahope <https://commons.wikimedia.org/w/index.php?curid=40887038>

The tradition:

- In northern India, wheat is the primary staple, often made into flatbreads such as *roti*, *chapati* and *naan*.
- Atta flour, a whole durum wheat flour, is the traditional main ingredient.

The facts:

- 60% of wheat flour in India is whole wheat (compared to 5% in US).
- 80% of the 1,500 flour mills in India grind whole wheat flour, as do most of the 500,000 roadside *chakkis*.

Assocom Institute of Bakery Technology and Management

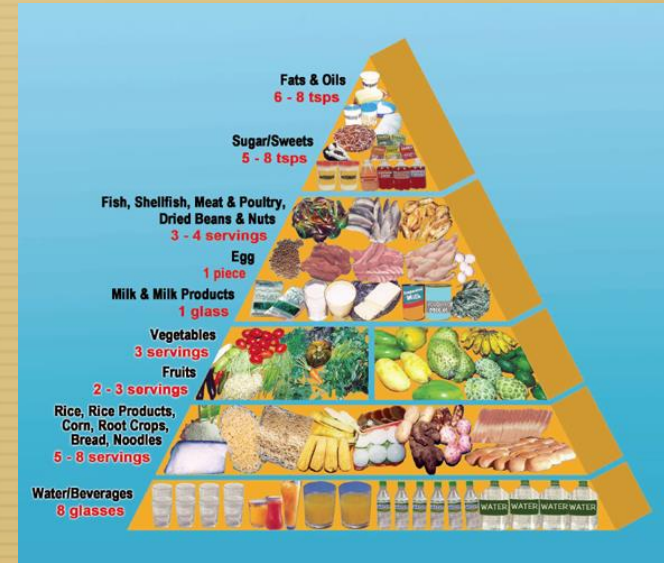
Philippines: the Challenge

Goal:

Provide better nutrition to Filipinos, while cutting energy costs and becoming more self-sufficient in food.

White rice is the primary grain staple

- Rice polishing removes 10% of protein, 83% of thiamine (B1), 47% of riboflavin (B2), 69% of niacin (B3), 63% of fiber
- Eliminating polishing of rice reduces energy use up to 65% at mills.
- About 10% more yield from using brown rice instead of white = no imports.



USDA Nutrient Database <https://ndb.nal.usda.gov/ndb/>

<http://www.asiarice.org/sections/whatsnew/letspromote-Philippines.htm>

Philippines: Solution 1

#Brown4Good



The plan:

- **Partnership** between National Food Authority (NFA) and Dept. of Agriculture-Philippine Rice Research Institute.
- **Nationwide campaign** emphasizing health and food-security (white wastes 10%). One cup of brown rice to charity for each hashtag.
- **Affordability** targeted through cooperatives in each region discounting to retailers.

The results:

- Widespread awareness and participation
- 1,000,000 pesos of rice donated to charity/
- About 145,985 entries/cups of brown rice donated.

<https://www.facebook.com/hashtag/brown4good>

Denmark: the Challenge

Goal / Recommendation:

Danish Dietary Guidelines recommend eating 75g of whole grain per day (equivalent to ~ 1 ½ cups brown rice or whole wheat pasta).



A cultural tradition of whole grains had been largely lost

- In 2008 only 7% of children and 5% of adults ate the recommended levels.
- Attitude surveys showed participants prefer to eat rye bread when they are working, but associate white bread with spare time/leisure.
- Lost in translation: Danes admired “coarse grained bread” but not “whole grain”

<http://www.fuldkorn.dk/media/69050/fuld-af-korn-antropologisk-studie-2007.pdf>

Denmark: Solution 1

Whole Grain Partnership



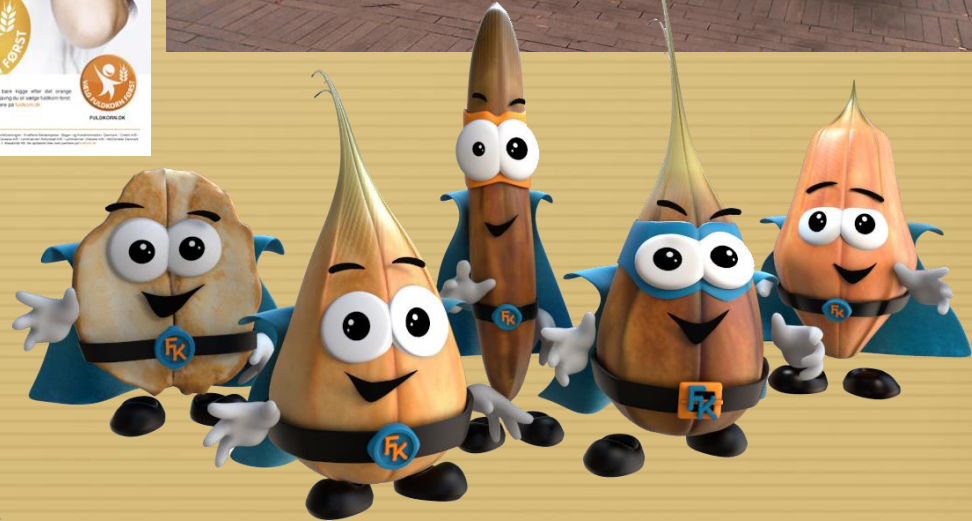
The plan:

- **Partnership** between Danish health organizations, Food Administration and food companies.
- **Packaging symbol** was developed.
- **Creative promotions** carried out regularly.

The results, 2009-2014:

- Children: from 7% → 43% eating recommended amount
- Adults: from 5% → 27% eating recommended amount
- Average consumption rose from 36g/day → 63g/day
- Lowest quartile rose from 12g/day → 23g/day

<http://www.fuldkorn.dk/english>



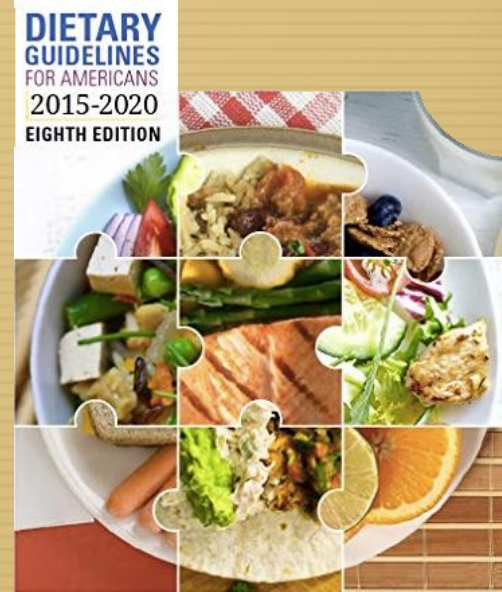
United States: the Challenge

Goal / Recommendation:

- US Dietary Guidelines recommend children make at least half their grains whole.
- For younger children this means about 2 servings; for children ≥ 9 , this means 3 servings.

Adults assume kids are picky eaters and won't eat whole grains

- In 2010, kids ate only 8-9% of their grains as whole grains, far below 50%
- This was the lowest of any age group.



NHANES data 2009-2010. <https://www.ars.usda.gov/research/publications/publication/?seqNo115=297122>

United States: Solution 1

School children's preferences



USDA photo

The study:

- 83 Florida middle-school students (age 11-15) in two groups got either whole grain foods or refined grain foods for 6 weeks.
- Foods included pasta, rice, bread supplied at home, and snacks at school.

The results:

- Students ate the same amount of food, whether refined or whole grain.
- The whole grain group went from 1 → 3 servings/day.

J Acad Nutr Diet. 2014 Sep;114(9):1417-23.

doi: 10.1016/j.jand.2014.04.020. Epub 2014 Jun 17.

United States: Solution 2

Children and whole grain pizza crust



The study:

- 394 children in Minnesota were served whole grain or refined grain crust pizza at a restaurant. Plate waste was calculated to compare consumption. 120 children taste-tested both pizzas and rated liking.

The results:

- Children consumed as much of the pizza made with whole grain crust as the pizza made with refined grain crust.
- Liking ratings for both types were high (4.5 of 5) and did not differ by crust type.

Public Health Nutr. 2015 Jun;18(8):1407-11.

doi: 10.1017/S1368980014001724. Epub 2014 Aug 26.

United States: Solution 3

Healthy Hunger-Free Kids Act



New school food regulations in 2012-2014:

- **All grain foods** served in school meals must contain at least half of their grains as whole grains.

The results:

- By 2014, 97.2% of schools were meeting regulations by serving whole grains daily at breakfast, and 94.4% at lunch.
- USDA provides brown rice, macaroni, other whole grain-rich foods to schools.

Centers for Disease Control and Prevention

<https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6433a3.htm>.

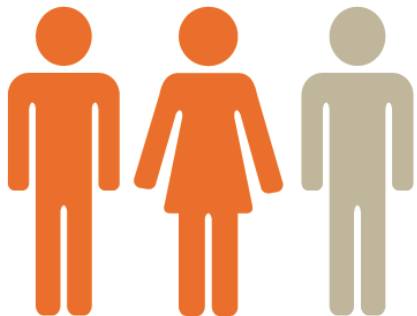
Global Trend Toward Whole Grains

WHOLE GRAIN MOMENTUM

WHOLE GRAINS ARE THE NEW NORM

2 OUT OF **3**
PEOPLE

make at least **HALF**
their grains **WHOLE**



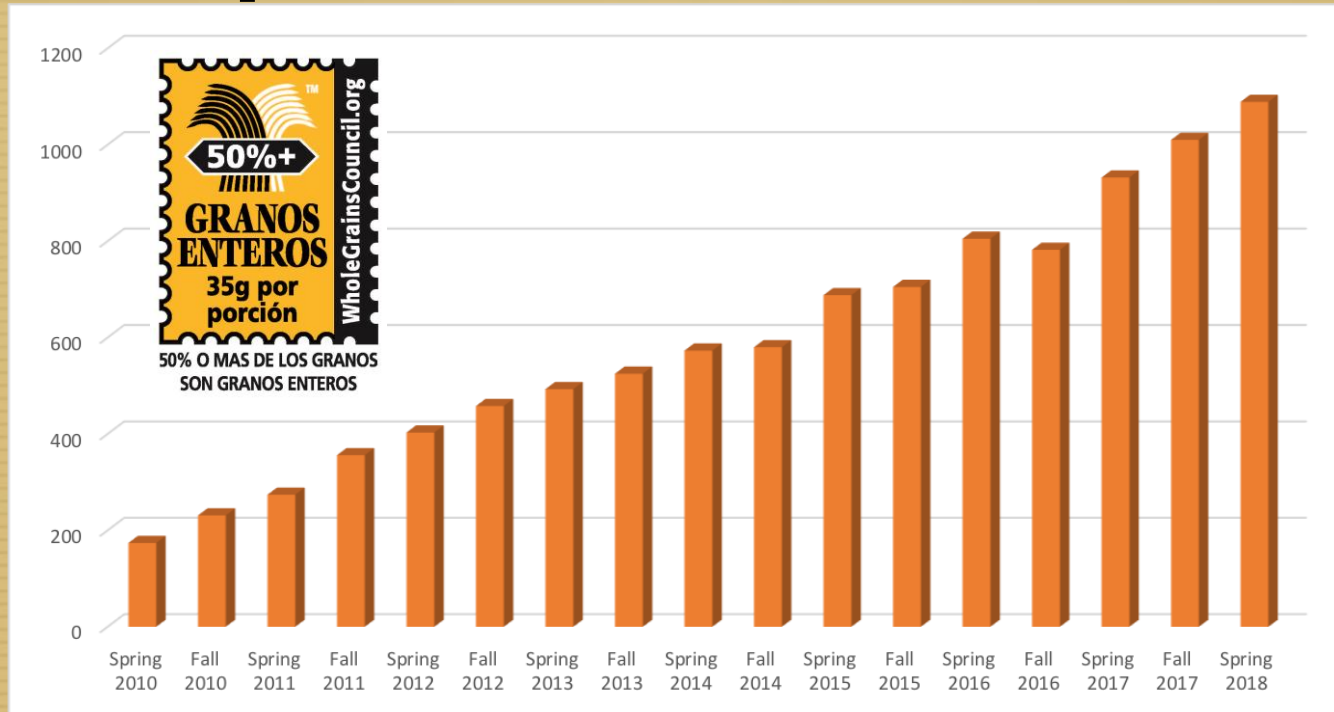
87%

of those who NEARLY ALWAYS CHOOSE
WHOLE GRAINS
FOODS


HAVE INCREASED 
their consumption
compared to
5 YEARS AGO

Oldways 2015 Whole Grains Consumer Insights Survey of 1,500 U.S. adults.

Steady Growth in Whole Grain Stamp Use in Latin America



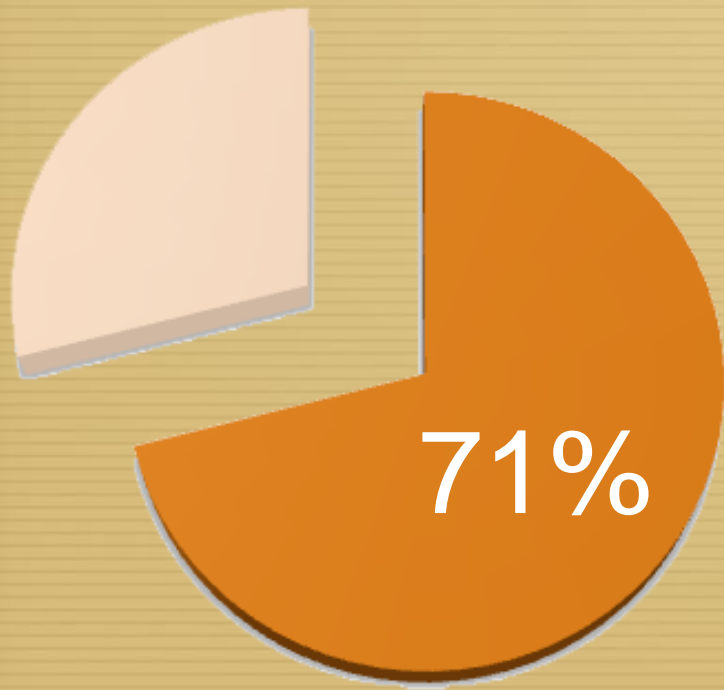
The Whole Grain Stamp is used in nearly all Latin American countries, by multinationals and by local companies.

-  WGC member companies based in
- Brazil (12)
 - Mexico (7)
 - Colombia (2)
 - Ecuador (2)
 - Peru (1)

Stamp Usage in

- Argentina (41)
- Belize (8)
- Brazil (390)
- Chile (37)
- Colombia (116)
- Costa Rica (56)
- Ecuador (58)
- El Salvador (50)
- Guatemala (50)
- Honduras (42)
- Mexico (408)
- Nicaragua (45)
- Panama (43)
- Paraguay (9)
- Peru (44)
- Uruguay (62)
- Venezuela (24)

Global Trend toward Whole Grains



In a 2015 international report, 71% of respondents in sixteen countries – including Mexico – across the Americas, Europe and Asia reported that they wanted whole grains as a source of nutrition in products.

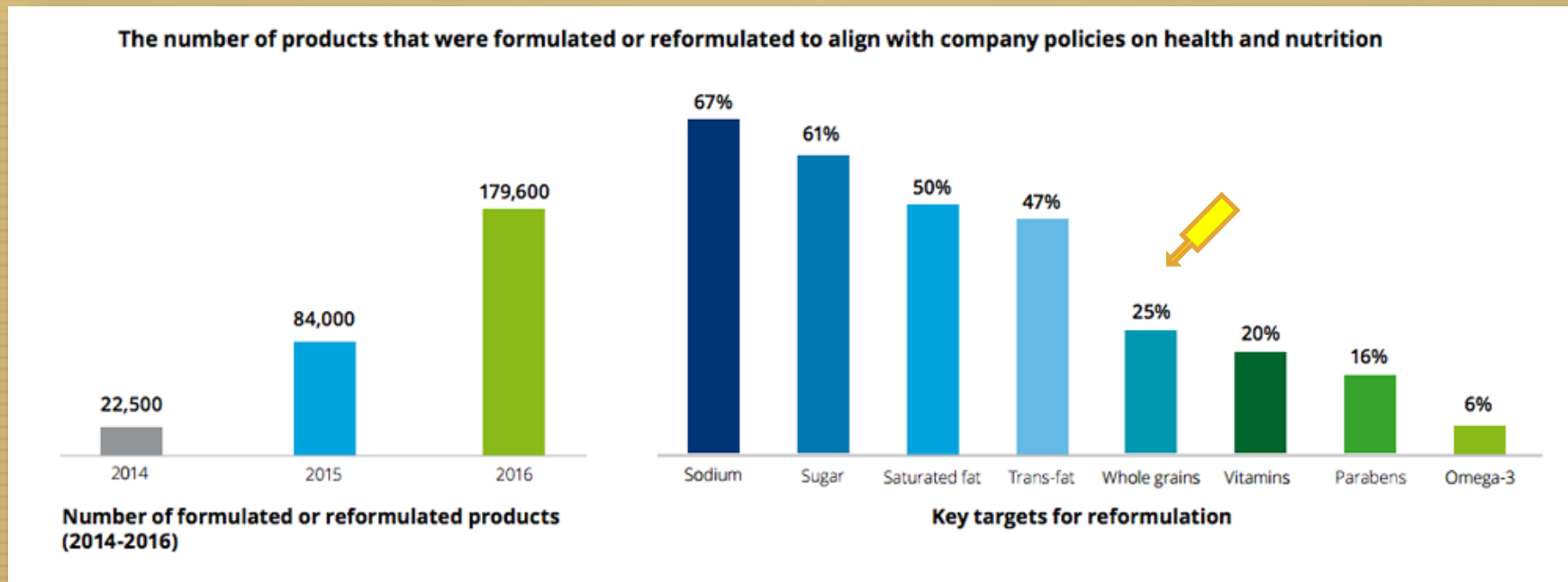
Fiber, Grains and Gluten – a Global Perspective. HealthFocus International. Countries surveyed:

AMERICAS: USA, Canada, Brazil, Mexico

EUROPE: France, Germany, Italy, Russia, Spain, UK

ASIA/PACIFIC: Australia, China, Japan, India, Indonesia, Philippines

Global Trend toward Whole Grains



Deloitte Consumer Goods Forum Health & Wellness Progress Report 2017. Based on a survey of 102 global food manufacturing companies.
<http://www.theconsumergoodsforum.com/files/Publications/201703-CGF-Health-and-Wellness-Progress-Report-Final.pdf>

Whole Grain Summit Goals

1. Definitions. Reach consensus on global whole grain definition, to support clear product labelling that will help consumers distinguish whole grain products from those with misleading claims.

2. Intake Recommendation. Establish science-based whole grain intake recommendation, and document health and economic benefits resulting from its adoption. Use to motivate governments and food authorities to incorporate whole grains into dietary guidelines and actively promote their consumption.

3. Sustainability. Document the carbon footprint of whole grains, compared with other dietary choices, in the context of growing world populations and climate change.

4. Promotion and Education. Form strong public-private partnerships to develop campaigns to encourage whole grain consumption and to increase the variety, availability and desirability of whole grain foods for the public.

6 Takeaway Lessons from Around the World



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<https://commons.wikimedia.org/w/index.php?curid=4594484>

1

**Start a new generation
with new habits**

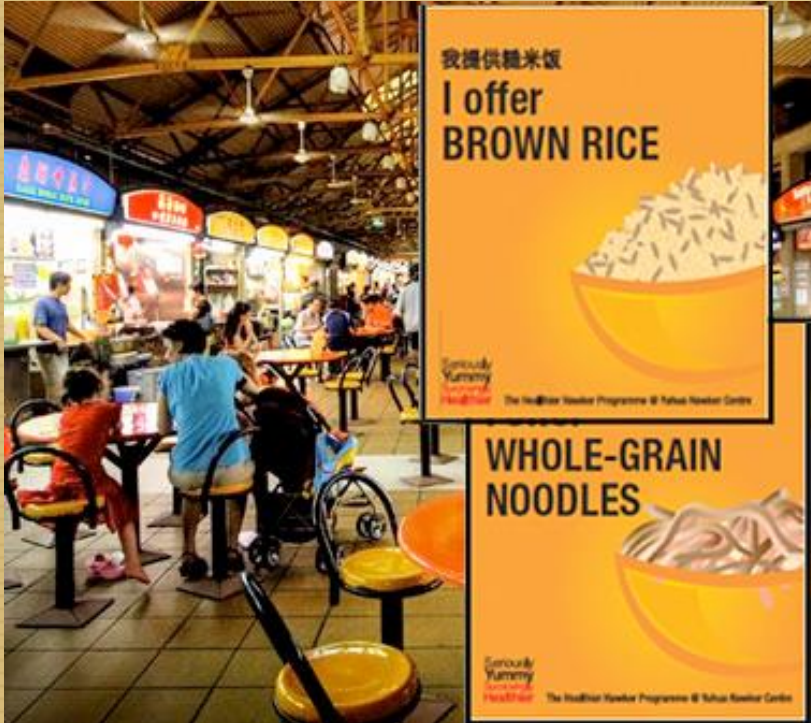
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2

**Encourage foodservice
to serve whole grains
outside of the home.**

3

**Make whole grains
available where people
make individual
choices.**





4

Connect with local food traditions.

In one study in Costa Rica, researchers found that putting more beans in beans-and-rice balanced the flavor of brown rice. “The preparations rated highest for pleasant were the beans:rice 1:1 ratio *regardless of the type of rice.*”

Appetite 2014 Oct; 81:200-8. Monge-Rojas et al.



Arroz
la merced
integral
900 GRS

\$20.27 M.N.



Arroz super extra
la merced
900 GRS

\$18.64 M.N.

5

**Erase the price gap
between whole
grains and refined
grains.**

<https://www.lacomex.com.mx/>



EL 100% DE LOS GRANOS
SON GRANOS ENTEROS



50% O MAS DE LOS GRANOS
SON GRANOS ENTEROS



6

Educate consumers. Help
them easily identify whole
grains.

Thank You • Muchas Gracias



www.WholeGrainsCouncil.org and www.oldwayspt.org