

Whole grain

for better
health



Whole grain for better health



Increasing whole grain consumption represents a major opportunity and challenge for the food industry. Extensive evidence now shows the connection between whole grain consumption and reduced risk of several chronic diet-related diseases. Greater intake of whole grains in the diet leads to reduced incidence of cardiovascular diseases, gastrointestinal diseases, cancer, and diabetes.

To address this opportunity, it is important that stakeholders from government and the food industry are provided with knowledge on the benefits of whole grain and effective strategies that can be implemented to increase whole grain consumption.

The purpose of this whole grain information pack is to:

- highlight the health benefits of whole grains;
- outline global strategic initiatives for defining and promoting whole grains; and
- provide recommendations for increasing whole grain consumption.

Our favoured definition of whole grain is provided by the Whole Grain Initiative, a global consortium of food supply chain stakeholders. The definition states:

Whole grains shall consist of the intact, ground, cracked, flaked or otherwise processed kernel after the removal of inedible parts such as the hull and husk. All anatomical components, including the endosperm, germ, and bran must be present in the same relative proportions as in the intact kernel

Explanatory remarks accompanying the definition outline the inclusion of cereals and selected pseudo-cereals, wet and dry processing methods, recombination and reconstitution of millstreams and unavoidable losses in grain tissue from cleaning of grain for food safety purposes (www.wholegraininitiative.org).

Increasing whole grain consumption can include rice, oats, barley, wheat and other grains. This information pack is primarily directed to increased use of whole grain white wheat, however AEGIC encourages increased consumption of all whole grains.

Whole grain benefits

Health benefits:

By eating three serves of whole grains per day, people can enjoy health benefits such as:

- reduced risk of cardiovascular disease;
- prevention and treatment of type II diabetes;
- reduced risk of some cancers;
- reduced risk of obesity;
- low glycaemic index, leading to greater satiety and sustained energy levels; and
- maintenance of regular bowel movement.

Health benefits of whole grains have primarily been attributed to dietary fibre content. Their fibre content includes insoluble and soluble fibres such as beta glucans. More recently, whole grain benefits have also been attributed to other components including: polyphenols, carotenoids, vitamin E, and phytosterols. In the case of whole grain oats, the beta glucan content has been clearly associated with the lowering of cholesterol.





According to a study that analysed the global burden of disease in 195 countries in 2017, 22% of deaths and 17% of death and disability-adjusted life years (DALYs) are **attributed to low consumption of whole grain** in South East Asia (SEA).^{*}

The study found:

- low intake of whole grain was only second to high intake of sodium, as a leading dietary risk factor for DALYs;
- whole grain intake of <50g per day is associated with 3 million deaths and loss of 82 million DALYs across all countries; and
- low intake of whole grain and fruit and high intake of sodium accounted for more than 50% of deaths and 66% of DALYs globally.

* Ref: GBD 2017 Diet Collaborators, The Lancet: Health effects of dietary risks in 195 countries, 1990-2017: a systematic analysis for the global Burden of Disease Study 2017.

Eating particular food groups can improve health outcomes, and the food group that is most effective in doing this is whole grains. In a study looking at the consumption of different food groups and the impact on disease burden, three serves of whole grain per day reduced all cause mortality by 21%, higher than any other food groups (Figure 1).

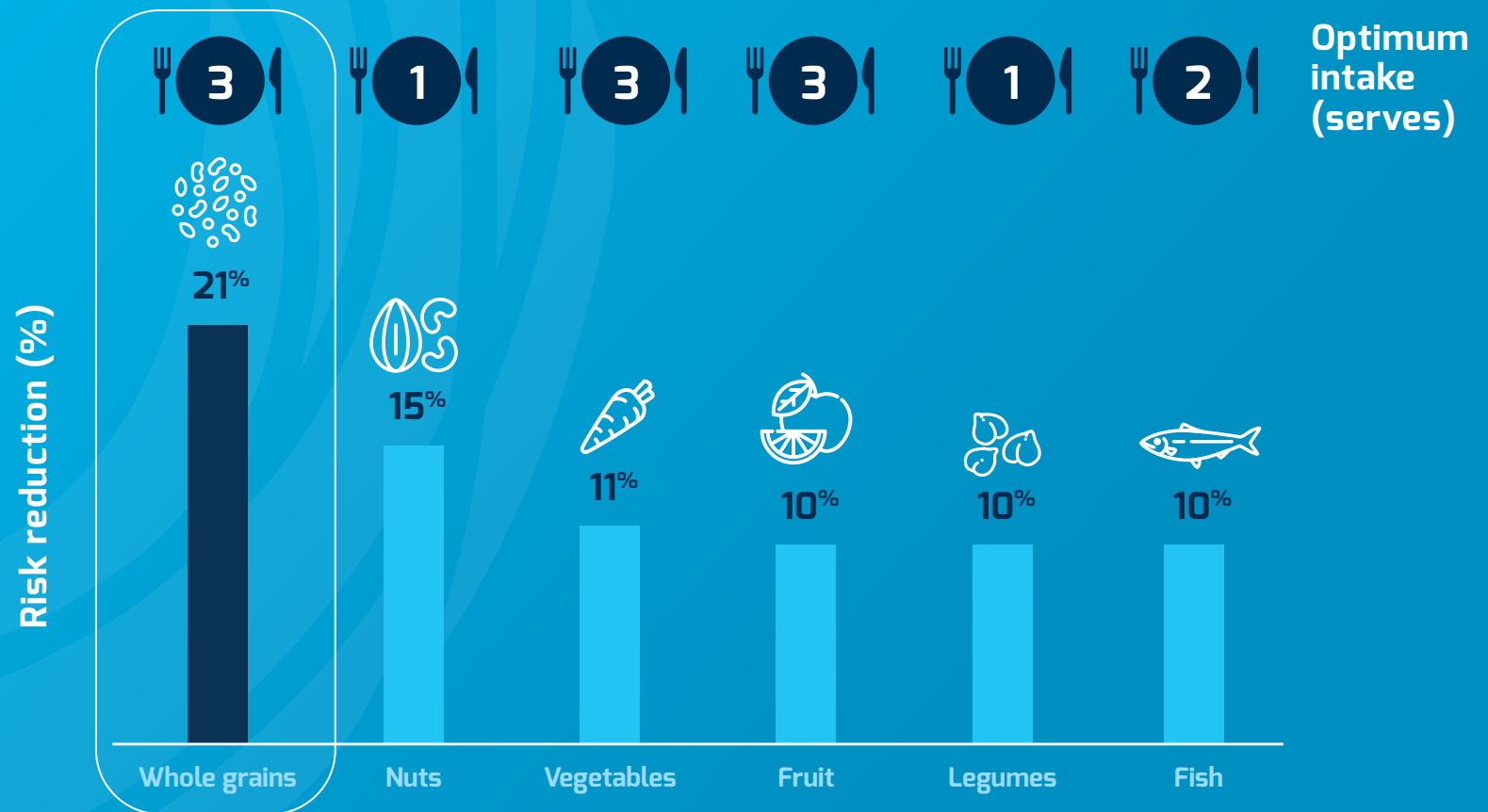


Figure 1. Risk Reduction potential for all-causes mortality for optimum intake of various food groups

Economic benefits

Eating whole grain food prevents many types of chronic disease and increased whole grain consumption can have a profound impact on lowering healthcare costs. The longstanding assumption that communicable diseases exist primarily in developing countries and the chronic diseases are in industrialised countries is no longer true. The economic burden of diets deficient in whole grain and fruit, and high in sodium is now a common issue in high, medium, and low income countries.

A few studies from around the world have estimated the cost of not eating whole grain, this area is still an emerging one and requires more effort to estimate the economic burden of consuming levels below the recommendation.

In Canada, researchers attributed a cost of \$10.8 billion USD/year to failing to meet the recommended levels of protective food intake. Whole grain, nuts and seeds were found to have the highest individual cost impact.

In America, researchers found that the cardiometabolic healthcare costs attributed to low intake of whole grains alone was associated with an average \$45 cost per person (about \$7.5 billion/year USD nationally). Cardiovascular-related healthcare savings associated with increasing whole grain consumption found that if intake was increased to the recommended levels (an increase of 64 grams of whole grain per day), the estimated direct medical cost savings from reduced risk of cardiovascular disease was \$21.9 billion USD annually.

In Australia, 27,500 preventable deaths are attributed to diet, with diets low in whole grain being responsible for an estimated 7,400.

In addition to health benefits, whole grain production provides flour millers with increased efficiency. When flour millers produce whole grain flour they are utilising close to 100% of the wheat they mill, this contrasts with white flour which only represents 75% of the wheat. This makes whole grain wheat flour production more sustainable.

Global strategic initiatives

There are a range of initiatives around the world that share the common goal of raising awareness about the health benefits of whole grain and increasing whole grain consumption. Various stakeholders from around the world have been sharing their strategies in an effort to promote whole grain consumption.



Collaborative partnerships continue to develop between public and private groups that include:

- Whole Grain Initiative Working Group, ICC Vienna; [WGI Working Groups \(wholegraininitiative.org\)](http://wholegraininitiative.org)
- Healthgrain Forum, Europe; [Whole Grain – Healthgrain Forum](http://wholegraininitiative.org)
- The Whole Grain Council, US; [The Whole Grains Council](http://wholegraininitiative.org)
- Cereals and Grains (formally AACC); [Whole Grain \(cerealsgrains.org\)](http://cerealsgrains.org)
- Grains and Legumes Nutritional Council (GLNC), Australia; [Grains & Legumes Nutrition Council \(glnc.org.au\)](http://glnc.org.au)



The following countries have been provided as examples of strategies in place to increase whole grain consumption.



Australia

In Australia, the Grains & Legume Nutrition Council (GLNC) is a not-for-profit charity, working across the grain and legume value chain. GLNC helps the industry value chain by identifying the latest evidence in health and disease and maintains a significant repository of scientific research papers. Through market audits of grain food categories and purchased insight data from MINTEL, GLNC leverages the trends driving product innovation globally to support product claims and help product positioning. This assists the industry with new product innovation.

- **Drive interest in higher value grain products**

Through engagement with industry and promotion of whole grain product innovation, GLNC helps drive interest in higher value grain products benefiting the industry at large. GLNC supports manufactured products by playing an advocacy role in relation to food reformulation (via the Healthy Food Partnership) and front-of-pack labelling initiatives (e.g., Health Star Rating) ensuring that grain and whole grain foods are positioned correctly within Australian Dietary Guidelines. GLNC has a Code of Practice for Whole Grain Ingredient Content Claims, providing guidance for permitted claims. A new Certification system highlighting whole grain content is under approval by the Australian Competition and Consumer Commission (ACCC) and will assist consumers in selecting whole grain products.

- **Promote grain foods**

In order to engage the Australian and New Zealand community, GLNC uses a range of tools to promote grain foods and evaluates all programs and promotions. For example, Bring Back the Sandwich, and Whole Grain Week in mid-June reached over 9.5 million Australians combined in 2020, with messaging focusing on the importance of swapping to whole grain foods and increasing whole grain variety. The Council is also a supporter of the global Whole Grain Initiative and Whole Grain Day in November.



United States of America

■ Consumers outreach and education

The Whole Grains Council (WGC), a consumer advocacy group, houses more than 300 whole grain recipes on their website, and a database of hundreds of whole grain health studies, information about the health and culinary benefits and the policy updates that pertain to whole grains. The Council also collaborates with health professionals and food companies to orchestrate annual whole grain promotional events, including Whole Grains Month and Whole Grain Sampling Day. The US government passed legislation requiring that whole grain be served in the national school lunch and breakfast programs as well as daycare centres.

■ Supporting industry reformulation

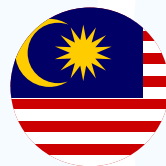
Helping companies to gain credit for their use of whole grains by allowing them to use stamps on qualified products. Companies pay an annual licensing/membership fee that pays for stamp program administration which funds consumer education activities.



Singapore

■ Food service and retail partnerships

In Singapore, the Health Promotion Board (HPB) teamed up with food suppliers and vendors to develop and market partially whole grain products to be sold at the same price as their refined grain counterparts. Food stalls were also incentivised to adopt whole grain options by covering up to 80% of the investment cost. HPB also partners with supermarkets to offer discounts on whole grain foods and drive competition in the market.



Malaysia

- The Ministry of Health has published a comprehensive national plan of action for Nutrition of Malaysia III, 2016-2025. The plan identifies key population health targets, nutritional strategies and enabling strategies. It identifies a target to increase consumption of wholemeal bread, whole grain cereals (breakfast) and whole grain biscuits. To assist these targets the plan lists the following strategies:

- Implement zero GST for whole grain products with a Healthier Choice Logo (HCL).
- Provide incentives (i.e. tax discounts for food manufacturers for production, processing and distribution or importation and marketing of healthier food options).
- Implement tax incentives for manufacturers with research and development facilities in Malaysia for development of healthier foods.





Philippines

- **Appealing to social responsibility/food sovereignty**

Messaging to support increased whole grain consumption has included: the additional energy consumption required to polish rice, the reduction of 10% in yield when rice is polished, and the impact of this on their goal of eliminating their dependency on rice imports.

- **Financial incentives for selling and purchasing brown rice**

Appreciating farmers is one of the four key messages of the BeRicesponsible campaign encouraging consumers to choose brown rice to support the livelihood of farmers. This strategy allowed brown rice to be sold at discounted prices, thus reducing barriers to consumption. Purchasing brown rice also allowed more of the profit to flow to the farmers rather than the millers.



Denmark

- **Leveraging of existing public health campaigns**

Denmark has a strong tradition of consuming whole grains. The reformulation of the national dietary guidelines during the formation of the Danish Whole Grain Partnership (DWGP) as a public private partnership leveraged the existing health guidelines to promote whole grain consumption.

- **Appealing to children**

DWGP made the effort to reach not only adults but children and adolescents by making Danish celebrities serve as whole grain ambassadors in advertisements and social media campaigns. The DWGP also developed cartoons and whole grain heroes in costumes to attract children.

Whole grain challenges



Consumer acceptance

Research carried out by HealthFocus International in 16 countries across Europe, Asia and America indicates that nearly three quarters of consumers would like more whole grain products to be readily available. Manufacturers around the world are responding to this increased demand by reformulating their products with more whole grains. It is very important to be working with industry and changing the food supply while simultaneously working to increase demand for these foods among consumers.

Despite the well-documented health benefits of whole grains, the intake continues to be below recommended levels indicating the importance of promoting increased consumption of whole grains across the globe.

Research has indicated that potential barriers to increasing whole grain consumption relate to:

- Sensory attributes, such as taste and texture.
- Lack of understanding of health benefits.
- Family influence.
- Price and availability of whole grain products.

Ability to correctly identify whole grain foods and having a perception that whole grain foods are higher in cost may be the overarching barriers to consuming adequate amounts. This may be influenced by socioeconomic factors and this should be accounted for in education or promotional campaigns.

In Australia, research showed that increasing exposure to whole grain food choices among low whole grain consumers over six weeks improved ratings of:

- Liking
- Flavour
- Texture
- Willingness to include more whole grains in the diet



Recommendations

Recommendations for increasing whole grain consumption exist in many countries. These recommendations range from general guidance on increasing consumption to quantitative guidelines specifying targeted daily intake.

However, current data indicates there is still a wide gap between recommendations and reported daily intake levels, even in countries who have adopted quantitative recommendations. This demonstrates the importance of broad engagement and collaboration to drive increased whole grain consumption. The following recommendations address: promotion, strengthening the evidence of health benefits, and delivering great tasting food products. It will take a combined effort of government, industry and academia to address these recommendations.

- Implement a program to educate consumers, health professionals, food manufacturers and millers, about the health benefits of whole grains. This can include:
 - school programs;
 - information packages for doctors and;
 - information packages for food manufacturers.
- Implement media campaigns to promote whole grain consumption. This in turn could help the food industry to develop and market new and innovative whole grain products. This could be delivered through social media and public advertising campaigns.
- Provide information that enables consumers to easily identify and choose whole grain food products. This may include food labelling strategies and will also be an important component of education and promotional campaigns.

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- Support the development of whole grain foods that address consumer preferences. The food industry must be supported to develop new food products that deliver better taste, texture and mouth feel for whole grain foods. These foods must be targeted to meet consumer eating patterns.
- Support a program that encourages incremental increases in the percentage of whole grains in foods, together with clear and concise labelling to inform consumers. Often the step to 100% whole grain foods is too difficult for consumers. A better option is to enable whole grain claims on lower levels of whole grain addition. For example, a food made with 25% whole grain content that is enjoyed by consumers will be more likely to increase whole grain consumption than a product made with 80% whole grain content that has poor consumer acceptance.
- Establish public private partnerships, including cooperation between academia, government health-related agencies and industry to fund and facilitate research that supports whole grain consumption. A coordinated approach with investment is more likely to succeed.

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AEGIC looks forward to working with government and industry to enhance consumer knowledge and developing innovative whole grain products that lead to increased consumption of whole grain.

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Australian Export Grains Innovation Centre

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