

Toolbox

A guide to implement
a successful national
whole grain partnership



Toolbox

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Preface

The aim of the WholeEUGrain project is to disseminate experiences from the Danish Whole Grain Partnership (WGP) to other European countries, in order to provide necessary competencies and knowledge on how to initiate and run a public-private WGP and thereby to increase whole grain intake of the national population. This toolbox is developed as a part of the WholeEUGrain project.

The toolbox is a collection of materials identified by stakeholders in the Danish WGP to be of relevance for future initiatives establishing a public-private WGP in other European countries.

Furthermore, this toolbox represent education material for two summer schools held in 2021 and 2022 for the partners in the WholeEUGrain project. All education material will be available to the public and is found at the project website (www.gzs.si/wholeugrain). If relevant, the toolbox can be supplemented with new material, developed during the project. Finally, parts of the toolbox is expected to be included in a European Guideline for public-private WGP.

The material is prepared in English and the participating countries is responsible for translating it in to national languages, if it is found useful or necessary. The toolbox is a compendium of short documents, as well as links to larger documents, scientific articles and reports, located at the internet, organized in five chapters around different themes. All documents can be read and used independently, but if you read all material you will gain knowledge on how to implement and run a WGP. At the end of every chapter you will find some learning question, with the purpose of using the acquired knowledge in the chapter.

Chapters and themes in the toolbox

Chapter 1: Establishing, management, and sustaining public-private partnerships (strategy, setting targets, organization and financing).

Chapter 2: Evidence-base for the recommendation and health effects of whole grain.

Chapter 3: Monitoring consumer behavior, markets and documentation of progress.

Chapter 4: Consumer communication, campaigns, labelling and legislation.

Chapter 5: Product development, reformulation and quality.

We hope you will enjoy the material in the toolbox.

Sofie Lund and Gitte Laub Hansen (Editors).

Solveig Høgh Larsen (Layout).

The Danish Cancer Society.

Chapter 1:

Developing, managing and sustaining a public private partnership

In chapter 1 you will gain knowledge of establishment, running and maintenance of a public private partnership. A step-by-step guide at the end of the chapter will guide you through the whole process of establishing a whole grain partnership. You can use the guide where ever your country is in the partnership process.



Why partnerships? A brief introduction to public-private partnership

“No man is an island” is a quotation from the English metaphysical poet John Donne (1572-1631). The phrase expresses the idea that human beings do badly when isolated from others and need to be part of a community in order to thrive.

The hypothesis in a partnership approach is that only with cross-sector collaboration we can ensure that sustainable development initiatives are imaginative, coherent and integrated enough to tackle the most intractable problems. A Partnership provides a new opportunity for doing development better – by recognizing the qualities and competencies of each sector and finding new ways of harnessing these for the common good (1)

Increasing the whole grain (WG) intake among a population is a difficult task for only one organization to solve. That is why establishing a Public Private WG Partnership (WGP) - with a structured and mutually binding cross-sector corporation between partners which combines all the partners different valuable knowledge, resources and competencies, is a solution to develop new synergies and increase WG intake.

The WGP– how a public private partnership helped increase WGs consumption in Denmark

In less than a decade, the average WG intake of Danes increased from 36 to 82 g/10 MJ/day. The WGP was created due to a growing concern about decreasing WG intake in the Danish population in the mid-2000s. Some of the future partners were concerned by the increasing popularity of low-carb, fat-rich diets that seemed to be part of a general trend leading to a significant decline in the intake of WG breads and a weakened demand for WG products. In parallel with this development, health NGO's became aware of the growing evidence on the health benefits of WGs. Together, these factors provided a window of opportunity for the establishment of a new partnership to promote WG consumption in Denmark. Today 50% of Danes eat the recommended intake of 75 g of WG per day/10 MJ. It was only 6% in 2004. The aim of the WGP is to create target-oriented and effective activities to ensure Danes eat more WG and thereby improve public health. The objective is achieved through a unique partnership across sectors and disciplines including governmental authorities, health NGO's, business, trade and retail. The mission is to increase the accessibility of tasty WG products and increases awareness of beneficial effects of WG. The WGP consist of 29 partners.

The WGP developed an orange WG logo to put on products with a high WG content that also meet the criteria for the Nordic governmental green keyhole for content of fat, sugar and salt. Today, there is 1.097 products with the orange WG logo in Denmark and 64% of Danes knows the logo and 80% of them also look for the logo when buying products.

“The Danish Cancer Society cannot ensure the production of WG bread to the Danes. But by working together with producers – we can motivate and inspire for it to happen”. Gitte Laub Hansen, Project Manager, The Danish Cancer Society

There is a great potential in establishing your own WG Public Private Partnership (PPP).
Let's get started!

What is a whole grain partnership and the partnership objectives?

What is a WG partnership?

In a WGP, organizations from the public sector and the private sector work together to increase WG intake. In the Danish WGP, the partners are: The Government – the Danish Veterinary Food Administration (DVFA), Health NGO's: The Danish Cancer Society, The Danish Heart Association and The Danish Diabetes Association and producers of bread and grain products, retailers and trade organizations. We divide them into three stakeholder groups: 1. Authorities, 2. Health NGO's and 3. Business.

The vision of a WGP is to improve public health and to assure availability of WG products. All partners play an important role in achieving the common vision. All partners contribute with their strengths and skills. Even though partners have different values, priorities and attributes they can gain from this new opportunity to develop better solutions by recognizing the qualities and competencies of each stakeholder group. And finding new ways of harnessing these for the common good (1).

The DVFA (Authorities) is responsible for the enforcement of the WG logo criteria. DVFA communicates the importance of WG as part of a healthy diet through educational materials for the public, and also contributes to the legitimacy and promotion of WG through the dissemination of the national dietary guidelines. Health NGO's also contribute to the trustworthiness of WGP campaigns and endorsement of the national dietary guidelines. They communicate information about the health benefits of whole grains and their risk-reducing effects on lifestyle diseases. Partners from the food industry (business) are responsible for the supply of tasty WG products that meet the WG logo criteria and the reformulation of products that do not yet meet these criteria. They communicate on package labeling and application of the WG logo as well as marketing and PR activities. Retailers ensure distribution and marketing of WG products. The WG logo gives partners a competitive advantage in the market and has helped expand the market for WG products.

The partnership objectives

It is important that objectives can be measured. When reaching an objective, it creates excitement and motivation within the WGP to continue the effort. As the partners may have different interests, one objective might motivate one stakeholder group more than another. It is not a challenge if the objectives assure that all partners' interest is covered. All partners can agree that increasing the average daily intake of whole grains is the most important objective. In addition, manufacturers and commercial partners are very interested in the development of sales and logo awareness. Health NGO's and the DVFA are very focused on increasing WG consumption among the people who eat the very least WG in order to improve public health.

When establishing a WGP you will meet obstacles and limitations – but well prepared – they can be addressed and resolved.

In the next pages you can read more about how to build and develop a WGP. How to manage a WGP and last how to maintain a WGP.

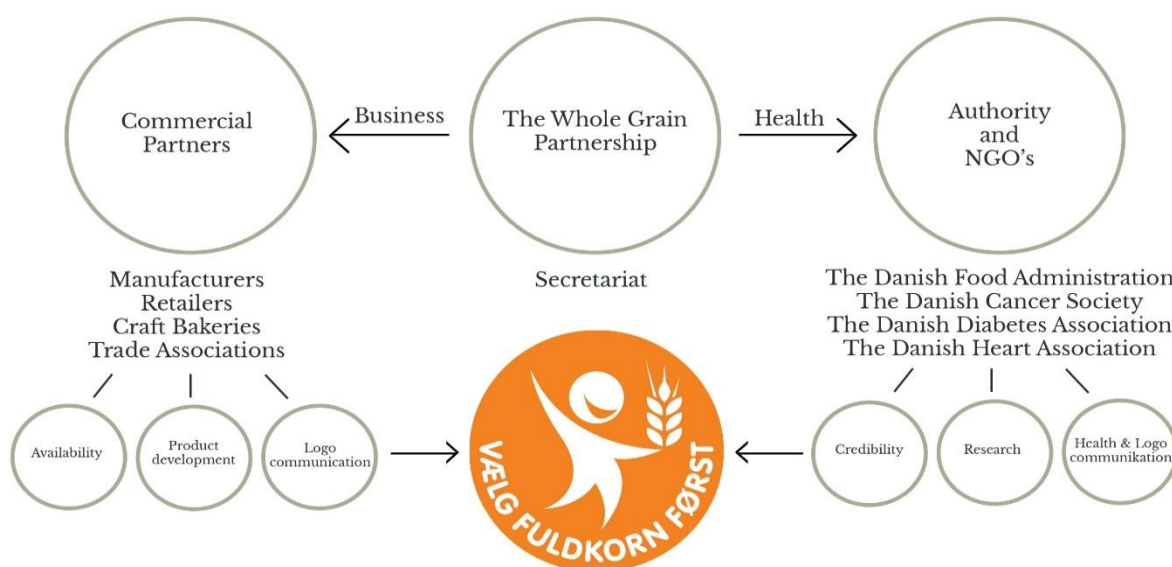
We recommend inviting all interested stakeholders to a workshop to start up the collaboration.

Developing the partnership

Identifying partners and roll distribution

Map potential partners by identifying which contributions is needed to succeed. Identify the type of partner, and how they can add value to the WGP and how they can gain value from the WGP. At the same time secure involvement and commitment both in the process of planning the WGP and in the operation of the WGP.

It is a long process. It took almost 2 years to establish the Danish WGP. To identify potential partners, to agree on common goals and objectives, to compile an evidence base and a WG recommendation. Also, to establish a secretariat and a common strategy, action plans and operate. Below contributions from the partners within the Danish WGP is illustrated, for inspiration:



Risk and obstacles

When establishing a WGP it is important to discuss the possible risks and obstacles and how to address them. Partners share risk but also gain from the partnership, when mutual trust and respect are maintained.

Example: 'A case with a WG product, carrying a common WG logo that does not live up to the criteria for a certain whole grain content in the product - agreed by the WGP'. It might affect all partners negatively if the press writes about it. In that case it is important to roll out a strong PR Q&A to prevent further damage on the WGP. It is crucial that partners respect and obey the common rules and agreements within the WGP, to avoid this from happening. Be aware of conflicts of interest and accept that a partner can work for different agendas at the same time. A bread producer can both be producing healthy WG products and at the same time produce unhealthy pastry. It could be perceived negatively because the pastry can increase obesity, which conflicts with the WGP idea of improved public health. Talking openly about it in the WGP you might reach an understanding, that even though the company produces pastry – it is highly positive that they also produce healthy WG products and the WGP can motivate to also add a little bit of whole grains into the pastry. If conflicts occur, it is important to resolve by focus on what gathers the partners than what separates. Our experience in the Danish WGP is that openness in the relationship with the partners pays off. And to involve the partners at an early stage, if new solutions is needed and ensure a frequent dialogue with the partners. It is also important to ensure all partners have the needed resources available both economic and manpower to participate in the partnership (meetings, activities etc.).

Strategy and action plans

A strategy is a high-level plan to achieve one or more long term goals. For inspiration the Danish WGP's six-fold strategy is based on the beneficial effects of whole grains and documentation of the partnership's results. The strategy: 1) Increase availability of tasty WG products 2) Promote the development of new WG products and the incorporation of whole grains in all cereal-based products 3) Promote WG logo and inform Danes about the health benefits of whole grains and dispel myths about whole grains 4) Help shape new norms for whole grains through campaigns, events and structural changes. 5) Be a source of Inspiration and Best Practice example 6) Promote whole grains as a climate-positive food.

Even though dietary changes take time the WGP objectives in Denmark have been ambitious from the beginning. New objectives regarding awareness of WG logo and its use by consumers and the number of WG logo-labeled products and the sales growth of WG products are regularly monitored and evaluate the WGP performance. Also, it is important to define a target group – even though it might be the whole population, there can be special emphasis targeted specific groups in the society. The objectives from the strategy can be divided into yearly goals in a yearly action plan with clear descriptions of how to reach the goals.

Budgets

The WGP must decide a budget for operating the WGP and decide a partnership fee. It can be difficult to determine the amount of the partnership fee, because partners may vary in size and purpose. Make sure the funding model is fair.

Agreements

Create a solid partnership and corporation agreement that sets out the code of conduct for interaction, including a compliance strategy. Establish rules on who can join the partnership. Make sure that each partner's expectations are addressed.

Decisions and workflow

Partner group: Sign a three year contract
2-3 partner meetings each year

Board: Decide strategy and yearly action plans and budgets 3 meetings each year

Secretariat: Execution of board decisions action plans and campaigns, meeting and managerial support, 2 employees and 1 student

Working groups: PR, New markets, Whole grain products, without the logo



Management and maintaining a partnership

The leader of the partnership and the management of the partnership

To create a well-functioning WGP it is critical to ensure professional management that promote equality, transparency and democratic decision processes and at the same time support a clear distribution of roles among partner organizations. The leader of the partnership is responsible for the daily management of the WGP, serving board operations, managing stakeholders and coordinating campaign activities. The secretariat develops action plans in collaboration with the partners, develops and implements awareness campaigns and other activities for partners as well as coordinates workgroups and manage both internal and external communications. The leader must be able to maneuver between all the different partner organizations and collaborate with everyone. An open mind, patience, self-confidence, risk-oriented, flexible and selfless are the characteristics that characterize a good partnership leader (2). The manager must be able to expand boundaries and build personal relationships and could act and create momentum in flat hierarchies. The experience of the WGP in Denmark is that it is appropriate to hire an external person as partnership leader and establish an independent secretariat referring to a board with members representing all three stakeholder groups. It ensures that everyone's interests are taken care of. The board is responsible for making decisions regarding and approving strategy, yearly action plans, budgets and partnership financing.

Activities, partnership meetings, social media and newsletters

To reach the objectives, partners can agree on several activities in a yearly action plan. Seminars, workshop, events e.g. planning a yearly WG day. Develop focused communication campaigns that brand the partnership and reinforce the key message. Develop educational materials (e.g. for vocational schools, retail employees, bakers etc.), recipe books and PR. Create dynamic activities that attract interest. Create the framework for interesting meetings and attractive meeting spaces. In the beginning of a WGP, it is recommended to arrange partnership meetings 4 times annually and when fully established twice a year. If the geographical distance is a challenge to meet, use Skype meetings. At the meetings the partners can decide new actions, evaluate, get inspiration e.g. through external speakers or workshops. In addition, the WGP can decide to be present at social media platforms to increase knowledge to WG and WG products. Monthly newsletters for the partners are a way of staying top of mind.

Performance and reporting

It is important to document and follow up on targets and activities. Make sure the participants can see they are benefiting from the partnership. It motivates and creates excitement in the WGP and inspire new partners to join in and existing partners to continue in the WGP.



Maintenance and progress

A structured approach is recommended. As mentioned above, newsletters, contact by phone/email/physical meetings with each partner and in groups are ways of keeping in touch on a regularly basis. Be precise about who is doing what and find the synergies between partners. Make sure that the partnership has support from the partner's organizations and acknowledge the time and commitment needed from each participant. Create excitement and make partners proud of being part of the partnership.

New partners

Invite new partners to participate. Focus on skills that may not be in the partnership yet.

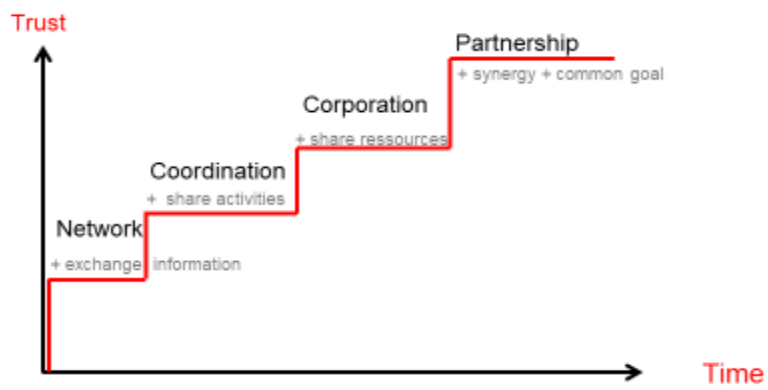
Maintaining the partnership

Partnership in the long run

One of the biggest challenges to partnership sustainability is the issue of long-term resourcing (1). Partners need to continue to pay partnership fees and have resources allocated to keep up the good work. A WGP need to have a future strategy – maybe even from the beginning of the partnership. “What happens if we reach the recommendation of whole grains? – do we continue, or do we end the partnership?”. “What happens if partners or stakeholder groups leave the partnership?”. “What happens if the partnership determinate?”. It is appropriate to describe the different scenarios in the corporation agreements from the beginning.

Set new goals and sharing good experiences

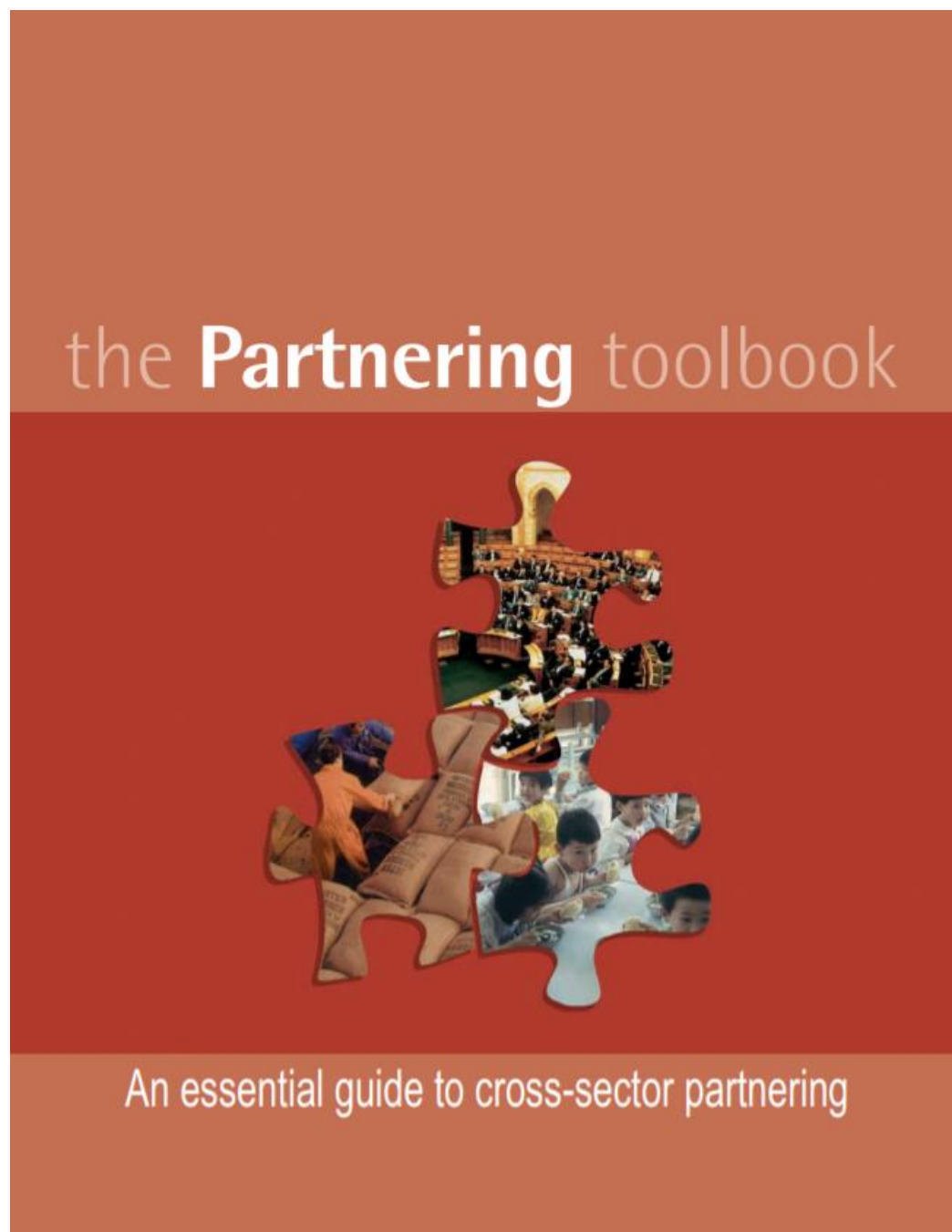
To strengthen and continue the partnership in the long run is to continue to formulate new strong objectives. Look for new opportunities to corporate. Work with new target groups. Also, begin to collaborate with external stakeholders outside the partnership. Without damaging the partnership. E.g. collaboration with famous ambassadors, educational institutions, new stakeholders who can add some WG into new and existing products. Collaborate with stakeholders with platforms that reach many people e.g. canteens and public schools. Share “The good story” and experiences working within a Public Private Partnership. Begin to inspire others to do the same – and promote the partnership as a positive form of collaboration. Always listen to partners and look for synergies. Maintain to nurture good relations and exceed expectations of what a partnership can accomplish.



The characteristics of a well-functioning partnership is a high-level mutual trust among partners that grows stronger with time.

The Partnering toolbox. An essential guide to cross-sector partnering

[Read a practical tool book on how to build successfully partnerships.](#)



The Whole Grain Partnership – How a public-private partnership helped increase whole grain intake in Denmark

In the scientific article the process for establishing and organizing a public private whole grain partnership is described in order to increase the intake of whole grain in the Danish population.

Please notice: The article is not available, you have to pay for it to get access. The article will be handed out at the first summer school, May 2021

Features

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The Whole Grain Partnership—How a Public–Private Partnership Helped Increase Whole Grain Intake in Denmark

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Abstract

In less than a decade, the average whole grain intake of Danes increased from 36 to 63 g/10 MJ/day. In this article the history, organization, and results of the long-lasting Danish Whole Grain Partnership are described. The evidence providing the foundation of the partnership's work, important lessons learned, and key strategic elements are also discussed. The ultimate aim is to gather recommendations for the international community on how to engage in public-private partnerships with the purpose of promoting healthy diets.

Consumption of dietary whole grains helps prevent noncommunicable diseases (NCDs) such as cardiovascular diseases, type 2 diabetes, and colorectal, pancreatic, and gastric cancers (3,13). Whole grain intake also has a beneficial effect on body weight, waist circumference, and body fat mass (13). Despite these benefits, 92.4% of the global adult population does not meet recommendations for whole grain intake, and in fact, whole grain intake decreased between 1990 and 2010 (17). In Denmark, whole grain intake similarly decreased during the 1990s and 2000s (8,14), and the Whole Grain Partnership (WGP) was established to counteract this development. In this article, we describe the development of this public-private partnership, results achieved so far, lessons learned, and implications for future initiatives.

The WGP was created due to a growing concern about decreasing whole grain intake in the Danish population in the mid-2000s. Some of the future partners were concerned by the increasing popularity of low-carb, fat-rich diets (e.g., Atkins) that seemed to be part of a general trend leading to a significant decline in the intake of whole grain breads (i.e., traditional Danish rye bread) (10). At the same time, millers, bread producers, and bakeries were experiencing

A Step-by-step guide to establish and run a public private whole grain partnership

In this step-by-step guide you will be guided through several steps in the process from the establishment of a public private whole grain partnership to the running and maintenance of it.

Steps	Organization	Documentation & Evidence base	Communication	Availability
1	Map potential partners for a future WG partnership and perform a stakeholder analysis. Set up a task force to drive the processes forward towards the formal formation of a WG partnership.	Update the evidence base for WG health benefits.	Identify and describe the different target groups among the <ul style="list-style-type: none"> - Public (primary) - Professional, key people (secondary) - Partners existing and potential 	Identify main sources and potential sources of WG Identify food businesses willing to engage in reformulation and development of new products
2	Develop a model for financing a WG partnership. Define and describe the different partner roles. Describe a code of conduct.	Find existing data sources on: <ul style="list-style-type: none"> - Dietary habits, focus on WG intake. - Number of WG products and their sales. - Consumer knowledge, attitudes, buying behavior. 	Map the channels for consumer communication <ul style="list-style-type: none"> - commonly owned - Individual partners - Other Develop partnership owned media platforms; website, recipes database, different SoMe platforms (FB, IG, LinkedIn aso)	Identify incentives and barriers for reformulation and development of new WG products among food businesses Identify incentives for adding WG in small amount to existing products
3	Outline a partnership agreement, and ask the potential partners to sign it Describe a model for organizing the work and rules of procedures for the different bodies; board, work groups and partnership meetings	When lack of data sources of: <ul style="list-style-type: none"> - WG intake. - Consumer knowledge. - Buying behavior, or - WG supply of good quality, develop methods for data collection 	Make a communication and media plan, including PR and PA strategy Select medias paid and owned; public campaign, SoMe, education material, meetings and conferences	Develop criteria for WG product for the different categories Develop a front of pack labelling or a WG branding Develop a peas pledges scheme for producers, retail and food service sectors

4	Establish a secretariat to coordinate the WG activities, execution of decisions and managerial support	Set objectives and Monitor on a regular basis	Develop and execute communication activities	Food businesses develop WG products, ensure quality and test them among consumers before marketing them They should be aware of pricing and presentation
5	<p>Develop a long-term strategy and yearly action plans and execute them</p> <p>Map external stakeholders (not members of the WG partnership), that can assist fulfilling WG partnership goals by integrating WG in their activities</p>	Follow-up on targets, celebrate successes and set new targets for WG intake, knowledge and supply	<p>Evaluate impact of activities</p> <p>Use the experience to develop the next communication activities and continuously find new ways of communicating WG messages to the public that ensures the demand for WG products</p>	<p>Evaluate:</p> <ul style="list-style-type: none"> - product quality and - performance among consumers - number of WG products and the WG content <p>Identify further incentives for reformulation and new products that ensures the supply of tasting WG products</p>

Learning questions for Chapter 1:

- 1) What is in it for me? Perform an analysis of the national successes of establishing a public private partnership
- 2) What is my role or the role of my organization in a future partnership?
- 3) Identify key partners and describe their main contributions
- 4) What are the risks getting involved in the partnership?
- 5) How do we organize and ensure transparent decision processes?
- 6) How do we finance a whole grain public private partnership?
- 7) How do we attract more partners and develop the partnership on an ongoing basis?

Chapter 2:

Evidence-base for the recommendation and health effects of WG

In chapter 2 you will gain knowledge of how to define and report whole grain intake as well as the potential health effects and reduction of risk of several life-style diseases (cancer, type 2 diabetes and cardiovascular disease) as a result of an increased whole grain intake.



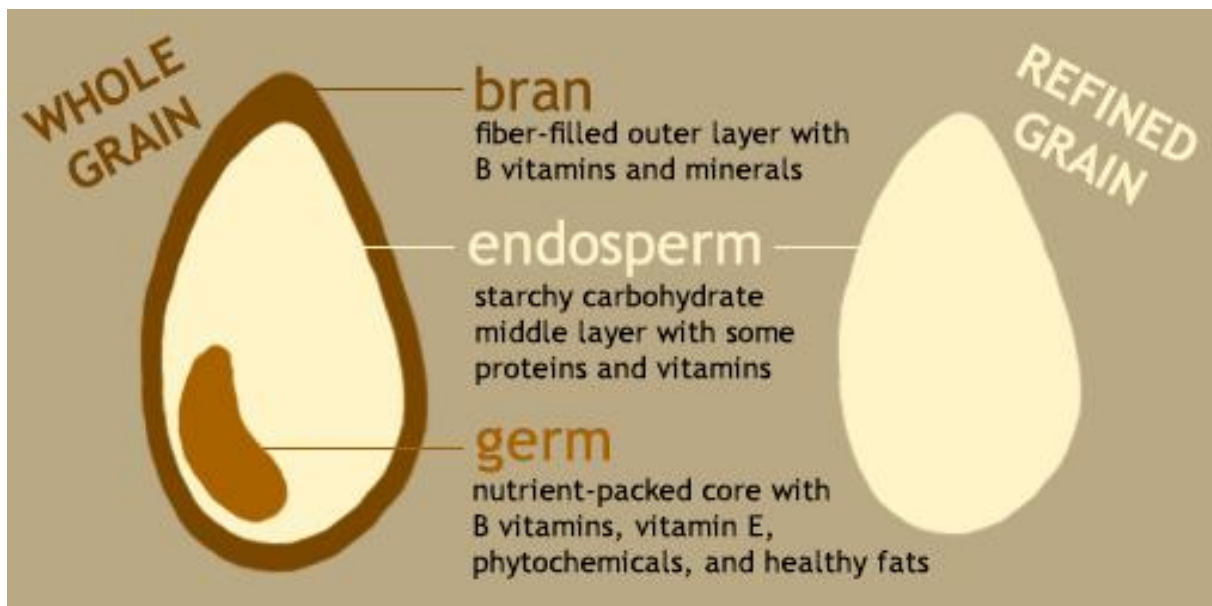
What is Whole Grain?

In the short introduction you will be introduced to WG, its nutritional properties and potential health benefits. It forms the basis of exploiting the rest of chapter 2.

Definitions

The term "grain" applies to the species of the grass family and includes the cereal grains wheat, rice, barley, maize (corn), rye and oats and the term "pseudo cereals" applies to amaranth, buckwheat, quinoa and wild rice. Oilseeds, and pulses and other legumes are so far not classified as grains (3).

All these grains are structurally similar and are composed of three distinct sections: Bran, endosperm and germ.



WG kernel vs refined grain with the individual components indicated. The illustration is originated from (4).

Grains can be rolled, crushed, or cracked. Nonetheless, as long as these three parts are present in their original proportion, they are considered WG.

WG products

The amount of WG in bread and other food products can vary, from just a few up to 100 percent. There are different standards for the content of WG in food product to be called or claimed a WG product, in the different countries. In Denmark, there are category specific standards not only for the WG content, but also requirements for the content of fiber, fat, sugar and salt, in order to use the WG logo on food products. This ensures high nutritional standards for the WG products labeled with the WG grain logo.

Nutritional value of WG

Fiber: The bran provides most of the fiber content

Vitamins: high in B vitamins, including niacin, thiamine, and folate

Minerals: Source of zinc, iron, magnesium, and manganese.

Carbohydrate: WG contain complex, high-quality carbohydrates representing an important source of energy in the diet

Protein: WG contain several grams of protein per serving.

Antioxidants: Many compounds in WG act as antioxidants. These include phytic acid, lignans, ferulic acid, and sulfur compounds

Plant compounds: WG deliver many types of plant compounds that play a role in preventing disease. These include polyphenols, stanols, and sterols

Health benefits and WG

At present the evidence demonstrating a strong association between a higher intake of WG and a reduced risk of several chronic disease, including cardiovascular disease, diabetes, obesity and some cancers, is mounting.

Cardiovascular Disease: Research consistently demonstrates that high intakes of WG is associated with a 20 % reduced risk of overall cardiovascular disease and coronary heart disease (5,6).

Diabetes: A growing body of evidence suggests that high consumption of WG is associated with reduced risk of type-2 diabetes and associated mortality by 20 to 30% compared to those eating a little or no WG (7,8).

International Diabetes Federation recommends consumption of WG in the prevention and management of diabetes (9).

Cancer: World Cancer Research Fund concluded in 2018 that there is a strong and growing evidence that WG consumption probably reduces the risk of colorectal cancer. This conclusion is based on consistent data from several prospective cohort studies that show a statistically significant and clear dose-response relationship showing a decreased risk of cancer with increased consumption of WG (10). The European Union Code against Cancer recommends consuming WG as part of a healthy diet (11).

Obesity: World Cancer Research Fund concluded in 2018 that there is limited evidence that intake of WG might decrease the risk of weight gain, overweight and obesity (12). The WHO (World Health Organization) recommends eating plenty of WG as a strategy to reduce obesity (13).

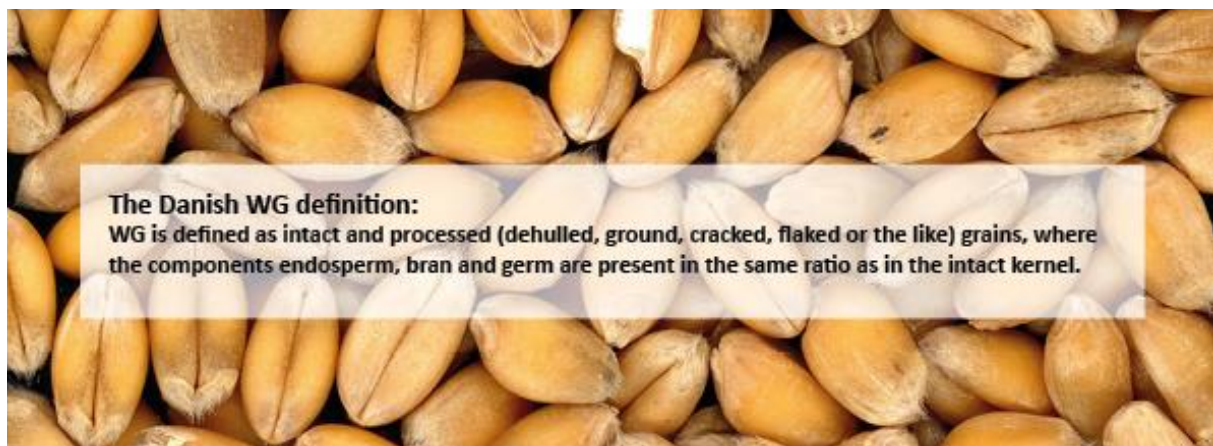
The definition of Whole Grain

Grain kernels consist of three main parts: endosperm, bran and germ (embryo), with the bran and germ containing the majority of dietary fiber and other bioactive compounds. The ratio of the three parts varies between and within the different plant species as well as with grain size.

At present, more than one generic definition of WG exists, and WG and its products are still not defined completely in some countries in Europe. A WG definition is necessary for health authorities and other stakeholders in order to develop national dietary recommendations, labelling of product as well as for nutrition research purposes. Defining WGs as an ingredient is the first challenge, and defining WG food another. Primarily, emphasis should be on the way WG is being used in food processing and thus consumed as this is the basis of the dietary questionnaires in epidemiological studies and subsequently recommendations. Secondly, the definitions and criteria for WG foods should be developed for labeling purposes.

The Danish WG definition

In Denmark, a definition of WG was established in 2008 in combination with development of a national quantitative recommendation of WG intake. In addition, the definition and quantitative recommendation formed the underlying basis of the Danish dietary recommendation: “Choose whole grains” (14).



The definition of WG includes kernels from the following genera of the grass family Gramineae: barley, oat, wheat, rye, rice, millet, maize (dried maize) and sorghum (14).

The Healthgrain Forum definition

During the Healthgrain EU project period, the project consortium identified the need for development of a WG definition suitable for both dietary recommendations and labelling purposes.

The definition was developed with the scope mentioned below:

1. The definition had to be more comprehensive than existing definitions used in most EU countries
2. It should be one generic definition applicable in all European countries – and where possible equivalent to definitions outside EU, especially the AACC International definition
3. The definition should reflect current industrial flour manufacturing practices

4. The definition should be useful in the context of nutrition guidelines and for food labelling

As a result, of the Healthgrain EU project, the WG definition was developed in 2010 through a range of discussion meetings and consultants by a multidisciplinary group (15).

The Healthgrain WG definition:

WGs shall consist of the intact, ground, cracked or flaked kernel after the removal of inedible parts such as the hull and husk. The principal anatomical components – the starchy endosperm, germ and bran – are present in the same relative proportions, as they exist in the intact kernel.

Small losses of components – that is less than 2% of the grain/10% of the bran – that occur through processing methods consistent with safety and quality are allowed.

The following grains are included in the Healthgrain WG definition:

Cereals: wheat*, rice%, barley[‡], maize (corn), rye, oats (including hull-less or naked oats), millets, sorghum, teff, tricale, canary seed, job's tears, fornio (black fornio, asian millet).

Pseudo cereals: amaranth, buckwheat, quinoa. Wild rice (15).

*including spelt, emmer, faro, einkorn, kamut, durums

% included brown, black, red and other coloured rice varieties

[‡] including hull-less or naked barley but not pearled

Defining WG products

As well as different WG definition exists, WG foods are defined differently across countries. In Denmark, for a product consisting WG to be classified as a WG product, it is required to contain a minimum of 50% of dry matter content from WG ingredients. The definition from Healthgrain forum recommend that food products can be labelled as a WG product if it contains at least 30% WG in the overall product on a dry weight basis and the percentage of WG ingredients should be higher than the percentage of refined grains (16).

Criteria for reporting whole grain intake have varied widely, resulting in difficulties in precisely exploring the relation between intake of whole grain and their components and the various health effects. [Learn about how you can measure whole grain intake to ensure useful intake data](#)

Recommendations for reporting whole-grain intake in observational and intervention studies^{1,2}

Alastair B Ross, Mette Kristensen, Chris J Seal, Paul Jacques, and Nicola M McKeown

ABSTRACT

The finding that people who eat the most whole grains have a lower risk of cardiovascular disease and diabetes, compared with those who eat the least, is one of the most consistent findings in nutritional epidemiology. However, criteria for reporting whole-grain intake have varied widely, making it difficult to precisely explore the relation of whole grains and grain components with health outcomes. To enable better understanding of the health benefits of whole grain-rich diets, we propose that both observational and intervention studies should as far as possible be required to report as follows when describing whole grains: 1) quantify the amount of whole grain in the food or product in grams on a dry-weight basis, 2) describe the whole-grain definition used, 3) report and separate the different types of grains used, 4) if possible, report the structure of the grains (intact, crushed, partially milled) in foods, and 5) describe the main types of products used and processes used to make them. Added bran and germ should be reported distinctly from whole grains. In addition, we strongly recommend the incorporation of biomarkers of whole-grain intake to check compliance to intervention diets and help attenuate for errors in dietary recall of whole-grain intake. Of these measures, reporting whole-grain intake in grams is essential for future research work in the area. Improving reporting

Several recent studies have raised questions regarding the value of emphasizing whole grains over bran or fiber in the diet (7–11). Although the purpose of this article is not to enter into the debate on the relative merits of promoting whole grains, bran, or fiber, it is important to recognize that whole grains are a major contributor of dietary fiber (12) and that there is substantial colinearity between estimates of whole-grain intake and cereal fiber intake in observational studies. As for fiber, bran (both total and added) is significantly associated with whole-grain intake ($r = 0.75$ – 0.78) (13, 14) because most bran consumed comes from whole-grain foods rather than added bran or bran as a food ingredient. Observational data suggest that >75% of bran intake is from whole grains (15).

Although the relative benefits of the whole grain or its components can be debated, it is clear from the recent American Society of Nutrition position paper on cereal fiber, whole grains, and bran (8) that there is a need for better reporting of the intake of whole-grain and related cereal fractions in both observational and intervention studies. In a recent meta-analysis of whole-grain intervention studies (1), whole-grain interventions included varied greatly in both the types of grains included (wheat, rye, oats, barley, mixed grains,

Summary of the report “Wholegrain Definition and scientific background for recommendations of whole grain intake in Denmark”

In 2008, a comprehensive Whole Grain report was published in Denmark. The report functioned as a cornerstone for the establishment of the Danish whole grain partnership.

Read an English summary of the main findings from the report below.

Hitherto neither an official Danish definition of the concept wholegrain nor rules/guidelines for the wholegrain content of foods claiming to be wholegrain foods existed. In addition, there has been no quantitative recommendation for wholegrain intake in Denmark, only a suggestion in the Dietary Guidelines (2005) to eat “coarse” foods, plus some overall considerations about the type of grain products one should choose.

Grains consist of three fractions: endosperm, bran, and germ. Wholegrain is defined as intact and processed (dehulled, ground, cracked, flaked or the like) grain, where the fractions endosperm, bran and germ are present in the same proportions as in the intact grain. Studies show that the level of milling affects the way wholegrain is digested and metabolised, and the resulting nutritional and health effects. However, data does not support a limit for milling, where the positive effect on health is larger than the negative. Therefore, the current definition does not take level of milling into consideration.

The definition of wholegrain includes grains from the following genera of the grass family Poaceae: barley (*Hordeum*), oat (*Avena*), wheat (*Triticum*), rye (*Secale*), rice (*Oryza*), millet (*Panicum*), maize (*Zea*; only as dried maize) and sorghum (*Sorghum*). The definition includes grains from species, hybrids and cultivars from the above mentioned genera.

A distinction is made between wholegrain and wholegrain products. The concept “whole grain” refers to the grain itself, whereas “wholegrain products” are foods containing a minimum amount of wholegrain. Wholegrain should contribute considerably to foods being labelled as wholegrain products, and the term wholegrain should only be used on the following foods and food groups: flour and grains (including rice); bread and crisp bread; breakfast cereals; pasta and noodles. Flour and grains must be 100% wholegrain. Foods containing other ingredients than wholegrains should contain more than 50% wholegrain in dry matter (> 51%). If a product is claimed to contain wholegrain (e.g. by using a label), the wholegrain content must be declared according to predetermined instructions (Quantitative Ingredient Declaration, QUID). A content of > 51% of dry matter corresponds to a wholegrain content of at least 35% for bread, and at least 55% for crisp bread, breakfast cereals and dry pasta and noodles, according to QUID.

Basically grains have the same anatomical structure, but important differences exist in chemical composition, which affects nutritional value and functional qualities. The outer cell layer of the endosperm (the aleuron layer) has thicker cell walls and a different chemical composition than the rest of the endosperm. For example, the aleuron cells have a higher content of dietary fibres and essential amino acids (e.g. lysine) than other parts of the grain. The aleuron layer also has the highest concentration of minerals, including a large amount of phytic acid-bound phosphorus and other nutrients. During milling the aleuron layer ends up in the bran fraction.

Grains are primarily carbohydrate sources with a high content of starch (concentrated in the endosperm) and dietary fibres (concentrated in the bran including the aleuron layer). Most of the vitamins and minerals are situated in the germ and bran fractions, as a number of phenolic and other bioactive compounds are. The extraction rate is very important for the content of nutrients and bioactive compounds in grains.

As a basis for a quantitative recommendation of wholegrain intake, a review of prospective population studies was undertaken. Quantitative studies, which had the intake of wholegrain 12 products measured (either as frequency or amount) against risk of disease, were included. The review included prospective studies of the association between wholegrain intake and risk markers for selected diseases influenced by dietary habits plus specific studies of the effect of the most important components in wholegrain on risk for these diseases. For most studies there is no information of the quantitative intake of wholegrain, but a reference to a number of portions of wholegrain products.

Many cohort studies have shown a significant inverse association between the intake of wholegrain (or wholegrain products) and risk of total heart disease, coronary heart disease and stroke. Wholegrain products could reduce risk factors for heart disease, mainly documented for the effect of oats on blood lipids and lipoproteins. The association is consistent, relatively strong (20-30% risk reduction), independent of other lifestyle factors, and biologically plausible. The focus has mainly been on wholegrain's contribution of dietary fibres, magnesium and potassium, and antioxidants (especially vitamin E), which have documented effects on insulin sensitivity, blood lipids and lipoproteins, and blood pressure. Having said this, none of the above single components can explain the overall association.

Several larger cohort studies show a relative convincing, inverse association between intake of wholegrain products and type-2 diabetes. It is mainly the content of dietary fibres and magnesium in wholegrain product that were suggested to give the possible protecting effect of wholegrain products.

The association between intake of wholegrain and the risk of being overweight is the result of several American cohort studies, of which only one study has results for breakfast cereal intake. All studies show inverse association between intake of wholegrain products and weight gain or risk of obesity.

No randomised experiments have separately investigated the effect of increased intake of wholegrain products (e.g. compared to refined cereals) on body weight and weight change. The importance of wholegrain intake on weight regulation is considered a result of the content of dietary fibres in wholegrain, and the importance of dietary fibres for glucose metabolism and satiety.

The effect of wholegrain intake on risk of cancer development is described in a few studies on individual types of cancer. The results are not aligned. For colon and rectal cancer an association cannot be established. Furthermore, there is no association in risk of cancer in stomach or uterus. On the other hand, a tendency for increased risk of breast cancer was shown with high wholegrain

intake. For total cancer risk in upper respiratory tract and stomach-digestive tract an inverse association to intake of wholegrain products was shown, while there was only a tendency for inverse association between wholegrain intake and total cancer. The majority of studies concern the contribution of dietary fibres (especially colon cancer), folate and, to a certain extent, vitamin B6 and magnesium from wholegrain. Also the possible effect of lignans has gained scientific interest.

Presently, it is not possible to verify specific compounds in the grains as being responsible for the effects of disease risk. It is most likely that it is the combination of chemical compounds found in wholegrain that are important for disease risk. It should be noted that the chemical compounds in wholegrain are highly correlated, and thus it is impossible to separate the effect of individual compounds. The association to disease risk is shown from the lowest to the highest intakes of wholegrain products.

Most studies consisted of American cohorts and only few studies included Scandinavian cohorts. Cultural differences exist in dietary habits, and especially in choice of wholegrain products, between the US and Scandinavia. The typical intake in the US is less than 1 portion (16-28 g) of 13 wholegrain per day, while in Scandinavia it is 2-3 portions (35-55 g) per day. At present there is insufficient scientific evidence to argue that one species is necessarily healthier than another.

Wholegrain and wholegrain products can, similar to other foods, contain unwanted chemical compounds from several different sources. Contaminations include a broad spectrum of organic and inorganic compounds like environmental pollutions, production aids and compounds produced unintended during food production. Besides, grains and grain products can also be contaminated with pathological bacteria, and finally grains can contain natural toxins. However, the continuous control of contaminants and unwanted chemical compounds show that the content in grains and grain products is at a very low level in Denmark, and in general below existing threshold values. Thus no health concerns should be necessary in connection to an increased and diversified use of bread and other cereals including wholegrain products.

It is concluded that the scientific documentation is sufficient to recommend a wholegrain intake in Denmark of minimum 75 g wholegrain/10 MJ under Danish conditions. The recommendation for wholegrain intake agrees with the dietary guideline advising an intake of 500 g potatoes, rice, pasta, bread and grains per day, and can be considered a specification of the existing dietary guidelines. The recommendation should not just focus on intake of wholegrain, but on how wholegrain products can be part of a healthy diet, and emphasis should be placed on a varied intake of wholegrain products. The recommendation shall be seen as a minimum recommendation for persons with a energy intake of approximately 10 MJ/day, equal to an average Danish diet. For persons with an energy intake of less than 10MJ/day the wholegrain recommendation shall be reduced in percentage terms equal to the energy intake, and similarly increased for persons with an energy intake of more than 10MJ/day. Correcting for a lower energy intake, it means the recommendation for small children age 4-10 years (mainly girls) and for light eating larger children and women will be approximately 20-50% lower, corresponding to a recommended intake of 40-60 g wholegrain per day. It is important to note that the recommendation refers to wholegrain, which can be implemented as different types of wholegrain products with variable wholegrain content.

Calculations of a Dane's wholegrain intake from data from The Danish National Survey of Dietary Habits and Physical Activity 2000-2004 show, that Danes eat approximately half the recommended amount of wholegrain, and only 6% of the population have a dietary wholegrain density of 75 g/10 MJ. The typical content (median content) is around 30 g/10 MJ per day. The dietary wholegrain content is highest among the youngest and the eldest age groups and lowest among young people, particularly those aged 14-24 years. The majority of persons living up to the wholegrain recommendation eat the recommended amount of bread and grain products. Rye bread is the single largest contributor to the wholegrain intake for both Danish children and adults. Next comes oats (including porridge). Coarse wheat bread contributes less to the wholegrain intake.

Due to the high wholegrain content of rye bread, lunch contributes with about half the wholegrain intake for both children and adults. Next comes breakfast, followed by dinner and snacks. Breakfast and dinner present the greatest potential for increase in wholegrain intake. It is estimated that there is a potential for increased wholegrain intake through increased wholegrain content of fast food and pita bread, sandwiches, flutes and buns.

According to The Danish National Survey of Dietary Habits and Physical Activity 2000-2004, the diet of persons living up to the wholegrain recommendation has a more optimal nutrition profile in accordance with Nordic Nutrition Recommendations than the diet of those who do not live up to the recommendation.

Thus, those living up to the wholegrain recommendation, have a diet with a more favourable macronutrient composition, have an intake of dietary fibres at the recommended level, 14 plus a higher intake of a number of vitamins and minerals. Since those living up to the wholegrain recommendation, simultaneously have a higher intake of vegetables (children) or fruit (adults), it seems that a high wholegrain intake is, in general, part of a healthier diet. The calculations of wholegrain intake of Danes show that an effort to increase the intake should be primarily targeted towards the whole population.

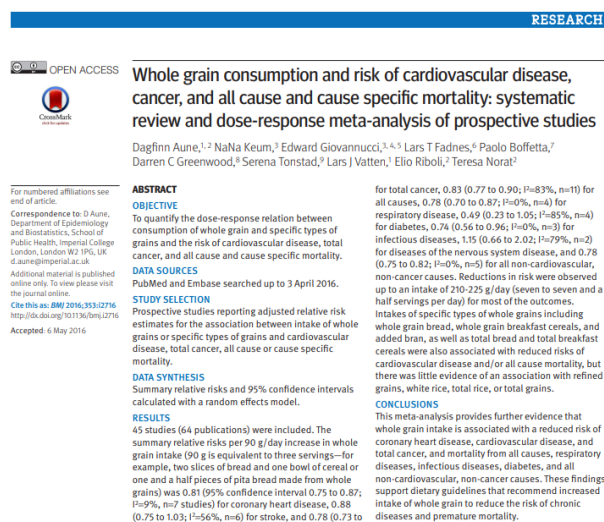
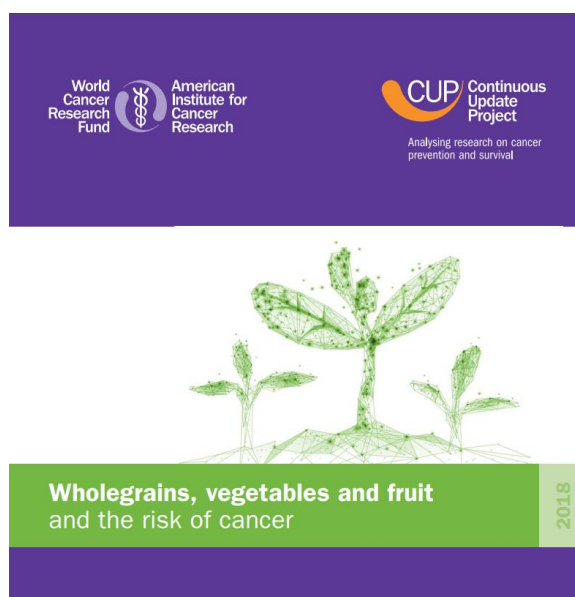
Summary from the report: "Wholegrain Definition and scientific background for recommendations of wholegrain intake in Denmark" 2008. Heddie Mejborn, Anja Biloft-Jensen, Ellen Trolle, Inge Tetens, National Food Institute, The Danish Technical University, DTU.

The association between intake of whole grain and life style related diseases and mortality

In the latest World Cancer Research Fund (WCRF) report published in 2018, the evidence for the relation of intake of whole grain and the risk of colorectal cancer is concluded to be strong. [Read the section of the effects of whole grain in reducing the risk of cancer \(can be read in pages 8 and 14-16\)](#)

In this review you can read about the reviewed evidence on the association of intake of whole grain and the risk of type 2 diabetes. [Find the review here.](#)

Read a review about the association of intake of whole grain and risk of cardiovascular disease and mortality. [Find the review here.](#)



Updated Evidence Base on the health effects of whole grain intake

One of the deliverables of the WholeUGrain project is an updated evidence report on the health effects of WG intake. The report is planned to be published in February, 2021.

You will find a link for the evidence report, when it is published.



Learning questions for Chapter 2:

- 1) Are there other benefits or side effects from an increased WG intake in your country?
- 2) What are the common goals?
- 3) What are the key point indicators for consumer knowledge, attitude, behavior and whole grain intake?
- 4) What are the KPI's for the availability of whole grain?

Chapter 3:

Food culture, monitoring markets, consumer knowledge, attitudes, and behavior

In chapter 3 you will be introduced to how to gain information and knowledge of your target group through dietary assessment methods, anthropological studies and how to identify the most important WG products in the diet. You will be introduced to a food database where you can find nutritional information of several WG products, among others. You will get insights to important considerations if want to avoid bias and the most common pitfalls when conducting dietary surveys, consumer research and market analysis.



Monitoring whole grain intake, supply of, and demand for whole grain products

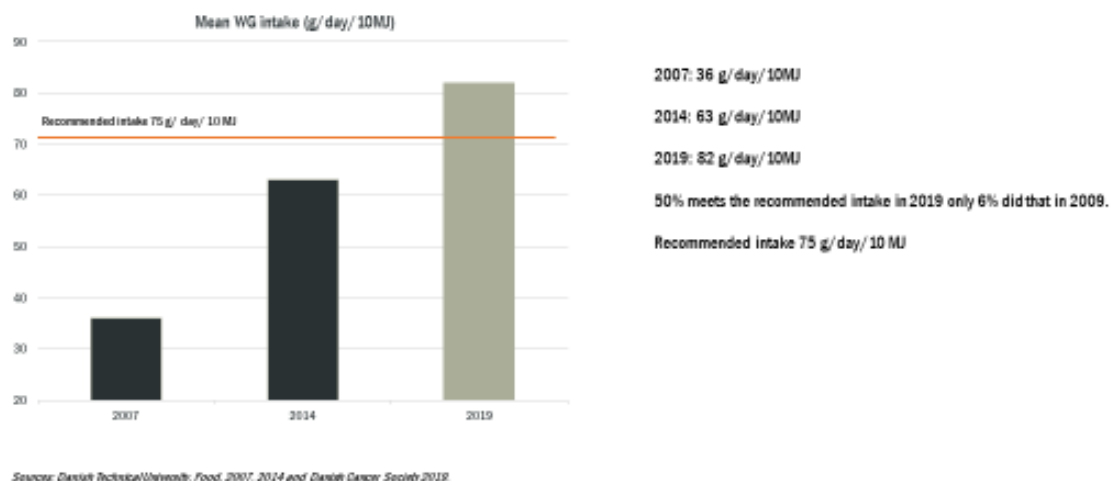
Develop goals and set target

Both when the partnership set targets for their work and later when it wants to measure whether the goals are reached, it is necessary to monitor different aspects of consumer behavior and developments in the market. Thus, it is important to develop and use validated methods to measure changes in both, dietary habits including WG intake, supply of and demand for WG products.

Dietary surveys

In Denmark, the National Food Institute (DTU) on a regular basis, conduct national representative dietary surveys. This is the prerequisite for the monitoring of the WG intake in the Danish population. Further analysis of the determinants of WG intake, makes it possible to describe the different target groups and identifying the groups that eat the least WG and their characteristics.

Whole grain intake in Denmark



Dietary survey checklist:

1. Choose a validated dietary survey method
2. Ensure that WG is well defined
3. Identify good data on the WG content of cereal foods
4. Conduct the survey on a representative sample of the population
5. Repeat the dietary survey on a regular basis (e.g. every third year)

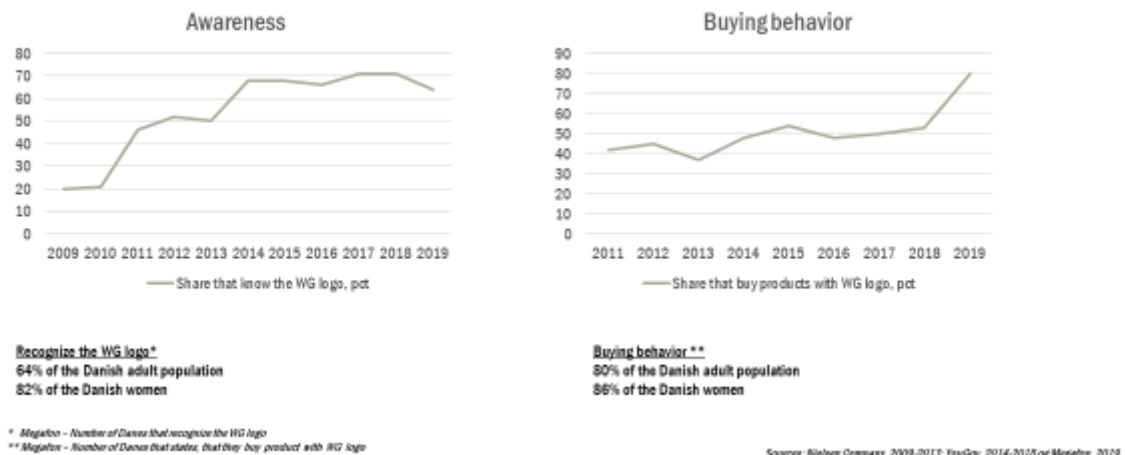
Consumer surveys

Monitoring WG demand, trust and buying behavior is important measures not only when setting targets but also, when you choose target groups and design communication activities.

In Denmark, once or twice a year a professional research agency is monitoring consumer knowledge, attitudes and behavior using the same methods and repeating questions, making it possible to monitor development in consumer behavior in a representative sample of the population.

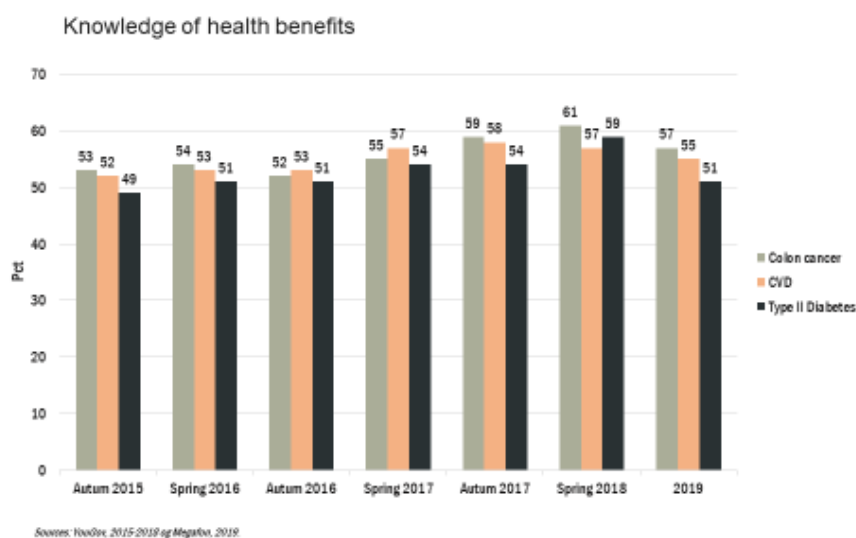
It is important to maintain and secure consumer trust of the WG logo, because it functions as an incentive for industry to reformulate cereal products and makes it easier for consumers to identify WG products. That is why we ask whether the consumers recognize the logo, trust it and look for the logo when they choose and buy foods.

If consumer trust decline, it is possible to adjust the communication activities, messages and channels.



Consumer survey checklist:

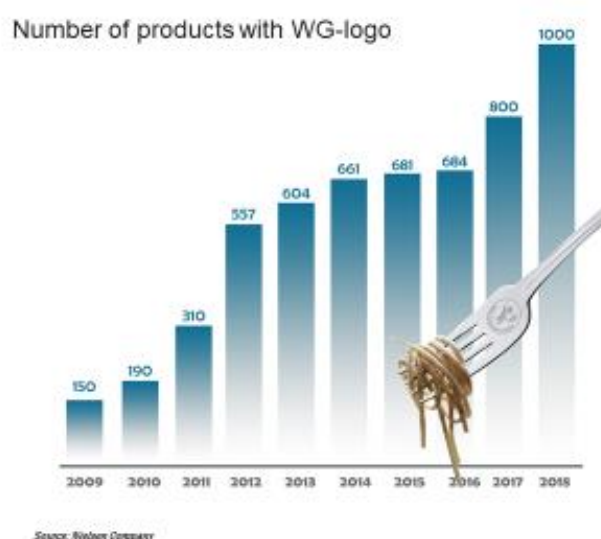
1. Develop questions covering, consumer knowledge of health benefits, attitudes to WG products and logo and intended buying behavior.
2. Choose an opinion-polling agency that you trust or conduct the survey yourself.
3. Ensure a representative sample of the population in your survey.
4. Pretest your questionnaire and if possible supplement with qualitative studies.
5. Repeat the survey on regular basis.



Monitoring availability

Consumers will stop demanding WG products if they are not available. Thus, monitoring WG supply is an equally important measure of success for the efforts of a WG partnership. Some products (e.g. bread and breakfast cereals) are naturally good sources of WG. While other products and meals can become relevant sources of WG, when they are reformulated (parts of the meal is replaced with WG versions of an ingredient, or frequently consumed products is enriched with small amounts of whole grain. Reformulation is further described in chapter 5, in this toolbox).

Unless you have a WG logo or another kind of labelling, that can identify WG products and their WG content, it can be challenging to get valid data on the WG supply. You would rely on food industry's willingness and ability to report on the sales of WG products, products and meals containing a little WG.



In Denmark, we have WG logo on products that meets category specific criteria, which only members of the WG partnership can use. That is why it is easy to get reports on the numbers of products with the WG logo.

This knowledge needs to be supplemented with sales data for WG products and products with added whole grain. Data is confidential, but can be supplied on a general level by bureaus specialized in obtaining sales data.

Monitoring availability checklist:

1. Use trustworthy data on the WG content of the products.
2. Develop methods that can monitor changes in the marked for whole grain.
3. Use valid data on sales data.
4. Use a professional bureau for data collection.
5. Repeat monitoring on a regular basis.

More measures of success

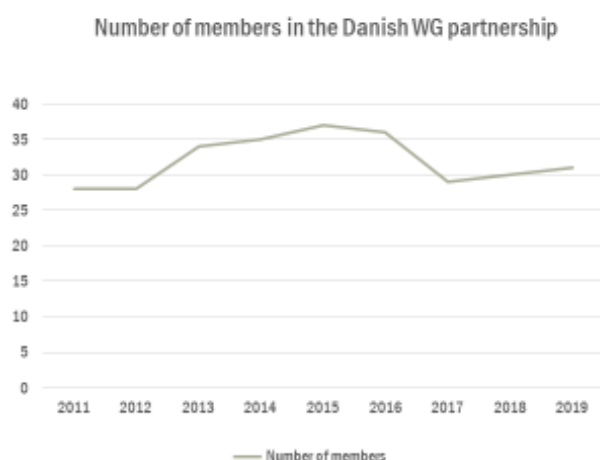
A measure of success/failure is the consumer response to the campaign activities. Therefore, it is important to evaluate campaign activities. To get valid data, it is recommended to have external professional organizations (bureaus specialized in communication evaluation or researchers from University) to evaluate campaign successes. Measures could be: knowledge, liking, intentions to behavioral change and trustworthiness.



Another measure of success is the partner satisfaction with activities, meetings, conferences held under the auspices of the partnership. Opinion polls should be completed immediately in conjunction with the activities. It is also necessary to observe the general satisfaction of partners.

When you have a limited number of partners, it is easy to evaluate through the day-to-day contact or at regular 1:1 meetings (e.g. phone/skype interviews) with the sole purpose to reconcile expectations. However, as the number of partners hopefully increases, you may need to conduct a survey.

Examples of themes in the evaluation of partner satisfaction with the work in the partnership could be: What works great, what does not work so well, information level on initiatives and opportunities, partners' wishes for possible new actions or cooperation, agree on joint actions.



Since the Danish WG partnering companies, organizations and government finance the Danish WG partnership jointly, it is possible to measure partnership success by the number of partners. Increasing numbers of partners will increase the financial basis for the partnership and the possibility to increase activity level.

Once you have established a success it is important to brag about it to the public and/or partners. This praxis build up mutual pride and unity among partners and can generate public awareness to health benefits of WG or the work of the partnership.

In Denmark regular newsletters to the partners confirms progress and mutual successes.

Survey success checklist:

1. Measure consumer reaction to campaign activities.
2. Measure partner satisfaction with activities and in general.
3. Measure satisfaction and liking in conjunction with the activities.
4. Count number of members or financial support.
5. Communicate the successes to the public and partners.

Dietary assessment methods in epidemiological studies

Dietary intake of nutrients including whole grain can be measured by different ways. Read more about the different methods in the review: [Dietary assessment methods in epidemiological studies](#)

Dietary assessment methods in epidemiologic studies

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Diet is a major lifestyle-related risk factor of various chronic diseases. Dietary intake can be assessed by subjective report and objective observation. Subjective assessment is possible using open-ended surveys such as dietary recalls or records, or using closed-ended surveys including food frequency questionnaires. Each method has inherent strengths and limitations. Continued efforts to improve the accuracy of dietary intake assessment and enhance its feasibility in epidemiological studies have been made. This article reviews common dietary assessment methods and their feasibility in epidemiological studies.

KEY WORDS: Dietary assessment, Food frequency questionnaire, 24-hour dietary recall, Dietary record

INTRODUCTION

Diet is a major lifestyle-related risk factor of a wide range of chronic diseases. Changes in dietary habits have been found to reduce cancer incidence by one-third [1]. Dietary information has been useful in cardiovascular disease risk prediction [2] and consuming a nutrient-dense diet was associated with a low risk of all-cause mortality [3]. Contrary to other lifestyle risk factors

have found these markers to be highly correlated with dietary intake levels, free of a social desirability bias, independent of memory, and not based on subjects' ability to describe the type and quantity of food consumed [8]. Thus, these biochemical markers may provide more accurate measures than dietary intake estimates do. However, a number of biomarkers have been known to provide integrated measures reflecting their absorption and metabolism after consumption, and they are also af-

Introduction to an anthropological study. A tool for mapping needs, norms and food culture/Qualitative studies of food habits and WG intake

In order to understand consumer beliefs, social norms, attitudes and knowledge that shapes consumer behavior it is of importance to conduct qualitative studies.

Quantitative data on food habits will contribute with a description of the distribution of WG intake and the socio-demographic determinants of food habits. The dietary surveys will answer questions concerning **who** is eating WG and who is not? **How much** WG do the different parts of the population eat? **What types** of WG do people eat and to some extent **when** and **how** do they eat WG? But, these surveys are unable to describe people's knowledge, attitudes, beliefs and food culture that determines food habits. Furthermore, questionnaires and surveys are unfit to reveal peoples underlying motivation to dietary change; as well as, which arguments for dietary change are most likely to induce dietary change among the relevant population groups. This knowledge is important when you plan public health campaigns and decide how to communicate health topics to the population.

That is why we recommend that dietary surveys (quantitative data) are supplemented with qualitative studies, exhibiting the social cultural aspect of dietary habits.

Examples on how we used the information from the social-cultural studies:

- **Myth busting:** People participating in the interviews showed a number of misconceptions of WG and this suggested that the concept of whole grains had to be well explained: i.e. in WG products the kernels are visible or the color had to be dark. But, the fact is, that neither the degree of grinding nor the color of the product defines WG, but it is the extraction grade of the grains that determines whether it is WG or not.
- **Identification of whole grain:** The interviewees was in doubt whether products claiming to be WG could be trusted; this corroborated the need for a trustworthy front of pack WG logo controlled by authorities.
- **The importance of taste and availability:** The social-cultural analysis featured taste as an important quality when you wanted to enjoy bread, while satiating properties of WG products, were more important in the everyday diet, showing a high price sensitivity of the respondents. This finding pointed at the need for a high availability of both high quality of WG products and cheap alternatives.
- **The importance of occasion:** Different occasions direct, which type of WG product that is suitable to eat. To increase the demand for WG product, it was important to suggest new occasions and situations where WG products could play a relevant part in the diet.
- **Added value to new products:** Health benefits is not the only property important to the consumer. They choose well-known products, which they like and usually consume. This pointed the need for people to be acquainted and try out new products, before they would buy them.

ENGLISH SUMMARY

In the beginning of 2008, Danish health organizations, health authorities and bread producers are launching a campaign aimed at increasing consumption of whole-grain products among Danish consumers. In order to target the campaign the best way possible, this anthropological study was initiated by the Danish Cancer Society to better understand how Danish consumers experience bread and wholegrain.

This socio-cultural study is based on anthropological fieldwork among skilled and unskilled Danish workers, primarily women with children living at home. The authors followed and observed the women in their families and at their workplaces and interviewed them, their family and their colleagues about their eating habits, focusing on bread and wholegrain. As a starting point for this study, fifty brief "street-interviews" were conducted in order to get an impression of the many co-existing ways Danes understand the term "whole-grain".

The study shows that Danes, first and foremost, understand wholegrain as something healthy and they associate it closely to traditional Danish rye bread. This bread is dark sourdough bread based almost entirely on wholegrain rye flour and rye berries. At the same time, they describe the characteristic "white bread" as an opposite to wholegrain in order to improve their understanding of the concept. According to informants, wholegrain is dark, heavy, healthy, and good for digestion, and it keeps you satiated in a good way. They un-

derstand wholegrain as "full of grains", or "with many grains", with an emphasis on the grains being intact, including all sorts of grains, also sunflower and pumpkin seeds. It is not the sort of grains that are important, rather the number, the size and the intactness that matters to informants. The analysis also shows that "whole-grain" is primarily a scientific term rather than a familiar concept to the consumers. Therefore, informants draw on various everyday experiences with bread in their efforts to explain the concept of wholegrain. Especially the term "coarse grained bread" seems to be much deeper embedded in Danish consumers' everyday language and knowledge surrounding bread.

This study also examines consumption of bread and wholegrain through an everyday life perspective, and incorporates anthropological methods to identify cultural patterns and ways in which bread and wholegrain are consumed. The Danish workers in this study organize their life in terms of work and spare time, and they eat bread accordingly. When they work, their body is a well functioning machine that needs fuel; that is wholegrain rye bread. This type of bread has the ability to keep the body going and informants feel good when eating it. In free time, however, the body is at rest and Danes prefer light white types of bread; especially at weekend morning breakfasts, a social event where the family is gathered. In this sense, rye bread or wholegrain symbolizes work and belongs to the work days, whereas white bread symbolizes spare time belonging to weekends, holidays or in the afternoon when work

is done. Nevertheless, it is likely that Danes eat white bread at work, but bread is used to celebrate birthdays or other occasions, or on Fridays to "warm up for the weekend". This analysis therefore teaches us that certain breads match certain occasions, but also that by choosing certain types of bread, consumers are able to create occasions, i.e. a bit of spare time at work by serving bread rolls.

Finally, this analysis argues that these cultural patterns are not definite. By changing the availability of the bread, its preparation and accompaniments, Danes can choose other types of bread than they are used to do. Some never eat bread rolls for breakfast, but if it is served at work, they will eat it. Others detest dark rye bread for a cozy cup of coffee Friday morning, but if it is served fresh out of the oven, or if it is served with delicious rolled seasoned meat, they think it is just perfect. This report points to ways or occasions in which bread and wholegrain habits are negotiable, in the context of Danish food culture and traditions.

In conclusion, the recommendation of this report suggests a revision of the scientific concept "wholegrain" into the more familiar term "coarse grained bread". In addition, future efforts should be made to target new products at meals that are less structured, such as breakfast and afternoon coffee on working days. Finally, campaigns should aim at increasing the availability of healthy bread types like wholegrain for example by serving it free of charge at workplaces. In general, the

report suggests that when promoting wholegrain, producers should have as point of departure, the values and characteristics that are already associated with the product in the everyday life of Danish consumers.



Whole grain intake of Danes 2011-2012

Read a brief report of the intake of whole grain in Denmark in 2011-2012.

https://www.food.dtu.dk/english/-/media/Institutter/Foedevareinstituttet/Publikationer/Pub-2013/Rapport_Fuldkornsindtag_11-12_UK.ashx

DTU Fødevareinstituttet



E-artikel fra DTU Fødevareinstituttet, nr. 2, 2013

Wholegrain intake of Danes 2011-2012

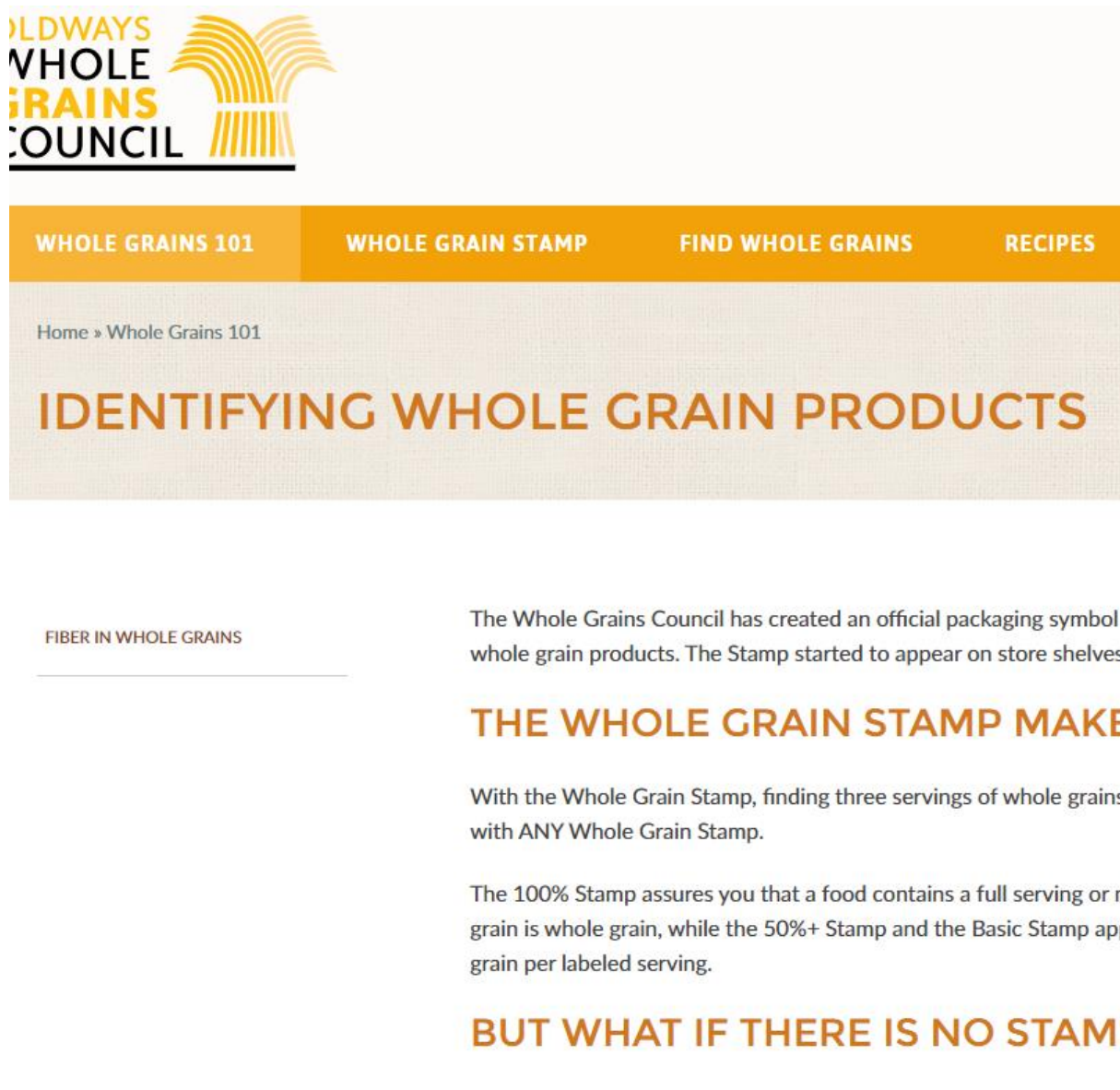
By Heddie Mejborn, Karin Hess Ygil, Sisse Fagt, Ellen Trolle og Tue Christensen
Division of Nutrition, National Food Institute, Technical University of Denmark

The National Food Institute, Technical University of Denmark has in collaboration with The Danish Wholegrain Campaign calculated the Danes' wholegrain intake based on new data about Danish dietary habits and new information about wholegrain foods on the Danish market. In this article the National Food Institute also determine the proportion of the population who follow the Danish wholegrain recommendation of 75 grams per 10 megajoules per day.

producers have added/increased the wholegrain content in their products. Since the partners put a specific wholegrain logo on foods with a predefined high content of wholegrain, it is now much easier for Danish consumers to choose wholegrain foods. To evaluate the effect of The Danish Wholegrain Campaign's initiatives, National Food Institute, Technical University of Denmark has, in collaboration with The Danish Wholegrain Campaign, calculated the Danes' wholegrain intake based on new data about Danish dietary habits and new information about wholegrain foods on the Danish market.

How to identify the most important whole grain sources and products

[Read more at the homepage of whole grains council here](#)



The screenshot shows the top of the Whole Grains Council website. At the top left is the logo with the text "OLDWAYS WHOLE GRAINS COUNCIL" and a stylized graphic of wheat stalks. Below the logo is a navigation bar with four orange buttons: "WHOLE GRAINS 101", "WHOLE GRAIN STAMP", "FIND WHOLE GRAINS", and "RECIPES". Below the navigation bar, the breadcrumb "Home » Whole Grains 101" is visible. The main heading "IDENTIFYING WHOLE GRAIN PRODUCTS" is displayed in large, bold, orange letters. On the left side, there is a sub-heading "FIBER IN WHOLE GRAINS" followed by a horizontal line. The main content area on the right contains the following text:

The Whole Grains Council has created an official packaging symbol for whole grain products. The Stamp started to appear on store shelves

THE WHOLE GRAIN STAMP MAKE

With the Whole Grain Stamp, finding three servings of whole grains with ANY Whole Grain Stamp.

The 100% Stamp assures you that a food contains a full serving or more of whole grain, while the 50%+ Stamp and the Basic Stamp assure you that a food contains at least half a serving of whole grain per labeled serving.

BUT WHAT IF THERE IS NO STAMP

Introduction to a food database, where you will find information about nutrient content of whole grain products and different whole grain sources

The database Frida Food Data (frida.fooddata.dk) was created and published by the National Food Institute, Technical University of Denmark (DTU) with the intention to facilitate public access to information about substances in the food we eat. Frida Food Data includes data on nutrient content of various foods, and the administrators strive to ensure that the database reflects the food supply in Denmark and that data are as correct and up to date as possible. The tables show nutrient content per 100 g edible portion of food as average values. Data can be searched by food name or found in alphabetical lists of foods, food groups and food components. The table columns show: Nutrient, content (average) per 100 g, unit per 100 g, median, variation, number of samples and source. To achieve the best possible quality Frida Food Data is maintained in cooperation with industry associations and retail companies, Nordic and international colleagues, and not least the Danish Veterinary and Food Administration (17).

Explore the food database in English, and find relevant information about nutrient content of whole grain products (17):

[Go to the database](#)

An online tool to calculate nutrition value of food products.

In Denmark, the National Food Institute, DTU, has developed a nutrition calculator. It makes it possible to calculate the nutrition value of a food product, among others WG content, fat, salt and sugar. It is possible to produce nutrition labeling. The calculator calculates both WG content in dry matter as well as QUID₂.

Does your country have a similar tool you can use to calculate WG content of different products?

Find out yourself!

Market research – why it is important and how do we manage?

Measuring sales data

Nielsen Company is a worldwide company providing sales data from retailers. The Danish WGP has an agreement with Nielsen to measure the sales of the whole grain stamped products as well as the sales of the total categories once a year. This is an important measure to see whether the Danes increasingly buy WG products. It is highly recommended to measure sales data. It creates excitement in a partnership to see results.

Two years after the establishment, the Danish WGP started to collect sales data. The partners individually send product lists with WG stamped products and the WGP secretariat do a confidential complete list for Nielsen Company. No one - not even partners or anyone else has access to the product list due to competition rules.

In the beginning we measured the sales monthly, then quarterly and now only once a year. Additionally, to start with, it made sense to look at sales numbers each month to see development within each category. It was very motivating for all partners to see categories developing positively on a monthly basis. In addition, the numbers attracted new partners. After 10 years in action once a year seems to be sufficient.

We measure sales in volume of the categories: flour, flour mixes, breakfast cereals, rasp, rice, dry bread, baking products, bread factory, rye bread factory, dry pasta, fresh pasta, Mexican specialties (tortilla wraps), flakes, meals, other grain products, tartelettes, and prepared meals. For each category, Nielsen sends the total sales in volume and the total sales of the whole grain products. Then we calculate the amount of WG products within each category:

Example:

Period 12-month back week 20 – 2019

The share of WG logo products in volume of total sales in the category:

Product category	WG Stamped product share
Dry bread	30%
Bread factory	33%
Rye bread factory	55%

Checkpoints for corporation with Nielsen on sales data:

1. Arrange a meeting with Nielsen and make a timeline for the process from collecting data from the partners to delivery of sales data from Nielsen. Agree on a price for the project and agree on terms and when data is delivered.
2. Collect data from all partners, make a total list and send it to Nielsen Company confidentially. The list should contain suppliers name, all WG stamped products with exact product name and EAN code (product number that Nielsen use to identify sales in databases)

3. Receive Nielsen data and distribute to partners. Use the data for PR and for documenting the results of the partnership.

Measuring consumer behavior

When targeting communication efforts, it is important to know your customers/consumers. How do they perceive WG and WG products? What do they eat and when, how do they perceive a WG logo, and will they look for it when buying products?

When the Danish WGP started to collect sales data, we also began to collect consumer insights. The questionnaire has changed during the years. The output can be used to target communication efforts and to document development in consumer behavior over time.

Example of themes in a questionnaire

Food trends, food logos – WG logo knowledge/trust and buying behavior, what is associated with the logo. How do consumers perceive WG and WG products, which grains is recognized as WG? Consumers understanding of dietary fiber, which cereal product do consumers already eat, knowledge of WG and prevention (lifestyle diseases), preferences regarding size of consumer packaging, to-go food preferences, preferences regarding gluten free, vegan and sustainable food.

Checkpoints for corporation with consumer research institute:

1. Arrange a meeting with a research institute and make a timeline for the process from deciding the content of the questionnaires to collect data on consumer behavior. Agree on a price for the report and agree on terms and when data is delivered. Listen to the research institute recommendations and look for country specific variables that are important to consider in the questionnaires.
2. Ask partners for input for the questionnaire – what is important for them to know about the consumers regarding WG? The research institute make the final questionnaire and collect data for the report.
3. The research institute deliver the report preferably with a presentation containing the main results to communicate to partners. Send out the presentation to the partners and use the result for PR and to document results.


Main factors Influencing Whole Grain Consumption in children and adults – A narrative review

In the article you can read about some main factors (barriers and facilitators) influencing WG intake in children and adults, and reasons for success or failure of programs aiming to impact WG consumption in both children and adults. [Go to the article.](#)



Review

Main Factors Influencing Whole Grain Consumption in Children and Adults—A Narrative Review

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Abstract: Despite their recognized health benefits, intakes of whole grains (WG) are below recommended levels in almost all countries worldwide. This observation highlights the need to increase WG consumption by understanding factors influencing this consumption and how they could be favorably impacted. This review focused on facilitators of and barriers to WG consumption and how to improve the effectiveness of programs aiming at increasing WG consumption. The main methods to facilitate WG intakes in both adults and children seem to be to (i) increase the availability and the variety of foods containing WG, (ii) improve their sensory appeal, (iii) reduce their purchase cost, (iv) use a familiarization period to introduce them to consumers (with a gradual increase in consumed amounts and repeated exposure), and (v) improve communication and labeling to enhance consumers' ability to identify products with WG. These strategies may be used to improve the effectiveness of programs aiming at promoting WG consumption, with a further emphasis on the need to apply them over a long period of time, and potentially to include tasting sessions of new foods containing WG. Finally, these strategies should involve broad partnerships between multiple stakeholders at the regulatory, institutional and industrial levels.

Keywords: whole grains; intakes; barriers; facilitators; children; adults

1. Introduction

Whole grain (WG) consumption has been shown to reduce the risk of several non-communicable diseases, such as cardiovascular diseases, type 2 diabetes and some types of cancer [1,2]. However, few countries have integrated quantitative recommendations for WG in their dietary guidelines.

Learning questions for Chapter 3:

- 1) How do we monitor and document the development and success?
- 2) How often do we measure consumer knowledge, attitude, behavior and whole grain intake?
- 3) How often do we measure availability of whole grain and developments in the market?

Chapter 4:


Consumer communication, public awareness campaigns, and labelling (front of pack)

In chapter 4 you will gain knowledge and inspiration on how to run whole grain campaigns as well as an introduction to the development of a whole grain logo and labelling of whole grain products. In addition, you will learn about how the partners in the partnership can communicate, both internally and externally.



Examples of whole grain campaign initiatives and the effects

Below you will find examples of selected whole grain campaigns, which have been implemented during the past years.

Campaign/intervention	Results
<p>National WG Day, 2012</p> <p>https://fuldkorn.dk/om-partnerskabet/kampagner/national-fuldkornsdag-2012/</p> <p>October 24, 2012, the WGP celebrated the first National WG Day. Inspired by the US National WG Sampling Day.</p> <p>Our objective was to give the Danes a “taste” for whole grains. We went on a road trip starting in Aarhus drove through Odense, and ended in Copenhagen - driving in an old VW bus. In each city WG Partners and volunteers and famous WG ambassadors handed out delicious WG products for free.</p>	<p>More than 7.000 WG products were handed out by WG partners, volunteers and the WG ambassadors Lotte Heise and Vibeke Hartkorn (two famous personalities in Denmark).</p> <p>Many press and radio interviews were obtained.</p> 
<p>Since 2012, the WGP have celebrated a yearly national WG day and developed the concept. One year you could go to your local baker with your old bread and exchange it to a fresh WG version. We had competitions for consumers and we have handed out even more WG products. A few years ago, we decided to do things differently. Instead of making our own sample events. We invited the whole country to participate. Now we always celebrate the yearly national WG day the 3. Friday in January.</p>	
<p>National WG Day, 2020</p> <p>https://fuldkorn.dk/om-partnerskabet/kampagner/arets-fuldkornsdag/</p> <p>January 17, the WGP celebrated WG day. The objective was to remind the Danes to eat at</p>	<p>More than 800 participants across daycare institutions, craft bakers, supermarkets, retailers, WG partners and many more.</p> <p>The national WG day was celebrated with participants from 95 out of 98 Danish municipalities.</p>

<p>least 75 grams of WG each day. New data shows, that the Danes eat on average 63 gram/day.</p> <p>Participants from 95 of 98 municipalities in Denmark were represented. Both daycare institutions, craft bakers, supermarkets, retailers, WG partners and many more participated in the celebration, with various WG activities for the visitors. The WG day is now nationwide.</p>	<p>950 free campaign boxes was sent to participants of the campaign</p> <p>20 media had local articles about the national WG day.</p>
<p>Spring Campaign for retailers, 2016</p> <p>https://fuldkorn.dk/om-partnerskabet/kampagner/forarskampagne-2016/</p> <p><i>The objective of this campaign was to increase the Danes knowledge of WG, WG products and the WG logo.</i></p> <p><i>It was developed for the retailers in the partnership, and lasted for two weeks from May 26 to June 12 in 2016.</i></p> <p><i>Partners had activities, the Danish WGP had advertising ads at fitness centers and a competition of the Danish WGP Facebook page and increased visibility regarding the WG logo at retail banners.</i></p> <p><i>55 municipalities participated.</i></p> <p><i>A “tasty video – how to make a burger with a vegetarian steak” was developed.</i></p>	<p>The retail banners in super market chains (SuperBrugsen, Føtex, REMA1000, Bilka, Netto, Fakta og Lokal Brugsen) had offers on WG products in the campaign period. Especially REMA 1000 and SuperBrugsen focused on WG and used the WG logo.</p> <p>The video had a reach on 273.000 persons and 124.293 views.</p> <p>“Win a gourmet dinner” competition had a reach on 113.676 persons.</p> <p>The bloggers Carrotstick focused on WG in the period with banners, WG recipes and social media. 18.877 views.</p> <p>Free card: 94% (90.000 postcards)</p>
<p>Now there is WG for you (SoMe campaign, 2018)</p> <p>Difficult to translate – but in Denmark we have a swearword, that is not so bad.</p> <p>https://fuldkorn.dk/om-partnerskabet/kampagner/sa-der-fame-fuldkorn-du/</p>	<p>604.746 views</p> <p>A reach on 1.6 million persons on social media.</p>

The Danish WGP did a video with a famous Danish actress, Bodil Jørgensen. Bodil is especially famous for her funny characters.

The aim was to encourage the Danes to eat more WG, and inform that WG is found in rye bread, oatmeal, couscous, crispbread etc. It was played through a dialogue between a mother and her teenage daughter. The daughter is at the toilet through the most of the video, and the mother is talking to the daughter through the toilet door. Almost all of the WG partners shared the video.



Do you want it all, 2017

<https://fuldkorn.dk/om-partnerskabet/kampagner/vil-du-have-det-hele-med-blume-og-landin/>

Consumer surveys revealed that 17% of Danes in the age of 18-24 eats oatmeal every day. The Olympic Gold Medal Champions Pernille Blume (swimmer) and Niklas Landin (handball player) was included as campaign models to give attention to oatmeal and WG.

The objective was to remind the young people of the variety of WG products and that WG is not expensive. Campaign posters was posted at many educational schools, high schools, and production schools. The campaign was in a magazine for high school students and on free postcards on cafés in Denmark. The campaign was visible on social media and was shared through Instagram, Facebook and YouTube.

In 2015, two Danish rappers made a WG rap – and reused it in the campaign. As an ad on, we had the Danish “momory king” to do a video mentioning 60 different delicious whole grain dishes.

The memory video had over 33.000 views and 83.000 saw it on Facebook

The rap had 30.000 view on youtube and 59.000 persons saw it on Facebook

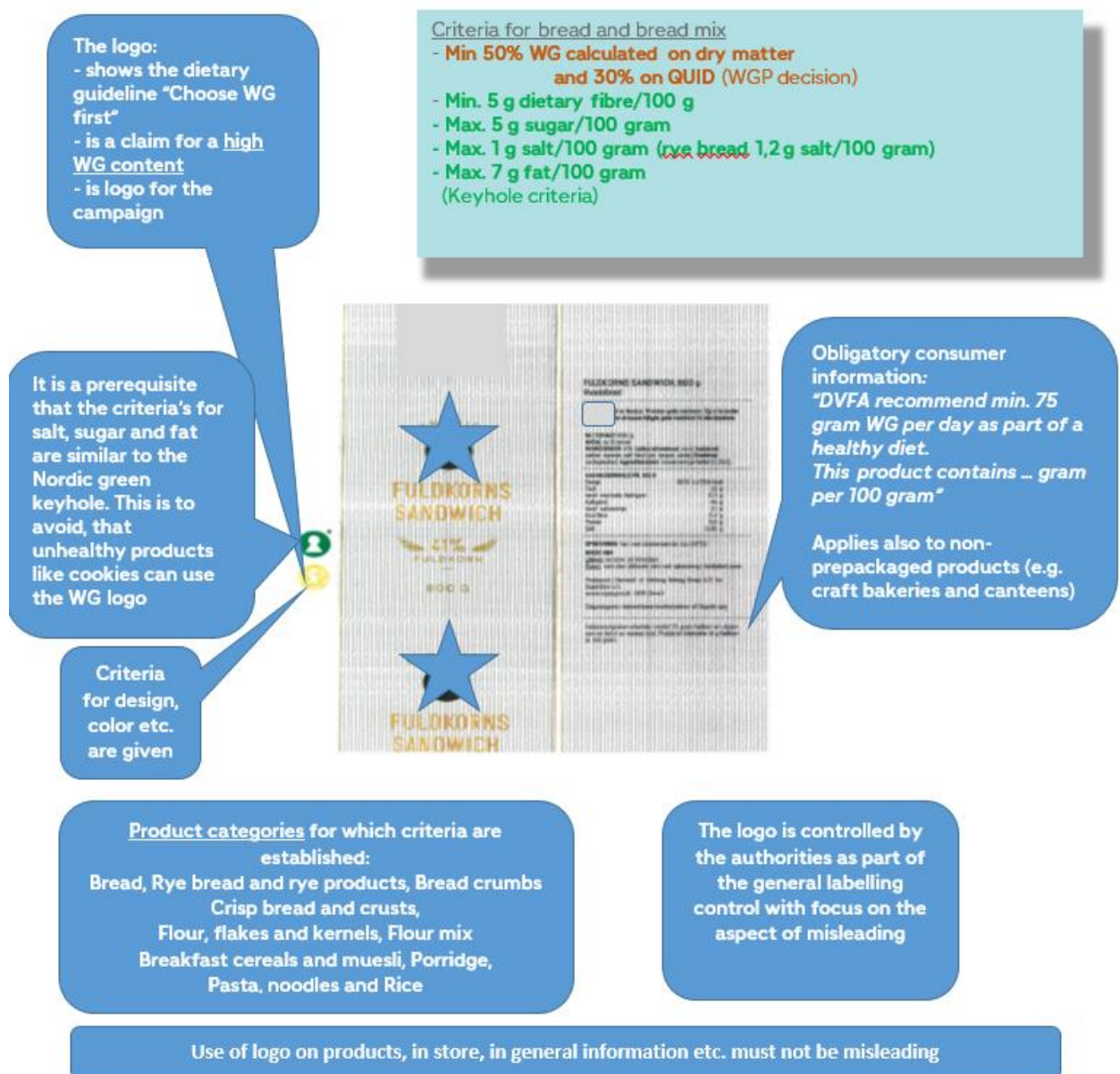
The partners used the campaign photo of the two gold medal winners and it was shared on webpages and social media.



<p>The WG speech, 2019</p> <p>https://fuldkorn.dk/om-partnerskabet/kampagner/some-kampagne-2019/</p> <p>The aim of this SoMe campaign is to remind the Danes to eat more WG. The Campaign manifests with power and pathos WG important role in the Danish diet and culture. Famous Danish Actor Henning Jensen is talking through the video and with humor and feelings.</p>	<p>The campaign video had more than 400.000 views</p> <p>A reach of more than 780.000 persons for all social medias in total</p>
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Development of the whole grain logo. An example from Denmark

- The logo is important for the campaign and only members of the WGP are allowed to use it on their products.
- The logo can be used as part of general consumer information by anybody who are interested (municipalities, education, media etc.)
- The logo was developed to make it easy for consumers to find the wholegrain products and to motivate producers to develop WG products.
- The industry was very keen on getting a logo that was officially endorsed and quickly identifies the healthier cereal products.
- The Logo manual can be found in the following page



Development of the whole grain logo

The logo was developed by a working group with all type of partners chaired by the authorities. It was developed through a process with more than 10 meetings in which the following was discussed:

- whether it should be one logo or a graduated logo (e.g. gold and silver) – one logo was chosen
- wording in the logo – due to EU claims regulation a (new) national dietary guideline on WG was chosen.
- wording of the supplementary text on the packaged giving also the specific wholegrain content per 100 gram product.
- minimum WG content in the different product categories – see logo manual
- ownership of trademark – the authority was chosen.
- selection of the final design of the logo – “the orange WG man” was chosen.

Based on these decisions the secretariat together with the authorities formulated the logo manual. See more in next page.

The Danish whole grain logo – user manual

Read about the guidelines to control the use of the Danish WG logo to ensure its authenticity, merit, and its message's credibility at all times. [Go to the manual.](#)

Danish Whole Grain Logo – User Manual



EU Regulations on labelling and claims

The two EU Regulations mentioned below are important to have in mind when selling food products to consumers in EU and also in relation to the development of a national WG logo. There are a number of specific references to these in the Danish WG logo manual (which you will find in chapter 4 in the toolbox).

Claims

REGULATION (EC) No 1924/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 December 2006 on nutrition and health claims made on foods

<https://eur-lex.europa.eu/legal-content/DA/TXT/?uri=CELEX:02006R1924-20141213>

Consumer information

REGULATION (EU) No 1169/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004

<https://eur-lex.europa.eu/legal-content/DA/TXT/?uri=CELEX:02011R1169-20140219&qid=1496756488921>

Examples of health NGO communication about whole grain

Health NGOs exploits every opportunity to communicate the health benefits of whole grain. The private food companies are unable to do so, because of the legal constraints prohibiting the use of WG as a health claim.

The opportunities can be of different origin, but could be new research results, consumer research, new number and figures about the developments, when goals are reached for the WG partnership, events and campaign activity.

Press releases, newsletters, website news and SoMe posts are the main methods when communicating to the public, raising awareness on the health benefits, give inspiration on how to increase the WG intake and suggest new occasions, recipes and events where WG products is featured as a healthy alternative.

To coordinate Public Relation and Public Affair activities among the health NGOs, authorities and the secretariat, we organize meetings every second month, where we take action on the communication plan and develop new ideas for communication of health benefits. Below, you will find examples on how communication is executed from The Diabetes Association, Heart Association and the Danish Cancer Society. The articles are in Danish, but can give an idea of the composition and visual layout.

New research on health benefits

<https://hjertereforeningen.dk/2016/01/mennesker-der-spiser-fuldkorn-har-mindre-risiko-for-at-doe-af-hjerte-kar-sygdom/>

<https://hjertereforeningen.dk/forebyggelse/kost/styr-paa-foedevarene/derfor-skal-du-spise-mere-fuldkorn/>

<https://diabetes.dk/aktuelt/nyheder/nyhedsarkiv/2018/nyt-studie-fuldkorn-kan-saenke-risikoen-for-type-2-diabetes.aspx>

<https://www.cancer.dk/nyheder/fuldkorn-hver-dag-mindsker-risikoen-for-tarmkraeft-p3/>

<https://www.cancer.dk/nyheder/fuldkorn-nedsaetter-risiko-for-at-doe-af-brystkraeft/>

New surveys, numbers and figures

<https://diabetes.dk/aktuelt/nyheder/nyhedsarkiv/2018/oestdanmark-spiser-mindre-fuldkorn-end-vestdanmark.aspx>

<https://diabetes.dk/aktuelt/nyheder/nyhedsarkiv/2020/alt-for-faa-kender-fuldkorns-forebyggende-egenskaber.aspx>

<https://diabetes.dk/aktuelt/nyheder/nyhedsarkiv/2018/flere-kender-til-fuldkorns-forebyggende-effekt.aspx>

<https://www.cancer.dk/nyheder/danskerne-er-glade-for-fuldkorn-og-det-er-godt-for-sundheden/>

<https://www.cancer.dk/nyheder/maend-spiser-mest-fuldkorn/>

<https://www.cancer.dk/nyheder/unge-skal-spise-mere-fuldkorn/>

<https://www.cancer.dk/nyheder/danskerne-tygger-sig-gennem-100000-tons-fuldkorn/>

Web and SoMe post with inspiration to use whole grain

<https://www.cancer.dk/nyheder/ny-app-giver-inspiration-til-sund-mad-med-fuldkorn/>

<https://diabetes.dk/velvaerekoekkenet/temaer/fuldkornstema.aspx>

<https://diabetes.dk/velvaerekoekkenet/temaer/bag-med-fuldkorn/fuldkornsprodukter-til-bagning.aspx>

<https://hjerteforeningen.dk/opskrifter/fuldkornsstykker-med-havredrys/>

<https://hjerteforeningen.dk/opskrifter/fuldkornspasta-med-bagte-rodfrugtcreme-og-gremolata/>

Events

<https://www.cancer.dk/nyheder/kraeftens-bekaempelse-hejser-fuldkornsflaget/>

<https://www.cancer.dk/nyheder/frem-med-fuldkornet-det-er-fuldkorndag/>




<https://www.cancer.dk/nyheder/fuld-fart-paa-fuldkorn-partnerskab-vinder-fornem-pris/>



Campaigns

<https://www.cancer.dk/10-kampen/udfordring-2/>

Communication – how does the Danish food authorities communicate about the official whole grain recommendation?

Learn about how the Danish national food authorities communicate about the official whole grain recommendation, the whole grain logo to the public as well as different target groups below.

<p>1. Official dietary guidelines</p> <p>New dietary recommendations for the Danish population (age over 3 yr.) were launched in September 2013. The dietary recommendations build on the scientifically based Nordic Nutrition Recommendations.</p> <p>There are 10 recommendations. One recommendation is “Choose whole grain”.</p> <p>It is recommended to eat <i>at least</i> 75 gram WG per day per 10 MJ.</p> <p>The WG logo is your guarantee for a high content of WG in cereal products.</p>	
<p>2. Dietary recommendations to specific groups</p> <p>Recommendations for WG and promotion of the WG logo are also included in the official recommendations for specific groups, e.g.:</p> <ul style="list-style-type: none"> • Children under 3 years and the related health care professionals. • People over 65 years of age. 	
<p>3. Healthier meals in daycare, schools, educational institutions and workplaces – official Danish guidelines</p> <p>Children, adolescents and adults consume many meals while staying in daycare, schools, educational institutions or workplaces. Therefore, there is a great potential for achieving health benefits by improving the nutritional quality of meals served in these different arenas.</p> <p>Official Danish Guidelines for healthier meals to these target groups has been published in 2017/2018. If a kitchen applies all the principles in the guide, they can brand the kitchen with “The Meal Label”.</p>	

<p>WG products are an important part of the principles in the guides - e.g. “Bread with less or no WG can <u>only</u> be used in 1 of 5 sandwiches” by kitchens in schools and working places.</p> <p>The guides also promote the WG logo.</p>	
<p>4. Recommendations for institution diets</p> <p>The food authorities and health authorities collaborates on giving recommendations for the diet in institutions such as hospitals sheltered housing, prisons etc.</p> <p>Also these include recommendations for WG and information on the WG logo.</p>	
<p>5. SoMe</p> <p>On Facebook, the authorities run a FB group on healthy diet. Here we support the WGP regularly – we focus on the health benefits of eating WG, tips for WG meals etc.</p>	 <p>“Kostråd” on Facebook</p>

The development of educational material for nutrition professionals, retailers and vocational and elementary schools. Get inspired!

Various approaches and options to develop educational material for nutrition professionals, retailers, vocational and elementary schools exists. In the Danish WGP, different materials were produced for education purposes. It should be noted that all materials that include information on health benefits of WG can only have health authorities and/or health NGO's as authors (not the WGP as it includes commercial partners). The majority of the presented examples below are in Danish, but is presented to give inspiration on how to produce your own national educational material.

Presentations and training courses

An important activity for the secretariat and partners is to represent and present results, activities and campaigns from the Danish WG partnership, activities in various conferences and seminars nationally and internationally. This is the official presentation video in English

<https://youtu.be/P6pyoWeUE34>

There are several potential targets groups for training courses, chefs, canteen staff, bakers, and supermarket and store staff. The secretariat has developed and conducts training courses targeted store staff with different retail chains. Partners has conducted inspirational meetings for canteen staff and bakers.

To support training courses a film on the WG health benefits is developed available here

<https://youtu.be/nOJewmhyNjs> (in Danish).

Examples of educational materials <https://fuldkorn.dk/undervisningsmaterialer-om-fuldkorn/>

Posters and flyers

For the use of trainers there is developed different materials as this flyers, conveying the elementary knowledge on WG, definition and health benefits. Store trainees are offered materials to in store activities e.g. posters, balloons, badges and stickers with the WG logo.

Recipes are popular materials and on a regular basis, the partnership or the partners develop new WG recipes. An example of a recipes pamphlet is found here <https://fuldkorn.dk/wp-content/uploads/2020/02/89346-A5->



[h%C3%A6fte_Opskrifter_Fuldkornspartnerskabet_komprimeret_final.pdf](https://fuldkorn.dk/wp-content/uploads/2020/02/89346-A5-h%C3%A6fte_Opskrifter_Fuldkornspartnerskabet_komprimeret_final.pdf)



Also materials for the youngest consumers and educational materials for the elementary school, is developed by the secretariat and also by partners.

https://fuldkorn.dk/wp-content/uploads/2019/12/Aktivitsbog_%C3%85rets-Fuldkorndag_2020_uden-sk%C3%A6rem%C3%A6rker.pdf

Learning questions for Chapter 4:

- 1) Which are the most important target groups (people with low whole grain intake or the motivated for a healthy diet/ dietary change)? And why?
- 2) How do we raise awareness of an increased intake of WG among consumers?
- 3) How do we engage professionals (shop or food service personnel, health professionals, food industry R&D personnel)?
- 4) How does the communication activities work?
- 5) What went well and what did not work so well?

Chapter 5:

Product development, reformulation and quality.

In this chapter you will gain knowledge on how to work with the manufacturers (of both whole grain products and millers) to incorporate a larger fraction of whole grain in to their products. At the end of chapter 5 you will get inspiration on how to incorporate more whole grain and whole grain products in meals and courses in a set of traditional recipes.



Incentives for reformulation. Read about the positive incentives for reformulation of products, resulting in products containing a higher percentage of whole grain

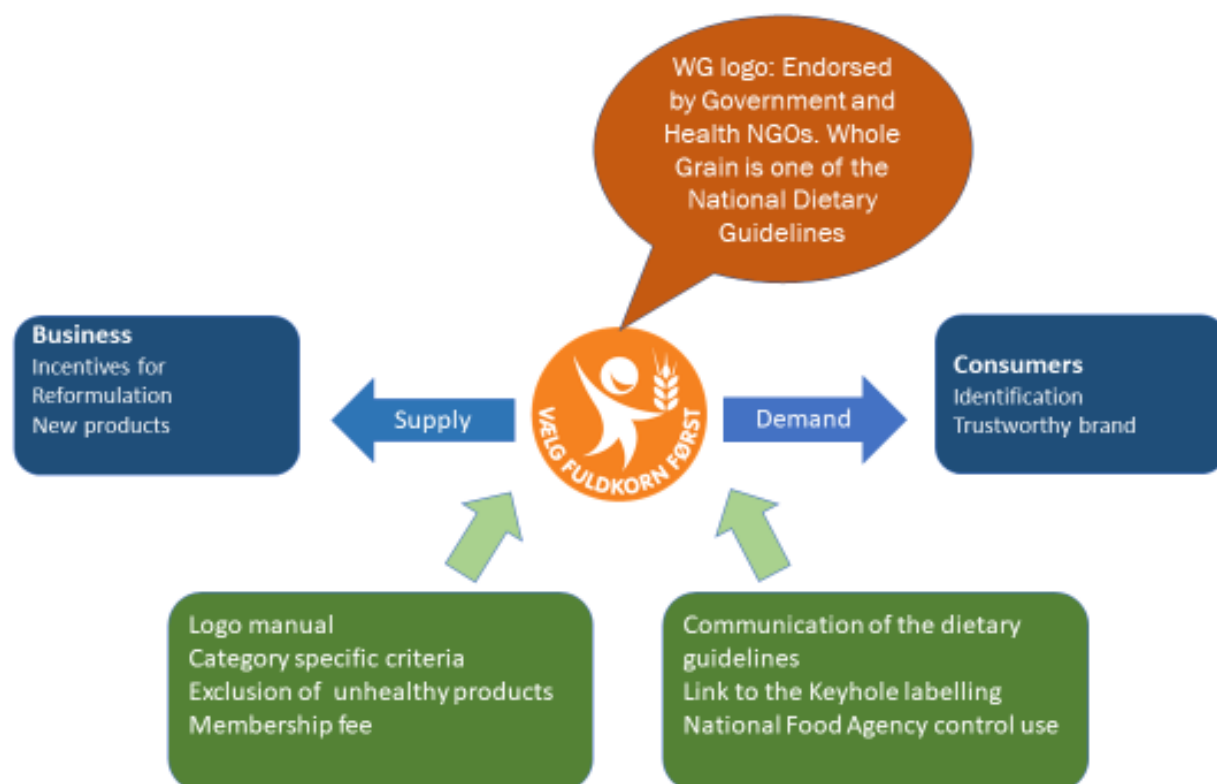
To increase the availability of WG, several products need to contain WG.

Consumer demand is an important driver of product development and reformulation of products containing WG. The grocers and the chefs are motivated and satisfied by customers and guests. Food industry, retailers and foodservice is ultimately motivated by the prospects of concurring market shares from competitors, increasing revenues or turnover.

The whole grain logo

In Denmark, the orange WG logo became an important incentive for food industry to reformulate and develop new products. Only as partner, you are allowed to use the logo as front of pack label. This gives you a competitive advantage on the market, since logo labeled products stand out. The prerequisites for the successful implementation of a WG logo is its credibility. The consumers should not risk misleading, authorities therefore need to set up strict criteria for the use of the logo and control its employment. In order to increase demand for WG logo labelled products, health NGOs and authorities need to endorse and communicate the benefits of the logo to the consumers. Finally, the food industry needs to supply the market with great tasting WG products and retailers need to market them.

The WG logo is a front of pack labelling making it easier for the consumer to identify a WG product, thus it acts like a branding, that the consumer must continue to trust and demand in order of it to work as an incentive for industry.



Developers in R&D departments find the strict logo criteria for the nutritional composition of the labelled products challenging. They state that it has been a creative leg tension, giving them new ideas and methods.

Labelling and claims

Labelling and the possibility of applying health claims can be another incentive for development and reformulation of especially prepacked products.

In the list of ingredients and QUID-labelling makes it possible to indicate the amount of WG ingredient in a product. Nutrition labeling can describe the content of dietary fiber, an indicator of the WG content product. Alas WG is not a mandatory part of the EU nutrition labeling scheme, but voluntary you can indicate it as long as it is not misleading the consumer. List of ingredients and nutrition labelling is not as powerful tool, since consumer knowledge and use is limited.

Unfortunately, EU has not (yet) approved any WG health claims. There is only approved health claims for dietary fiber, which can be a crude indicator of WG content in cereal containing products.

Inspiration

The strategy of the Danish WGP is twofold: increase the number of products with the orange WG logo and add a little or increase the WG content of products without the logo. The incentives for using the logo is obvious, while the adding of WG to products or dishes, that are unable to obtain the logo gives far weaker incentives for the industry. Because not all products and dishes can be reformulated to meet the criteria (WG content, dietary fiber and limited content for salt, sugars and saturated fats) for the WG logo, the Danish WGP has developed alternative measures.

Business seldom needs inspiration or motivation to reformulate or develop new products, since they are more than capable of implementing it themselves. Nevertheless, sometimes it is necessary to inspire companies and professionals to use more WG to counteract the inertia that may be in the application of more traditional recipes.

The Danish WGP, in close cooperation with trade associations or professional organizations has invited business and professionals to conferences, seminars and inspirational meetings. Besides the mandatory presentation of WG health benefits, participants are confronted with inspiration on how to use more WG in their products, recipes, dishes and meals, by experienced professionals.

CSR accounting and pea's pledge

Being a responsible business it is possible declare for your contribution to health, wealth and benefits to society, the public and the employees when accounting for CSR. Another model is to commit to pledges (e.g. adding more WG to your product by at set data). Read about how it is done:

<https://foodfoundation.org.uk/what-is-a-veg-city/veg-pledges/>.

A case story. How a bread manufacturer introduced a larger fraction of whole grain in their products

A case report from a Danish bread manufacturer, Kohberg Bakery group A/S. Britt Hougaard, Head of marketing and communication.

“As an active partner of the Danish Whole Grain Partnership, Kohberg Bakery Group is working on promoting public health by encouraging the Danish population to adhere one of the official dietary guidelines, “Choose whole grains”. Since the very beginning of the partnership in 2008 and up to 2014, Kohberg worked deliberately to raise the lowest level of WG in ALL our breads and buns. Since 2014, we have changed the strategy and modifying this approach, resulting in every time we produce a new bread or bun, we are considering if the specific bread is suitable to be labeled with WG logo. Therefore, we are continuing using WG logo at specific types of bread containing a higher percentage of WG and thus having a healthier nutrition profile.



On an ongoing basis, Kohberg is launching new and healthier products (bread and buns) to the market, labeled with the WG logo, in order to help consumers to make a healthier choice. The WG logo ensures that the bread contain a high percentage of WG and in addition having a more healthy nutrition profile according to the content of fat, sugar, salt and fibre (the Nordic keyhole criteria). At present, February 2020, 20 of our freshly packed bread and buns are labeled with the WG logo – corresponding to about half of our assortment”.

A case story. How does a retailer in Denmark market whole grain products

Rema1000, a major supermarket chain in Denmark, have been part of the WGP since the early beginning back in 2008. Every third year they are a part of the partnership board.

Public health is an important focus for Rema1000, and among others, products containing more WG is prioritized in their product development.

Dorte Damsø, from Rema1000 says:

Super market leaflets

Every quarter, we have a theme plan meeting, in order to ensure we market various products in our focus. WG products is marketed on an ongoing basis in the super market leaflets and we support the campaigns launched by the WGP – among others the national WG day. If a product have the WG logo, the logo is highlighted in the leaflet. Below you will find examples from one of our leaflets with products with the WG logo.



• Brug fuldkorn, hvis du bager selv.
Kom gerne lige så meget fuldkornsmel som hvidt mel i dejen.

• Vælg rugbrød eller andet fuldkornsbrød til madpakken.

• Du kan vælge fuldkornsrís eller -pasta som en del af dit varme hovedmåltid en gang imellem.

3-leaf logo

10,- Pasta di Maria økologisk fuldkornspasta tagliolini 250 g 40,00 pr. kg

3,- REMA 1000 fuldkornspita-brød 320 g 9,38 pr. kg

10,- Hatting fuldkorn burgerboller 380 g 26,20 pr. kg

10,- Leksands knækbrød Flere varianter 200 g Partivare, 50,00 pr. kg

10,- Madame Butterfly økologiske knækbrød 2 varianter 200-225 g Max. 50,00 pr. kg

The text in the leaflet, translated from Danish to English:

- Use WG when baking. Use half portion WG flour and half portion white flour
- Choose rye bread or other bread containing WG in the packed lunch
- Choose WG rice or – pasta as a part of your hot meal once in a while.

In Rema1000, we support the campaigns on SoMe as well.



Rema 1000 sponsor Food schools (Madskolers in Danish), which takes place in the national school holidays. At the food schools, children and youth learn about healthy diet, and are taught about keyhole - and WG logo products.

Get inspired

How to incorporate more whole grain in dishes



How to incorporate more whole grain in dishes with traditionally more refined foods



In order to increase the WG intake, it is important to give consumer recommendations and inspiration on how to incorporate more whole grain in their diet. This also serves as an inspiration to food industry and food service, to develop new products and dishes containing a higher content of whole grain, reformulate existing products and improve the availability of WG product and meals.

One way is to transform traditional recipes by adding some WG or replacing the traditional ingredients

with WG versions of them.

Below we have gathered some examples on how you can include more WG in different recipes and dishes.

Pasta

Cook WG pasta instead of traditional pasta and make your usual pasta sauce – and you are done!

Lasagna

Replace traditional lasagna sheets with WG ones.



Pizza

Only your imagination limits what you can put on your pizza as long as you enrich the dough with WG wheat flour. Use up to one third of WG flour and two thirds of your normal pizza flour and add a little extra water than your normal recipe, since WG can soak up more moisture than non-WG flour. Start by adding just small amount of WG flour. When you are confidential with adding a little WG, you can gradually increase the amount.

Burgers

Burger buns also comes in WG versions or you can bake your own. Replace some of the normal flour with WG flour (i.e. 10-20 %).



Salads & soups



Salads and soups becomes more satiating when you add cooked WG rice, WG pasta or cooked kernels of rye, wheat or barley.

Risotto, bulgur and couscous

Rice dishes also works when you use WG rice. Both bulgur and couscous also exist in WG versions.



Bread

WG pita or baguette you can buy in most stores or you can bake your own.

A rule of thumb is that you can replace around one fifth to one third of your flour with WG versions and add a little extra water and your normal recipe will still work but now WG enriched. When you have made this work, you can gradually increase the amount of WG.

Breakfast

Porridge from rolled oats is WG fast food. The recipe is quite simple and the result is satiating, saving you from snacking through the morning. 1 dl rolled oats 2 dl water. Stir while heating it in a small pot. After 2-4 minutes, add a nip of salt and the porridge is ready. Drizzle with raisins or apple slices and serve with cold milk.



Muesli is often by definition WG since the ingredients are whole grain: a mixture of rolled oats, rolled wheat, rolled rye and rolled barley. You can add buckwheat, sunflower kernels, chopped almonds or other nuts. Bake all the ingredients in the oven in a baking pan at 175 degrees C in 30 minutes; flip the mixture regularly (2 or 3 times). Mix in honey while the mixture is still hot. When fully chilled, store your muesli in an airtight container until use. Serve muesli on your yoghurt or with milk, add fresh fruit or berries.

Sweets and desserts

Pies and pancakes also come in WG versions, if you replace some of the flour with WG flour in your recipes. E.g. rolled oats in your pancakes dough, works well.



Snacks and food on the go



Do not worry; it is also possible to have WG if you are fond of snacking.

Grissini's, crispbread and chips can get a WG touch, when you bake them yourself or you can by the WG versions.

Sausage rolls, muffins and pizza buns are perfect media for WG. Apply the same rule of thumb as mentioned above when you make your dough.

Learning questions for Chapter 5:

- 1) What are the main sources of whole grain in our country?
- 2) Which products could be subject to reformulation?
- 3) Is it possible to add a small amount of whole grain into existing and/or new products?
- 4) Is there a need for developing new products?
- 5) How can we market the products?
- 6) How do we ensure quality of the products (taste, shelf life, nutritional composition)?
- 7) How do we prevent abuse of whole grain logo?
- 8) How do we develop a brand, protect it and ensure trustworthiness?

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