GUIDEBOOK SERIES

Enhancing your workforce nutrition programme

NUTRITION EDUCATION

A practical guide for employers to strengthen their workforce nutrition programme with a nutrition education component

WORKFORCE NUTRITION ALLIANCE

Good nutrition creates health in all areas of our existence

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BACKGROUND

Introduction

A practical tool

This guidebook serves as a practical tool for employers who seek to develop a nutrition education campaign to strengthen their workforce nutrition programme. It is part of building a successful workforce nutrition programme in your organisation – and a strong workforce.

This guide is one in a series of four produced by the Workforce Nutrition Alliance on the pillars of a strong workforce nutrition programme: breastfeeding support, healthy food at work, nutrition education and nutrition-related health checks.

All four guides are publicly available on our website with the aim of helping employers to enhance their workforce nutrition programmes.

Who we are

The Workforce Nutrition Alliance was launched by The Consumer Goods Forum (CGF) and the Global Alliance for Improved Nutrition (GAIN) in October 2019. It aims to impact three million employees in member organisations and supply chains by 2025.

We encourage employers who are excited about improving their workforce nutrition programme to enrol in one of our implementation support programmes.

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Before you start with this guidebook

GUIDEBOOK INTRODUCTION

FIRST TASTE

Before you start

Who is this guidebook for?

Employers who seek to strengthen their workforce nutrition programmes by adding or expanding an educational component will find this guide helpful. Whether you already have nutrition education built into your employee wellness programme, or have yet to begin, this guidebook will be relevant.

While this handbook serves as a practical guide for businesses, it can also be used by other organisations that offer nutritional support to employees, such as non-profit, civil society, academic, or government organisations.

What is covered in this guidebook?

Nutrition education can have many components, ranging from providing nutrition information, to behaviour change communication campaigns to individual counselling. This guidebook focuses specifically on setting up a campaign that guides employees towards healthier food choices and supports them in their efforts towards healthier diets. Nutrition education is most effective as part of a broader workforce nutrition programme and is best combined with providing healthier food at the workplace (see guidebook Healthy Food at Work), nutrition focused health checks and counselling (see guidebook Nutrition Focused Health Checks) and breastfeeding support (see guidebook Breastfeeding Support).

This guidebook contains five sections, which will take employers or programme managers through a simple process that results in quality nutrition education for employees.

It starts by guiding you through the process of selecting a **nutrition topic** on which to focus. This section encourages you to explore the situation in your company, and define key issues that can be resolved through nutrition education activities. We provide a list of common nutrition issues that can negatively impact the health and work performance of employees and outline the benefits of addressing these in supportive ways.

Second, we show you how to help employees transition from poor nutrition behaviour to positive nutrition behaviours, with solutions to break barriers of change. We do this by defining the **drivers for change**. These can be triggers, enablers or motivators.

Once you know what issues to focus on and what opportunities you have to deliver nutrition knowledge and positively impact nutrition behaviours, we'll help you get the **messaging** right, so that employees will actively engage in your initiative.

We'll then help you identify the right **format and engagement plan** for your campaign. We'll provide simple pointers on what interventions and channels could be effective to engage people, provide examples of what others have successfully tried and help you to prepare an employee engagement plan.

Lastly, we provide basic guidance on **monitoring** your programme to help you better understand and quantify the impact. It also helps you to course correct your programme where needed, and inform future decisions.

Why is this guidebook important?
A basic understanding of healthy nutrition in combination with initiatives to promote change and improve nutrition behaviour will help employees make better food choices, and in so doing, become healthier and more productive. This guidebook helps you support employees to achieve just that.

BUSINESS CASE

The evidence of impact

The benefits summed up

Successful organisations know that a healthy workforce benefits everyone. While an unhealthy workforce will negatively impact your bottom line.

Nutrition education is a key pillar of an effective workforce nutrition programme and can complement existing health and wellness programmes offered by your company. It is often valued by both employees and customers, who want to ensure fair treatment of the workforce. Nutrition education helps you support employees to understand and engage in your wider nutrition initiatives both at work and at home. There are many benefits of healthy eating and drinking habits at work through nutrition education:

The benefits of healthy food at work

The evidence of impact

In our Nutrition Education evidence brief[1], we summarise the evidence for nutrition education programmes. It suggests that non-personalized short-term educational programmes alone may improve nutrition knowledge levels but may not necessarily translate into better eating behaviours.

Employee nutrition programmes often promote healthy eating choices. Several reviews conclude that while this can shift knowledge and behaviour to some extent, for more measurable and sustained changes in employee diets, it is important to implement a broad nutrition education programme that includes access to – and affordability of – healthy food at work.[2,3,4]

For example, one programme used environmental cues to shift behaviour by placing information sheets promoting healthy eating close to the office canteen and vending machines. This resulted in significant changes in the social acceptability of healthy diets and intention to improve one's

own diet, but it had no effect on self-reported intake of fat, and fruit and vegetables.[5] In general, programmes that combined nutrition education with changes to the physical food environment of the workplace to improve access to nutritious foods, were consistently effective.

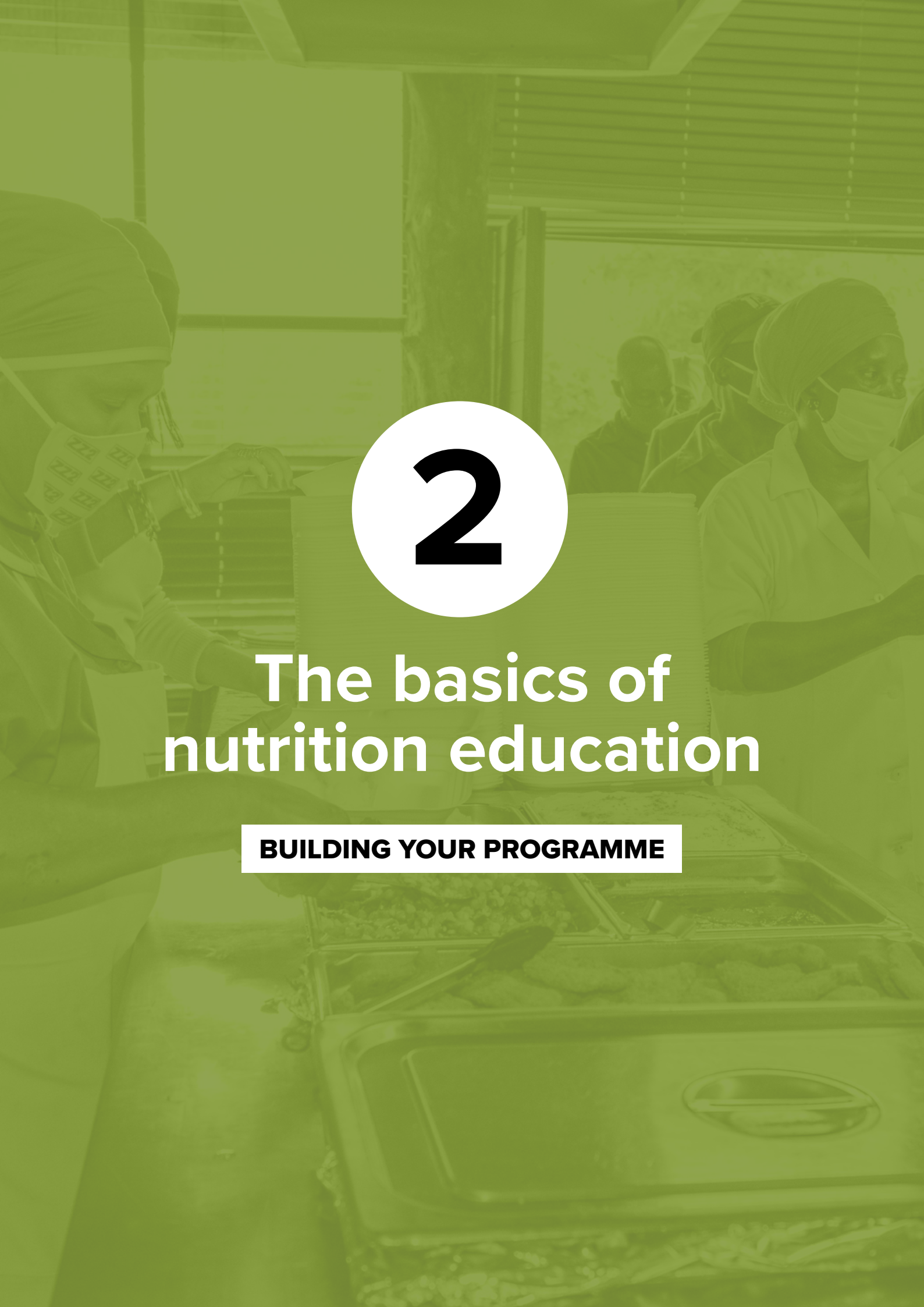
Understanding the specific barriers and motivations needed to promote lasting change in a particular group of employees is an important component of programme design. One study of a worksite programme for healthcare employees found that participating employees were more likely to lose weight if they were part of a supportive wider group.[6] In other cases, smaller groups or individual counselling have been more effective in achieving health aims.[7,8] Overall the results suggest that setting appropriate objectives for the programme and carefully assessing the current nutrition attitudes, beliefs, and relational dynamics of employees, make success more likely in behaviour change communication programmes.

A review by BDA Work Ready found that tailored approaches, including incorporating employee engagement, regarding developed worksite specific messaging, using health promotion methods, and increasing health literacy across the wide range of worker professions, had positive effects.[9] Further, if relevant for the type of workforce, online education can be effective – and even more so if an element of face-to-face counselling can be included. Multi-level interventions in nutrition, where both individual and environmental determinants of health are addressed, have the greatest impact.

In summary, nutrition education alone, while being valued by employees, may have a more limited impact on changing healthy behaviours in the long term but is a crucial part of programmes aiming to support nutritional health. It supports positive change and critical basic information exchange around healthy food at work, nutrition health checks or breastfeeding support. Therefore, it is advised that a nutrition education campaign as explained in this guidebook, is implemented as part of a broader workforce nutrition programme.

Definition of 'nutrition education'

Nutrition education can be defined as any set of interventions designed to facilitate the adoption of healthy nutrition-related behaviour. It is an integral part of providing nutrition services to your workforce and is one of the four pillars of an effective workforce nutrition programme, together with healthy food at work, nutrition health checks and breastfeeding support.



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The basics of nutrition education

BUILDING YOUR PROGRAMME

GET GOING

Setting goals for nutrition education

The goals for workforce nutrition education can vary between organisations and programmes, but commonly share a few characteristics.

Adequate knowledge

Provide adequate knowledge and skills necessary for critical thinking regarding diet and health to support employees to make healthier food choices even in a resource poor environment.

Attention to care

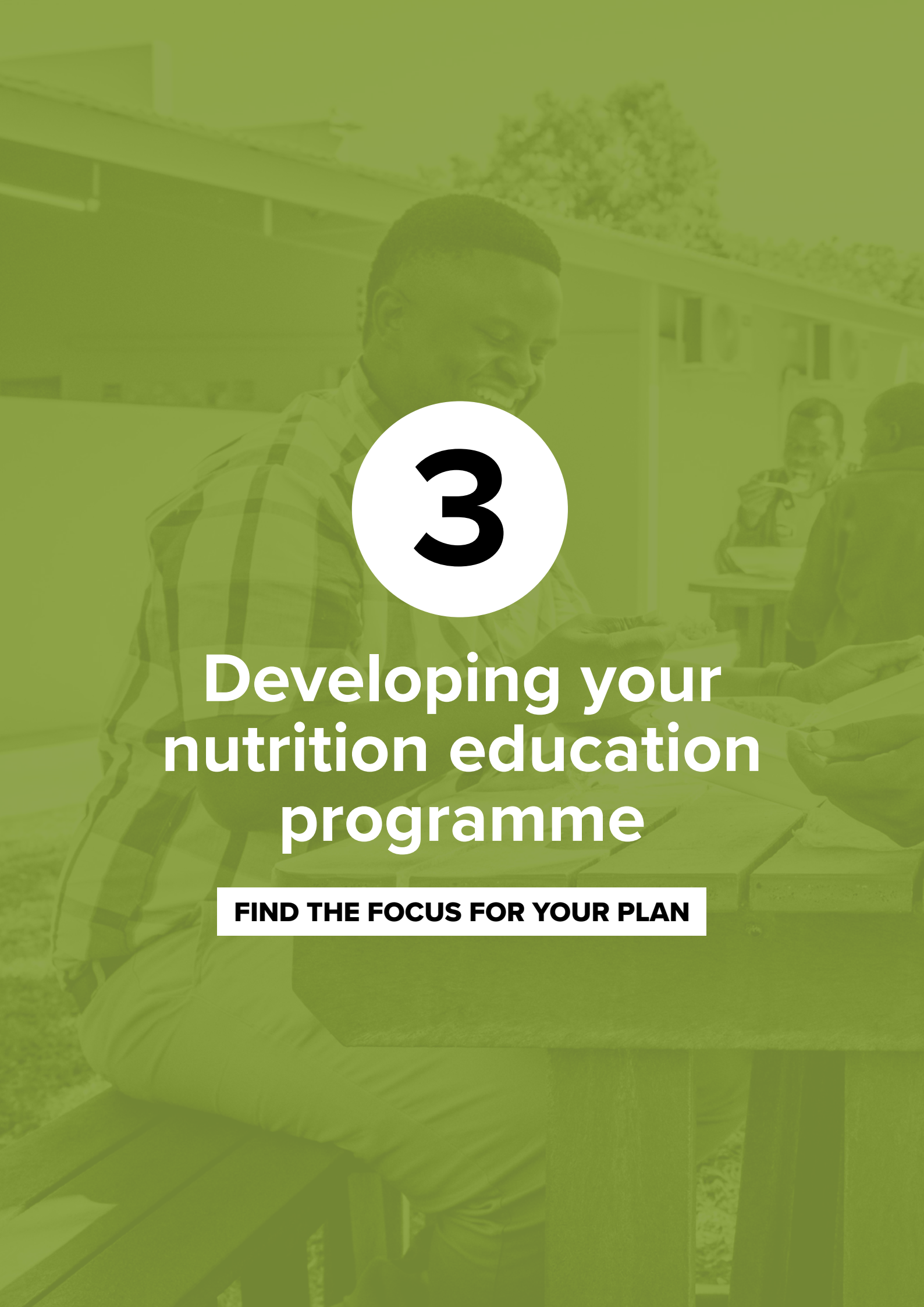
Nurture employees and empower them to care for themselves and their families, making them feel more valued.

Appetite for change

Building a culture in your organisation that is ready for better nutrition. From directors to employees, a better understanding of good nutrition opens doors for organisational and behavioural change.

Attitude and motivation

Create a positive attitude toward good nutrition and provide motivation for improved nutrition, conducive to promoting and maintaining a high level of wellness for employees.



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Developing your nutrition education programme

FIND THE FOCUS FOR YOUR PLAN

NUTRITION ISSUES

Understanding your context

The first step in developing your nutrition education programme is to define the key nutrition issues that occur among the workforce. Your programme's messaging, channels and campaign choices will focus on the issues that you've defined.

There are several common nutrition issues that have been identified across different companies, which are worth focusing on. These focus areas are outlined in the following table along with universal recommendations.

Focus	Universal nutrition recommendations	Table 01
Healthy diets Many people struggle to have a balanced diet, with sufficient amounts of vegetables, a variety of protein sources and fortified or whole grains. It can be a challenge to determine adequate individual portion sizes to meet the nutrient needs of the body. Therefore, we recommend including this set of key messages for all target groups and work contexts, as these recommendations form the basis of a healthy diet	Shift towards a balanced diet which includes a variety of foods from different food groups. Where possible choose more fortified starchy staples products and whole grains. Consume a variety of protein-rich foods (animal or plant based) throughout the week. Consume a variety of vegetables and fruits, aiming for at least five portions per day across all meals and snacks.	
Diet-related diseases Do employees eat foods with too many calories or too much sugar, salt, or fat? All employees but especially those who are at risk for overweight, obesity, and diet-related non-communicable diseases (such as diabetes, stroke, and heart disease) can benefit from a balanced diet with limited added sugar, salt and fat. Consider including these key messages if these issues are relevant for your workforce.	To help healthy weight maintenance and promote overall health limit foods rich in added sugars, saturated fats and salt. Drink plenty of safe water or choose unsweetened water-based drinks such as tea instead of sugar-sweetened beverages.	
Women's health If women form a significant proportion of your workforce, you may want to include messages that are specifically relevant for your female workforce. This includes information on maternal nutrition (dietary recommendations during pregnancy and lactation), breastfeeding and infant and young child nutrition, as well as information on anaemia.	Increase the consumption of iron-rich foods. Increase consumption of nutrient-dense whole foods during pregnancy and breastfeeding, to meet the nutritional requirements of your body and those of your child. Exclusively breastfeed your child up to six months of age and continue breastfeeding up to two years of age combined with nutritionally adequate complementary feeding.	

YOUR TASK

Determine the nutrition context that is most applicable to your workforce and explore which recommendations you would like to focus on in your nutrition education campaign. This will help you get the most from your investment as people are likely to be more engaged.

We advise you to focus on one issue and one recommendation at a time. For example, if your employee observations and discussions show an issue with unbalanced diets, you may want to start with a focus on the benefits of eating vegetables and fruits. This makes for more effective communication and easier adoption for employees.

You will be aware of some of the public health issues in your area, but to help you decide on your priority areas you could consider:

Listen
Create opportunities to listen to employees via staff champions, surveys or focus groups to find out what are their interests and challenges related to eating habits and dietary health issues for themselves and their families

Consult
Consult medical staff (if relevant to the context) for their reflections on the common nutrition related health issues among staff, while respecting individual medical confidentiality.

Observe
Look at your own information on employees to observe patterns in sickness absence – for example if absence is due to sick infants, you could focus on the importance of breastfeeding for working mothers of young children.

Need more support?

This guidebook is designed to provide you with the basic information required to set up a nutrition education programme, but you might want to hire a nutritionist or dietician to support this effort.

BEHAVIOUR CHANGE

Nutrition education and behaviour change

Behaviour change

Many of us find it difficult to make healthier choices, even if we would like to, knowing the long-term benefits of a healthy lifestyle. Changing behaviour is no small task, as our brain prefers the most familiar route. Habits tend to make our lives easier, as this allows us to be on auto pilot for reoccurring tasks such as food choices, freeing up brain capacity for the more complex issues that we face every day. Even though this mechanism adds value to our lives, it does require an extra effort if we are interested in breaking certain patterns and replacing them with healthier behaviours. Luckily, this process can be enabled by addressing the barriers and drivers towards behaviour change.

A well-designed and tailor-made nutrition education campaign can support employees in adapting new behaviours. It is helpful to understand what is holding us back from adapting a healthier behaviour, and what would drive us to integrate it into our lives. This chapter explains the process of identifying desired behaviours and mapping out the road to get there.

In the previous section you have identified the nutrition issues a particular workforce faces. Now, let's explore what drives this workforce to change their nutrition behaviours, what barriers may exist, and how a nutrition education campaign may support them in opting for more nutritious foods throughout the day. Engaging representative members, if not all members, of a workforce in this process contributes to designing an effective nutrition education campaign that will be most widely accepted.

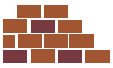
Barriers for behaviour change

Current behaviour

The best road towards learning a new behaviour is to replace an existing one. Therefore, it all starts with identifying the 'current behaviour' that employees wish to change. In the previous section you have identified which nutrition issues are most relevant for a workforce. Discuss with employees which food choices they are making that contribute to these nutrition issues, and whether they are open to change. You might want to hire a nutritionist or dietician to help inform you, as well as employees, on what constitutes an improved behaviour.

Example of current behaviour

Your nutritionist may discover that employees are consuming a heavy lunch meal contributing to a high energy intake and ultimately overweight or obesity. In the discussions with them they have indicated that they are open to change this, as they are aware that overweight or obesity is associated with poor health and maybe some also know they have a higher risk for non-communicable diseases in the long term.



Barriers

For the current behaviour to change, a number of barriers have to be reduced or eliminated. These barriers are the things that stop one from adopting a new behaviour. There are many kinds of barriers, and often they have to do with a certain lacking, some of which can be overcome with structured education. To name a few: a lack of knowledge or understanding, shortage of resources, poor availability or accessibility of healthy foods, no motivation or incentives to change. Nutrition education plays a particular role in solving a lack of knowledge and understanding and attempts to increase awareness and support healthy behaviours. A more intensive effort than nutrition education is a behaviour change approach which more robustly addresses these barriers with more than just information.

Example of barriers

Employees enjoy the lunch meal and are not aware that the meals they choose contain more calories than their body needs to maintain their current weight, or the possible long-term effects of being overweight on their health and quality of life.

Desired behaviour

The last step is to identify some improved or optimal behaviours you want to adopt. This is a behaviour that contributes to the health and wellbeing of people in the long term. A nutrition education campaign can support employees in practicing and adapting this new behaviour, by steering employees in the right direction. A good way to formulate a desired behaviour is by making it as specific as possible. Discuss with employees what they would like to change to make their lunch healthier: what would they like to eat, what not, when, how much, etc. You might want to hire a nutritionist or dietician to help inform you and employees on what constitutes an improved behaviour. You can see how this element of education might fit with the food provision in your workplace.

Example of desired behaviour

Employees choose to reduce their portion size or decide to switch to eat a meal that contains more fruits and vegetables.

Note on campaigns including weight management

To avoid stigmatizing individuals who are not a healthy weight, campaigns should focus on feelings of wellbeing and positive performance.

YOUR TASK

If you wish to effectively support change in the nutrition behaviour of employees, it's worthwhile to define the current and improved behaviours and write down the likely barriers for change.

Engage employees in this process, as they will know best which habits they would like to change, what is holding them back and what is a realistic change towards a healthier diet.

DRIVING CHANGE

Drivers for behaviour change

In order to help employees adopt the desired behaviour and improve their nutrition, there are three drivers that can be used to break barriers: triggers, enablers and motivators.

Triggers

Triggers get people to **start a new behaviour**. When trying to identify what triggers people, look for things that motivates them to start doing something new. Typically, you will look for other ways to offer rewards. For example, encourage employees to eat more vegetables by offering them discounts on high vegetable meals.

Enablers

Enablers help people to **carry out the new behaviour**. There might be practical reasons why employees cannot start with their new behaviour. For example, if people have recognized that they would like to include fortified foods in their diet, it's absolutely necessary to have easy access to affordable fortified food options. The easier one makes it, the higher the uptake. Straightforward examples of enablers are things like availability, accessibility, acceptance and affordability. Your role as an employer or programme designer is to create a climate and context that allows a change of behaviour to happen.

Motivators

Motivators are things that help people **stick to the new behaviour**. In the specific context of food, where people tend to fall back to old habits easily, motivators are crucial. Common examples of motivators are loyalty cards, memberships, becoming part of a community, or displays progress or success (never negative motivators that may shame people).

YOUR TASK

Think of three triggers, three enablers and three motivators that break each of the barriers you've defined. Great to turn this into a bit of a brainstorm among work teams and staff. Once you've done this, select the ones that are most likely to reap success. Validate and refine findings with employees.

GETTING TO THE CORE

Make your message

Core message

With nutrition issues and key drivers for behaviour change defined, you can start to think about the messaging you'd like to share with employees in your nutrition education campaign. Of course, your messaging should have a sound and factual nutrition foundation.

YOUR TASK

In order to help you steer and craft your messaging, we developed the simple model below. If you fill out each of the components of the model you will have your core messaging in place.

1. Purpose

Write down the purpose of your nutrition education messaging. You may want to increase awareness on the importance of breast feeding or you might want to support employees to switch to a balanced meal. These are different goals. Your purpose often has to do with getting from a current behaviour to a desired behaviour.

Example

The purpose of this campaign is to encourage people to eat healthy snacks instead of fried snacks.

2. Know, feel and do

What would you like people to know, feel and do if they receive the messages in the nutrition education campaign? Write down short and simple sentences for each. The more complicated you make it, the harder it will be for people to digest.

Example

The core message should help people to know that healthy snacks can contribute to a healthy diet. It should help them to feel energetic, focused and productive. It should help them to do eat a healthy snack.

3. Message

Have a look at what you wrote down for 'do' and 'feel'. This brings you very close to your core message, simply because it is exactly this that you should focus your message on. You should then wordsmith those sentences into a core message. Quite often, it's that simple.

Example

Eat a healthy snack during the workday to stay energetic and focused.

This core message you can now enhance with argumentation that you would often find under the 'know'. So, in this case there are many reasons that make including healthy snacks good for the health of employees. You should try to find arguments that resonate well with employees. Maybe in your company, employees have a long time in between meals resulting in lower blood sugar and lower concentration, which could be improved by consuming a healthy snack during the workday. The drivers you've defined in the previous section may offer guidance here.

Example

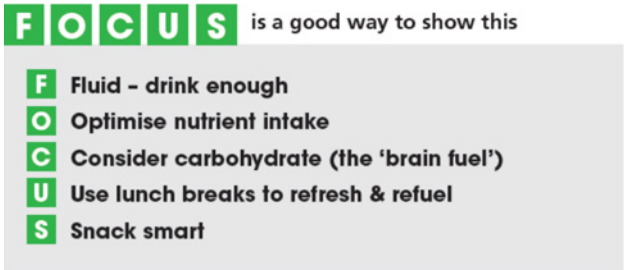
Did you know that snacks can contribute a significant proportion of energy and nutrients to our overall diet? Eat a healthy snack to stay energetic and focused throughout the workday.

You can see how this campaign makes the desired behaviour relevant to employees, their working days at your organisation and their personal wellbeing.

By avoiding a directive and negative approach such as "Don't eat unhealthy snacks, they're bad for your health" your campaign is likely to be more effective. You can take this further by also making it specifically relevant to their work.

Example

BDA Work Ready runs tailored educational activities for UK workplaces and uses healthy eating principles to engage in a variety of topics – food and mood, gut health, workplace performance, etc. Their workshop on focus and productivity takes evidence from what we know about the food choices that help us work smarter and applies it to a helpful acronym:



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Format and engagement

PUTTING YOUR PLAN INTO ACTION

FORMIDABLE FORMAT

Getting the format right

Now, that you've settled on your core message, it's time to choose the right nutrition intervention and channel to bring nutrition education to employees and help them to improve identified dietary behaviours. You can take your nutrition education programme in many different directions. This chapter may serve as inspiration for which interventions and channels could be relevant and effective to your context.

Nutrition interventions

The following table includes different types of nutrition interventions you can adopt to support adaptation of healthier behaviours among your workforce. We have included some simple examples of what others have successfully tried. Typically, these interventions are fuelled by the drivers you've defined beforehand and aim to help overcome the identified barriers for change.

Table 02

Types of nutrition interventions	Examples of nutrition interventions
Education Increase nutrition knowledge or understanding	Food labels, food facts, quiz, memo board, posters, instructions, chat group, articles, social media posts
Motivation Use communication to induce positive feelings or stimulate action	Poster campaigns, photo and video messaging, striking statistics
Rewards Introduce incentives to choose healthy options	Prize draws, loyalty programmes, gifts, rewards, group activation, competitions, challenges, gamification, nudging
Training Provide the opportunity to learn new skills	Cooking classes, cooking competition, healthy nutrition seminars or workshops, breast feeding advice, expert sessions
Change the context Change the physical or social context for employees	Create a safe space for breastfeeding or health checks. If food is available in your worksite, make healthy food more visible or replace unhealthy food with healthier items.
Set an example Provide an example for employees to aspire to or imitate	Speeches, pledges, demonstrations, experts, community building, employee initiatives
Empowerment Support employees in the process of adapting new behaviours	Behavioural support, coaching, individual counselling, group support mechanism

Channel choice

There are many different kinds of channels you could consider to reach employees. Some channels take very little effort to set up, other require a high touch and are resource intensive. You may want to use the existing communication channels you have in place to communicate with employees as a starting point.

In the table below we make a distinction between six broad categories. We give examples for each category. This table is intended to help you to choose the right channel. Ideally, your nutrition education campaign goes beyond the relatively static push and pull channels, and includes interactive channels that facilitate conversations, community, engagement and participation.

Table 03

	Type	Description	Examples of channels
Static channels	**Push channels**	Channels that display information. Employees are not required to take any action.	Email, pop ups, posters, leaflets, toilet stalls, line managers, tv screens, messaging applications.
	Pull channels	Channels that help people find the information they are looking for, when they need it.	Reports, manuals, service deck, nutrition managers.
Interactive channels	**Conversational channels**	Channels that promote conversations as a way to build understanding.	Meetings, events, calls, working groups, demonstrations, discussion boards, roadshows, messaging applications, word of mouth, chat bots.
	Community channels	Channels where people start to feel part of a workspace community.	Make healthy behaviour a positive and fun topic to discuss amongst colleagues.
	Engagement channels	Channels that inspire and create engagement.	Cooking classes, cooking competition, healthy nutrition lessons, breastfeeding advice, expert sessions, tasting sessions.
	Participatory channels	Channels that allow employees to share views and concerns.	Surveys, polls, focus groups, team meetings, co-creation sessions.

Multiple channels

Do keep in mind that changing behaviour requires much more than just hearing a message once. For example, sending out a text message is very effective to raise awareness across a large audience but is unlikely to have a lasting effect when it comes to changing behaviour. Therefore, it can be part of a broader nutrition education campaign but should not be implemented as a standalone intervention. The most effective approach is usually to choose multiple channels and repeat the same information in different forms and over a period of time. Ideally this is part of a broader workforce nutrition programme that includes elements such as free access to individual counselling or healthy food options at the workplace.

YOUR TASK

Explore the examples of interventions and channels presented in this section and select which make the right carrier for driving change, overcoming barriers and getting your message across to outline a fitting nutrition education programme.

Make an engagement plan

You'll want to plan, time and deliver your nutrition education programme to engage employees and get the desired outcome. Some steps to take to maximise your chances of success include:

1. Timing

Research shows that wellbeing interventions should not be started during celebrations or festivals and periods of business change as they are less effective, so avoid starting up during a restructure or big changes.

If employees have different shift patterns or working times, then think about the timing and availability of expert-led sessions and try to schedule it at the right times.

2. Create ownership

Throughout this document we have included ways you can include employees in the planning of your nutrition education programme. It is common for a wellbeing team to come up with ideas that are meaningful for them – but that do not align with employee interests and priorities.

By including employees from all areas of the organisation in your planning, you'll be able to find the topics and behaviours that are most relevant to them.

3. Campaign branding

Think about a consistent image for your nutrition education programme, or wider wellbeing initiatives. You'll want employees to build a positive association with this but you don't have to develop a whole new brand.

Simple wording such as "supporting your health" or "eating better" alongside the company branding can be useful to add to all your communications.

4. Feedback

Your evaluation does not have to be complex, but you should aim to collect feedback and employee attitudes after your nutrition education sessions. Be realistic about the impact of, say a workshop or a new poster – on its own it is unlikely to create a long-term change in desired behaviours.

You can ask about increase in knowledge, their ability and willingness to try some of the strategies, and you can monitor other things such attendance at healthy food tastings, to show the impact of your education. Ask about other topics of interest and use this feedback to improve and refine your programme. In the next section on monitoring, you will learn more about setting up your monitoring plan.

5

Tracking change

MONITOR YOUR PROGRESS

TRACKING CHANGE

Monitor your progress

Monitoring is a key success factor for any workforce nutrition programme. Collecting data and evaluating outcomes can help you quantify the programme's impact and inform future decisions. Monitoring can also alert you to coming challenges before they become problems. Including a plan for monitoring from the start will help keep the programme on track.

First answer the following questions:

What do you want to know?

How will you gather and measure data?

Who is responsible for the process?

What do successful outcomes look like?

What will you do with the information that is collected?

We've included some examples to help you think through the outcomes that you may want to monitor to help determine if your program is a success and whether it needs any course correction. Your company might already gather data, such as annual employee satisfaction surveys. Make sure to use and build upon the existing data collection, to make this process most efficient.

1. Reach

Start with tracking the proportion of the workforce that participates in the nutrition education campaign.

Measurement example

The percentage of workers who participate in the nutrition education programme (e.g. percentages of male and female workers who participate in a cooking class and the percentages of male and female workers who participate in the healthy eating support groups).

2. Knowledge

Even though knowledge is just one of many components influencing behaviour change, it would be helpful to understand if your campaign contributes to the knowledge on nutrition and health of staff.

Measurement examples

The percentage of workers with improved knowledge and awareness of healthy nutrition-related behaviours.

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References

TOOLS TO LEARN MORE

LEARN MORE

References

1. Dhillon, C. N.; Stone, G. *The evidence for workforce nutrition programmes. GAIN (2019).*

2. Anderson, J. *Interventions on diet and physical activity: what works : summary report. (World Health Organization, 2009).*

3. Geaney, F. et al. *The effectiveness of workplace dietary modification interventions: a systematic review. Prev. Med. 57, 438–447 (2013).*

4. Ni Mhurchu, C., Aston, L. M. & Jebb, S. A. *Effects of worksite health promotion interventions on employee diets: a systematic review. BMC Public Health 10, 62 (2010).*

5. Engbers, L. H., van Poppel, M. N., Chin A Paw, M. & van Mechelen, W. *The effects of a controlled worksite environmental intervention on determinants of dietary behaviour and self-reported fruit, vegetable and fat intake. BMC Public Health 6, 253 (2006).*

6. Rigsby, A., Gropper, D. M. & Gropper, S. S. *Success of women in a worksite weight loss program: Does being part of a group help? Eat. Behav. 10, 128–130 (2009).*

7. Moy, F. M., Ab Sallam, A. & Wong, M. L. *Dietary modification in a workplace health promotion program in Kuala Lumpur, Malaysia. Asia. Pac. J. Public Health 20 Suppl, 166–172 (2008).*

8. Park, H. et al. *Effects of Workplace Nutrition Education Program Tailored for the Individual Chronic Disease Risks. Korean J. Nutr. 43, 246–259 (2010).*

9. Cowbrough, Kathy & Gardner, Elaine. (2016). *Nutrition at Work: Nutrition interventions in workplace health programmes: a literature review. Occupational Health at Work. 13. 30-36*.

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GUIDEBOOK SERIES

INTRODUCTION

About the annexes

In addition to this guidebook, these four annexes are a tool to support employers in creating communication and training materials for workplace nutrition education campaigns. They help in selecting the nutrition recommendations most relevant to employees by creating understanding of the concept of a healthy balanced diet and potential benefits of dietary change. The annex consists of four sections.

Annex A: Healthy diets
Annex B: Diet-related diseases
Annex C: Women's health
Annex D: The role of key nutrients in the body

The guidebook section on 'Understanding your context' helps you define your specific workforce nutrition challenges and needs across the three areas of Annex A, B and C. The annexes provide sound and factual nutrition information for each of these areas. Use the information provided to create the right messages for your campaign.

Annex A

HEALTHY DIETS

ANNEX A

Healthy diets

If your assessment in the guidebook section on 'Understanding your context' has uncovered that you may want to focus on supporting employees with healthier diets, the information here will help you to create a more specific plan. Please note that this information is intended for a general population. It is not a substitute for personalised dietary advice given by a nutrition expert.

The term *diet* refers to the types and amounts of food eaten on a daily basis. Diets can vary considerably between cultures, countries, communities and individuals. Our diet can have a major impact on our overall health and wellbeing. Food is important for providing energy, protein and other essential nutrients to meet your body's requirements. Certain dietary patterns can also help protect against diseases such as heart disease and cancer. This section offers guidance to help put together healthy, balanced meals and snacks including a variety of different food groups.

A1. Balanced meals

Nutrition recommendation

Shift towards a balanced diet which includes a variety of foods from different food groups.

What makes a healthy plate?

The key to a healthy diet is to eat a variety and balance of foods from each of the main food groups. Meals should include starchy staples, protein rich foods, and vegetables and fruits in adequate proportions[1, 2]. The recommended proportions and groups shown in food-based guidelines vary slightly between countries, but the overall nutrition messages correspond with each other. Follow the food-based dietary guidelines in your country for specific recommendations relevant to your context. If these are not available, you can follow this general guideline:

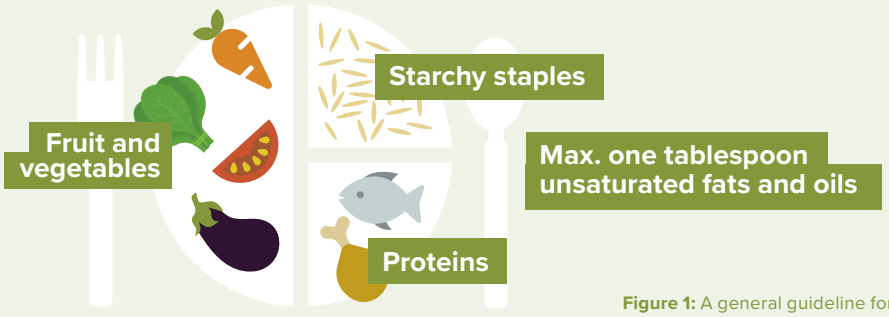


Figure 1: A general guideline for a healthy meal

Did you know?

One in three people worldwide are malnourished (including underweight, overweight/obese and micronutrient deficient individuals) resulting from unbalanced diets. Employers have the potential to support a positive change in dietary behaviour of their workers through nutrition education programmes. This could benefit the health and resilience of individuals, businesses and economies.[3]

A2. Starchy staples

Nutrition recommendation

Where possible choose more fortified starchy staples products and whole grains.

Why is eating starchy staples important?

Starchy staples include foods made from wheat, rice, maize, oats, barley, sorghum, millet and other cereals. Examples include bread, pasta and breakfast cereals. Starchy vegetables such as potatoes and sweet potatoes are also part of this food group. Starchy staples provide essential nutrients such as carbohydrate, iron, B vitamins, folate, zinc and dietary fibre. However, many starchy staple foods are refined, and this process can cause a reduction in some key nutrients. Where possible choose wholegrain and fortified varieties of starchy foods.

Starchy staples are often a good value for money source of energy. As a result, starchy staples represent a large share of people's diets in low- and middle-income countries. Therefore, there is potential for impact by switching to more nutrient rich options where possible.[1] How we include starchy staples in the diet:

Table 1 | Source: Nutrition at Work handbook[1]

Fortified grains	Whole grains	Refined grains
Grains that have nutrients added during processing. Fortified grains can provide valuable nutrients, like vitamin A.	Grains that are minimally processed. These have important nutrients like fibre, folate and iron. Examples include brown rice and whole grain bread.	Grains that are processed to have a finer texture. Refined, unfortified grains can contain fewer nutrients than whole grains as a result of processing. Examples are white rice and white bread.

Portion size

Considering the quantity of starchy staples you consume is as important as the type of grains. The following portion sizes of starchy staples are recommended for one meal.[1, 5]

One fist
Rice, maize or sweet potato (one cup per person)

Cupped hands
One piece flatbread or two slices brown bread

One handful
Breakfast cereal

Make your message

There are several messages you could embed in your nutrition education campaign to encourage employees to switch to fortified or whole grain starchy staples. You can use the guidebook to develop a core message, based on these messages.

Use whole grains instead of refined grains in mixed dishes like soups, stews or porridges.

Eat fortified rice or brown rice instead of white rice.

Switch to products made with whole grain flour or fortified flour instead of refined, white flour.

Think creatively about which grains to serve, instead of white maize meal or rice, serve more nutrient-dense alternatives such as sorghum or millet.[1]

Did you know?

Food fortification is the addition of essential vitamins and minerals (e.g. vitamin A, D, iron, iodine, folate, and zinc) to frequently eaten foods – such as wheat flour, rice, salt, milk, and edible oils. This can improve the dietary intake of key micronutrients without changing the taste, look, and smell of the food. Food fortification is an important strategy in preventing common micronutrient deficiencies. So, it is important to prioritize fortified food options, if available. Fortified foods can often be recognized by a national fortification logo on the packaging, so check which logo your country uses.

A3. Protein rich foods

Nutrition recommendation

Consume a variety of protein-rich foods (animal and/or plant based) throughout the week.

Why is eating protein rich foods important?

Protein is needed for growth and repair of the body. Consuming a variety of protein sources helps us to obtain sufficient amounts of all essential amino acids. Amino acids are the building blocks that form proteins. A sub-set of amino acids are called essential amino acids, meaning that our body cannot produce and they must come from food.[6] An adequate consumption of protein rich foods is especially important during periods of rapid growth or increased nutritional needs, including childhood, adolescence, pregnancy, and breastfeeding.[7]

For adults, insufficient protein consumption could weaken the immune system, increasing the risk of disease, and could result in organ failure, wasting and shrinking of muscles.[8]

How to include protein rich foods in the diet?

Protein can be found in both plant-based and animal-based foods. Plant-based protein sources tend to be limited in one or more essential amino acids. Therefore, it is important to consume a variety of these plant-based protein sources that complement each other or to consume plant-based together with animal-based protein sources. In addition, foods in this group are often a good source of vitamins and minerals. Eating a variety of protein sources is essential in achieving a healthy and balanced diet.[1, 7]

Table 2 | Source: Nutrition at Work handbook[1,5]

Protein rich food	**Nutrients** (see Annex D)	**Examples**
Pulses, flours and their products	Iron, Zinc	Beans, chickpeas, cowpeas, gram (black, green, bengal), green peas, kidney beans, lentils (red, green, yellow and brown), white beans, soybeans and soy products (soy milk, soy yogurt, tempeh, tofu)
Eggs and poultry	Vitamin A, B12, Choline	Chicken, quails, guinea fowl, turkey, duck
Red meat	Vitamin B12, Iron, Zinc	Beef, goat, lamb, mutton, pork, veal, venison
Offal	Vitamin A, B12, D, Iron, Zinc,	Liver, kidneys, heart*
Fish	Vitamin A, B12, D, Omega-3	Cod, salmon, sardine, tilapia, trout, tuna*
Dairy	Vitamin A, B12, Calcium, Iodine	Cheese (cow, goat, sheep), milk (camel, cow, goat, sheep), fermented milk, yogurt (unsweetened)
Nuts and seeds	Vitamin E, Calcium, Iron, Zinc	Almonds, cashews, peanuts, pistachio nuts, pumpkin, sesame and sunflower seeds

*Women who are pregnant or likely to become pregnant should not eat more than two servings of oily fish per week, and should avoid liver, shark, swordfish and marlin due to high levels of micronutrients or toxins which may be harmful to the baby. [58]

Portion size

Recommendations for protein will vary, but the following portion sizes of protein sources are a guide for one meal.[1]

One handful

Red meat: 90 grams

Chicken: 120 grams

Fish: 120-210 grams

One fist

Pulses: 210 grams

Yoghurt: 300 – 525 ml

Make your message

There are several messages you could embed in your nutrition education campaign to encourage employees to include a variety of protein sources in their diet. You can use the guidebook to develop a core message and drivers for behaviour change, based on these messages.

Eat protein rich foods, such as eggs or unsweetened yoghurt as a snack.

Reduce the amount of water used in lentils and bean mixtures (e.g. soups and stews) to include more protein per serving.

Roast, grill, bake, boil or steam protein foods instead of frying. Try to limit breading or battering your protein foods.

Eat fish regularly, and, in particular, eat oily fish (e.g. sardine, herring, mackerel, salmon, tuna, trout) at least once a week.

If following a vegan or vegetarian diet, eat a combination of different plant sources of protein.

If not following a vegan or vegetarian diet, eat a combination of animal and plant sources of protein.

Did you know?

People following a vegetarian or vegan diet, need to consume respectively 20% and 30% more protein foods to meet their bodies' essential amino acid requirements.[9]

A4. Vegetables and fruits

Nutrition recommendation

Consume a variety of vegetables and fruits, aiming for at least five portions per day across all meals and snacks.

Why is eating vegetables and fruits is important?

Vegetables and fruits are important sources of vitamins, minerals and fibre. Dietary fibre helps keep the digestive system healthy, and may reduce the risk of heart disease and type 2 diabetes.[10] Vitamins and minerals play an important role in the functioning of the brain and nervous system, eyesight, wound healing, strengthening the immune system, boosting energy levels, heart functioning, bone strengthening, and muscle recovery among other benefits.[11, 12, 13] In addition, people not eating enough vegetables and fruits, are more vulnerable to diseases and micronutrient deficiencies. Micronutrient deficiencies could cause reduced energy levels, mental clarity and overall work capacity or even lead to severe health conditions.

How to include vegetables and fruits in the diet?

Including a variety of types or 'eating a rainbow' of colours helps to ensure a range of different plant chemicals and nutrients.[14, 15] For more information, make sure to have a look at Appendix D for messages about the benefits of these vitamins and minerals.

Table 3 | Source: FAO & FHI 360, 2016, p16

Color	**Nutrients** (see Annex D)	**Examples**
Red, Orange, Dark Yellow	Vitamin A, vitamin C	Carrots, citrus fruits, mangoes, orange-fleshed sweet potatoes, papayas, (red) paprikas, (red) peppers, pineapples, pumpkins, and tomatoes
Dark Green	Folate, Iron, Calcium, Vitamin A and Vitamin C	Broccoli, cabbages, endive, lettuce, kales, okra, and spinach, amaranth leaves, pumpkin leaves
Others	Potassium	Banana, beets, carrots, eggplant, pumpkin, spinach, and (water)melons

Portion size

Try to eat at least 400 grams of vegetables and fruits each day (about five portions) to improve overall health and reduce the risk of (non-communicable) diseases.[16] For example, one portion could be half a mango, half a cup (60 grams) of pumpkin or one cup (65 grams) of raw kale (or ½ cup if cooked).

Make your message

There are several messages you could embed in your nutrition education campaign to encourage employees to consume a variety of vegetables and fruits. You can use the guidebook to develop a core message and drivers for behaviour change, based on these messages.

If you cannot buy fresh vegetables and fruits, frozen vegetables and fruits or naturally fermented foods (e.g. kimchi, sauerkraut, and pickles) are a very good alternative. Canned vegetables and fruits could also be an option but try to buy fruits canned in water or 100% juice instead of syrup and try to buy low-sodium canned vegetables in brine (instead of oil).

Eat fruits (or vegetables) as a snack during breaks. Both fresh and dried fruits without added sugars are a good choice. Limit the consumption of fried fruits and vegetable snacks (e.g. banana chips, onion or pumpkin fritters).

Use whole instead of peeled vegetables and fruits. Peeling vegetables and fruits removes key nutrients found in the skin and reduces the amount of food that is available to serve.[1]

Add grated, shredded or chopped vegetables to your meals. A mix of vegetables boosts the flavour of your pasta, rice, curries, stews, and stir-fries. Your dishes will never get boring.

Use cooking methods such as steaming, boiling, grilling or roasting instead of deep frying vegetables.

Reduce the amount of salt added to vegetables and use more herbs and spices instead.

Did you know?

It is very important to always wash your vegetables and fruits with clean water before consumption. Vegetables and fruits may be contaminated by pesticide residues or pathogens (bacteria, viruses or parasites) which could cause foodborne diseases.[17]

Annex B

DIET-RELATED DISEASES

ANNEX B

Diet-related diseases

If your assessment using the guidebook on Nutrition Education has identified that your employees may be at a higher risk for diet-related non-communicable diseases, the information here will help you develop relevant messages for your nutrition education campaign. Please note that this information is intended for general population level information only. It is not a substitute for personalised dietary advice given by a nutrition expert.

The introduction of ultra-processed foods and sugar sweetened beverages increased our overall energy consumption from sugars and fats, as well as our salt intake, resulting in unhealthy weight gain and increased risk of non-communicable diseases such as high blood pressure, stroke, diabetes or cancer. Overweight or obesity can pose risks for health,[18] and obesity may increase the risk of temporary work loss, including sick leave (absenteeism) and can reduce work productivity.[19] Overweight or obesity are usually caused by an energy imbalance between the calories consumed and the calories burned with (physical) activity. Globally, changes in dietary behaviour and physical activity are responsible for the increased occurrence of overweight and obesity. This section offers guidance to help your employees shift towards healthier food options, and lower the risk of diet-related diseases.

B1. Ultra-processed foods

Nutrition recommendation

To help healthy weight maintenance and promote overall health limit foods rich in added sugars, saturated fats and salt.

What are ultra-processed foods and why to avoid them?

Processing foods can help preserve foods, increase food safety, improve nutritional value (fortification), and improve the utilization of nutrients in the body. Traditional processing methods include cooking, drying, refrigerating and freezing, and fermenting foods. However, food processing could also change the composition of foods unfavourably.

Minimally processed foods are unprocessed foods that are processed (e.g. cleaning, removal of inedible fractions, portioning, refrigeration, freezing, pasteurisation, fermenting, pre-cooking, drying, skimming, bottling, canning, and packaging) without adding salt, sugar, oils/fats or other substances and without altering the nutritional properties of the foods.[20]

The so-called ultra-processed foods have often lost some important nutrients and dietary fibre and may contain excessive amounts of saturated fats, trans-fats, added sugars, sodium (salt) and potentially harmful additives.[20] Regular consumption of ultra-processed foods could cause overweight and obesity, and non-communicable diseases including certain types of cancer, heart disease, type 2 diabetes and high blood pressure (hypertension).[20] See the NOVA Classification System[20] for a detailed explanation on the different types of food processing.

Body Mass Index

Body Mass Index (BMI)[18] is a calculation often used by researchers and healthcare professionals to determine weight status in adults. The BMI can be calculated with the following formula:

$$\textbf{Body Mass Index (BMI)} = \frac{\textbf{Weight (kg)}}{\textbf{Height}^2 \textbf{ (m)}}$$

Weight status	BMI
Underweight	≤ **18.5**
Optimal	**18.5 – 25**
Overweight	≥ **25**
Obese	≥ **30**

How to switch to healthier options?

It is important to focus on eating a diet mainly based on nutritious whole foods such as fruit and vegetables, wholegrains and healthy protein sources. Foods which are less healthy are sometimes classified as 'ultra-processed'. While definitions vary and this can be over-simplistic, there are some characteristics which can indicate we should take some time to consider the nutrition labels and ingredients:[21]

- *Large ingredient list*
- *Unfamiliar additives*
- *A combination of added salt, sugar, and fats*
- *Ready to eat or heat in packaging*

Examples of ultra-processed foods include sugary drinks; sweet or savoury packaged snacks; ice-cream, chocolate, candies; cookies, pastries, cakes; 'energy' bars; 'energy' drinks; 'instant' noodles and sauces; ready to eat or heat pies and pizza; chicken and fish 'nuggets, sausages, and burgers; chips.[21] The following table could be helpful to quickly distinguish ultra-processed foods from minimally processed foods and processed foods.[21, 22]

Table 4 | Source: NHS, 2020[25] and Ophardt & Rodriguez, 2013[26]

Minimally processed-food	Processed food	Ultra-processed food
Fresh, frozen or dried apple (with no added ingredients)	Apple juice with added sugar	Apple pie
Fresh, frozen or dried carrot (with no added ingredients)	Carrot juice with added sugar	Carrot cake
Corn cob	Canned corn in brine	Corn chips
Boiled potato (with no added ingredients)	Baked potato with added salt and/or oils and fats	Potato crisps
Wheat grain and flour	Freshly baked bread	Industrial packaged breads and buns
Chicken filet	Smoked chicken	Chicken nuggets

The next step is to shift the ultra-processed foods in the diet towards more whole foods and minimally processed foods and to find options that are lower in saturated fat, added sugars, salt (sodium) and additives.

B2. Nutrients to watch

Dietary fats

Dietary fats provide energy, regulate body processes and play a role in cell and body structure. In addition, fat is important for the absorption of fat-soluble vitamins A, D, K and E.

However, not all fats are good for the body. Try to decrease your saturated fats intake and avoid trans-fats as they could cause coronary heart disease.[23] The main source of industrially produced trans fats are hydrogenated oils, such as margarine and vegetable ghee.[24]

Table 5 | Source: NHS, 2020[25] and Ophardt & Rodriguez, 2013[26]

Type	Form	Examples
Saturated fats	Solid at room temperature	Butter, cream, cheese, coconut oil and coconut cream, palm oil and fatty parts of meat
Unsaturated, plant-based oils and fats	Liquid at room temperature	Rapeseed, peanut, olive, sesame, linseed and sunflower oils

Other sources of unsaturated fats are nuts, seeds, avocados, soya beans, and fatty fish.[27] Unsaturated fats can fit into a healthy diet when used sparingly: just one tablespoon of unsaturated fat/oil or less can be enough to prepare your meal.[5] Use fortified oils where possible to increase nutrient intake and tackle specific micronutrient deficiencies.

Free (added) sugar

Sugars are the building blocks of all carbohydrates. For more information about starchy carbohydrates see Annex A. Sugars are major energy providers to the body and keep people active throughout the day. In addition, sugars are important brain activators and boost your attention.[28] However, overconsumption of free sugars contributes to excessive energy levels without providing any other nutrients to the body, which could cause overweight and obesity. Sugar is often added to food products as preservative and/or flavour enhancer.

Table 6 | Source: EUFIC. (n.d.). Sugars[29]

Examples of foods rich in added free sugars		
Sweetened fruit juices	Jams and marmalades	Breakfast bars and cereals
Sauces	Soft drinks	Desserts, candies, and other sweet treats

Therefore, try to avoid overconsumption of sugars and replace food products with added sugars by natural sources of sugars to boost your energy levels. Products that naturally contain sugars often also provide the body with important fibres and essential nutrients, such as vitamins and minerals.

Table 7 | Source: EUFIC. (n.d.). Sugars[29]

Examples of foods that are naturally rich in sugars				
Fruits	Vegetables	Pulses	Milk and dairy	Grains

The WHO recommends to limit the intake of free sugars to less than 10% of the total energy intake.[30] This is approximately 12 teaspoons (200 kcal) of free sugars for an adult.[31]

Salt

Salt consists of the minerals sodium and chloride. Sodium helps with the transportation of glucose and other nutrients across cell membranes.[27] However, excessive sodium (salt) consumption can cause high blood pressure, which increases the risk of heart disease and stroke.[32] Salt is often used in food products as preservative and/or flavour enhancer.

Table 8 | Source: NHS Salt: The facts[32]

Examples of food products high in salt			
Cheese	Olives	Pickles	Sauces
Salty fish	Smoked meat	Bacon, ham and sausages	Crisps
Ready meals	Smoked fish		

Many people consume too much salt, as salt is present in many of the foods we consume daily.[33] Therefore, try to limit foods with added salt and limit adding salt to your meal. Instead, use herbs and spices to enhance the flavour of your meal. In case you do add salt to your meals, only use fortified salt and in limited quantities.

Food labelling

Reading the label of a food product is helpful to learn more about the fat, sugar and salt content.
Food labelling can help your employees to identify if a food product is high or low in fat, sugar and salt.

Table 9

Nutrient to watch	High (per 100 g)	Low (per 100 g)	Source
Fat	> 17.5 g	< 3.0 g	NHS, 2020
Saturated fat	> 5.0 g	< 1.5 g	NHS, 2020
Sugar	> 22.5 g	< 5.0 g	NHS, 2018b
Salt*	> 1.5 g	< 0.3 g	NHS, 2021
Sodium	> 0.6 g	< 0.1 g	NHS, 2021

*The amount of salt in a food product is as much as 2.5 times the amount of sodium.[32]

Make your message

There are several messages you could embed in your nutrition education campaign to encourage employees to opt for healthier foods. You can use the guidebook to develop a core message and drivers for behaviour change, based on these messages.

When buying canned foods (e.g. fruits, vegetables, pulses, fish), try to choose the foods preserved in 100% water (or fruit juice) or choose low-sodium options. This information can be found on the label of the products.[34]

When buying packaged products that are heavily promoted, check the nutritional information on the product label yourself.[20]

When buying salt, try to buy fortified salt if available. Fortified foods can often be recognized by a national fortification logo on the packaging, so check which logo your country uses.

Do not put salt, sugar or (manufactured) sauces on the table during meals or you could make more of your own sauces (limiting the amount of salt, sugar and fat).

If the food being cooked seems like it needs more liquid, add a little hot water instead of oil.[1]

Heat pans before adding the oil to the surface. This allows the oil to heat more quickly and spread further, requiring less oil to be used.[1]

Trim the fat edges from your meat to limit your saturated fat intake.

Use cooking methods such as boiling, steaming, grilling and baking instead of deep frying, to reduce your fat consumption.

B3. Sugar-sweetened beverages

Nutrition recommendation

Drink plenty of safe water or choose unsweetened water-based drinks such as tea instead of sugar-sweetened beverages.

What are sugar-sweetened beverages and why to replace them by water?

High consumption of sugar-sweetened beverages can contribute to excessive energy intake without providing any other nutrients to the body or a feeling of satisfaction. This means that you may consume as many calories as a solid meal or snack, but without having the same feeling of satisfaction, which may lead to overconsumption of sugars.

Table 10 | Source: HSPH. Sugary Drinks. The Nutrition Source[35]

Examples of sugar-sweetened beverages			
Sodas like coke or lemonade	Sweetened (manufactured) fruit juices, iced tea and coffee	Sweetened powdered drinks	Energy drinks

The disproportionate amount of calories provided by sugar-sweetened beverages can contribute to overweight and obesity, increasing the risk of non-communicable diseases such as a type of arthritis, gout, type 2 diabetes, heart disease, and certain types of cancer.

Decreased consumption of sugar-sweetened beverages ideally combined with an increased consumption of clean and safe water could reduce weight gain or could even contribute to weight loss.[36, 37]

Drinking plenty of water throughout the day is important to stay hydrated. See Annex D to get an overview of the role of key nutrients in the body for more about water's role in our body.

During the day, the body continuously loses water through sweat, urine, faeces, and breath. Not drinking enough water can result in dehydration, which can reduce productivity.

Table 11

Signs of dehydration[27, 36, 38, 39]		
Low blood pressure	Weakness	Fatigue
Dizziness	Confusion	Reduced alertness
Dark urine colour		

Make your message

There are several messages you could embed in your nutrition education campaign to encourage employees to drink plenty of safe water and choose water-based drinks instead of sugar-sweetened beverages. You can use the guidebook to develop a core message and drivers for behaviour change, based on these messages.

Access to safe water is not self-evident to everyone. If water may not be safe, boil it for one to three minutes to kill disease-causing pathogens, such as viruses and bacteria. After boiling the water, first let it cool and then store it in a clean, closed jug/container.[40]

Boil, cool and store enough water to meet your (and your family's) recommended daily water intake to prevent waiting for safe water while you are thirsty.

Recommended daily water intake

Drink at least eight glasses (two litres) throughout the day. During hot weather or intense physical activity, your body requires more fluids because the amount of water lost through sweat increases.[39]

Have a drink of water during breaks and with meals.

If you would prefer a different drink, unsweetened coffee, tea or herbal infusions could be an option. However, adults should limit the consumption of coffee and tea to a maximum of four cups a day.[41, 42, 43]

*Tea and coffee consumption should be limited to four cups a day as it could decrease the absorption of plant-based sources of iron (non-haem iron) in the body. It should therefore not be consumed together with food. It is best to drink tea or coffee at least one hour before or after a meal. Some country guidelines advise that pregnant women and children should avoid drinking coffee.[27]

Did you know?

About 50-70% of the body consists of water, and good hydration is important for the body to function properly. Adequate hydration has been shown to improve health, wellbeing and productivity in the workplace.[27, 36, 39]

Annex C

WOMEN'S HEALTH

ANNEX C

Women's health

If your assessment using the guidebook on Nutrition Education has identified that you should focus on supporting women in particular, the information here will help you to understand some of the terminology. Please note that this information is intended for general population level information only. It is not a substitute for personalised dietary advice given by a nutrition expert.

Throughout their working lives and into retirement, women have specific nutritional needs and challenges that would benefit from extra consideration. For example, people who menstruate need more iron and are at higher risk of iron deficiency anaemia. Pregnant or breastfeeding women also have increased nutritional needs. This section covers these specific challenges women face and will be relevant to all employers.

C1. Iron needs and iron-deficiency anaemia

Nutrition recommendation for a female workforce
Increase the consumption of iron-rich foods.

Why increased iron intake is important for women?
Iron is needed to produce red blood cells to transport oxygen in the body. In addition, iron is important for growth and development and it plays a role in keeping people energized. Women of reproductive age have higher iron requirements and higher risk of iron deficiency, because of blood loss during menstruation. Iron deficiency is one of the (three) most common nutritional deficiency disorders in the world.[44] People who do not consume enough iron are at risk of iron-deficiency anaemia. The consequences of anaemia are serious, for example a lower overall capacity for physical work (fatigue, lack of focus), impaired brain development and impaired immune system.[45]

How to include iron in the diet?
Iron can be obtained from several sources.[46]

Animal based (haem) iron
Rich sources include red meat, offal, some oily fish, small dried fish, egg yolks.

Plant based (non-haem) iron
Rich sources include beans and whole grains, nuts and seeds, dried fruits, dark green leafy vegetables, iron fortified foods, such as flours.

In general, the body can better absorb iron from animal-based sources than from plant-based sources. Absorption of non-haem iron can be improved by consuming it together with vitamin C. Citrus fruits or dark green leafy vegetables are examples of foods that contain high amounts of vitamin C. In contrast, calcium can limit the absorption of iron. It is therefore recommended to consume calcium-rich products (e.g. dairy) not in the same meal as iron-rich products.[46]

Portion size

In general, women have higher iron needs - but they tend to eat less calories than men. This makes it even more challenging for women to meet their iron needs. The table below shows iron requirements for men and women at different life stages.[46, 47]

Table 12

Life stage	Recommended daily iron intake
Adult men (>18 years)	11.0 mg
Adolescent women (14-17 years)	15.0 mg
Adult women (>18 years)	16.0 mg
Postmenopausal women	11.0 mg

Make your message

There are several messages you could embed in your nutrition education campaign to encourage your female workforce to increase the consumption of iron-rich foods. You can use the guidebook to develop a core message and drivers for behaviour change, based on these messages.

Try to consume foods or drinks rich in vitamin C (such as citrus fruits, unsweetened fruit juice, dark green vegetables, or a salad) in combination with plant-based iron-rich foods (e.g. pulses) for a better absorption of iron in the body.

To maximise the absorption of the iron in the body, you can also try waiting for a small amount of time after eating iron rich foods before eating foods rich in calcium (such as milk, cheese or other dairy foods).

If possible, try to buy iron-fortified products such as oils or flours.

C2. Pregnant and lactating women

Nutrition recommendation

Increase consumption of nutrient-dense whole foods during pregnancy and breastfeeding, to meet the nutritional requirements of your body and those of your child. Exclusively breastfeed your child up to six months of age and continue breastfeeding up to two years of age combined with nutritionally adequate complementary feeding.

Why breastfeeding is important to your female workforce?

Breastfeeding is the most effective preventive public health intervention for child survival and has the potential to prevent 13 percent of all deaths in children under five year in the developing world.[57] Besides the importance for babies, breastfeeding is also important to maternal health:

1. Breastfeeding promotes mother-child bonding and psychosocial development.
2. Early initiation of breastfeeding helps contract the uterus and expel the placenta and reduces postpartum bleeding.
3. Breastfeeding delays return of menstruation, helps recover iron stores and acts as a natural form of birth spacing.
4. Women who breastfeed have lower rates of premenopausal breast- and ovarian cancers.[48]

Nutrition requirements of pregnant and lactating women

Pregnant and lactating women have some increased nutrient requirements, to ensure healthy development of their baby and also to keep themselves adequately nourished. Some of these requirements can be taken into account at the workplace, both for food provision and nutrition education campaigns. For example, pregnant and breastfeeding women need to eat more calories, protein and drink more liquids. Additional calories required should be obtained from nutrient-dense foods, including protein sources, whole grains, vegetables and fruits.[49] Moreover, pregnant and breastfeeding women have increased requirements for several essential nutrients, including folic acid, vitamin D, iron, iodine, calcium and omega-3 fatty acids. On the contrary, they should avoid liver and supplements with preformed vitamin A, as overconsumption can harm the baby. If your company offers food to employees, this can be accounted for in your menu planning.

To help pregnant and lactating women meet these nutrient requirements, the table below (as well as the previous sections of this annex) makes some recommendations and suggests some nutrient-dense food options:

Table 13

Nutrient	Recommendations and nutrient-dense sources
Energy	Eat a variety of nutrient-dense foods, including plant-based and animal-based protein sources, whole grains, vegetables and fruits.
Folic acid	Whole grains, pulses, dark green leafy vegetables, fortified foods. Supplementation may be necessary.
Iron	Whole grains, pulses, dark green leafy vegetables, nuts and seeds, red meat, eggs, small dried fish, fortified foods. Supplementation may be necessary.
Vitamin D, Iodine	Fish and seafood, dairy, fortified foods. Supplementation may be necessary. Be careful not to eat more than two servings of oily fish per week, and avoid shark, swordfish and marlin due to high levels of toxins.[58, 60]
Calcium	Dairy, dark green leafy vegetables, seeds, small dried fish, fortified foods. Supplementation may be necessary.
Vitamin A	Avoid liver, don't consume oily fish more than twice a week and avoid supplements with preformed vitamin A.[58, 60]
Omega-3 fatty acids (EPA/DHA)	Eat two servings of oily fish per week (no more).[58, 60] Supplementation may be necessary.
Liquids	Drink plenty of water – have a drink during breaks, with meals and have a drink beside you when you settle down to breastfeed[59]
Coffee or tea	Maximum one cup of coffee or 2-4 mugs of tea a day[60]
Alcoholic drinks	Abstain from alcohol as even small amounts may harm the baby.[60]

Make your message

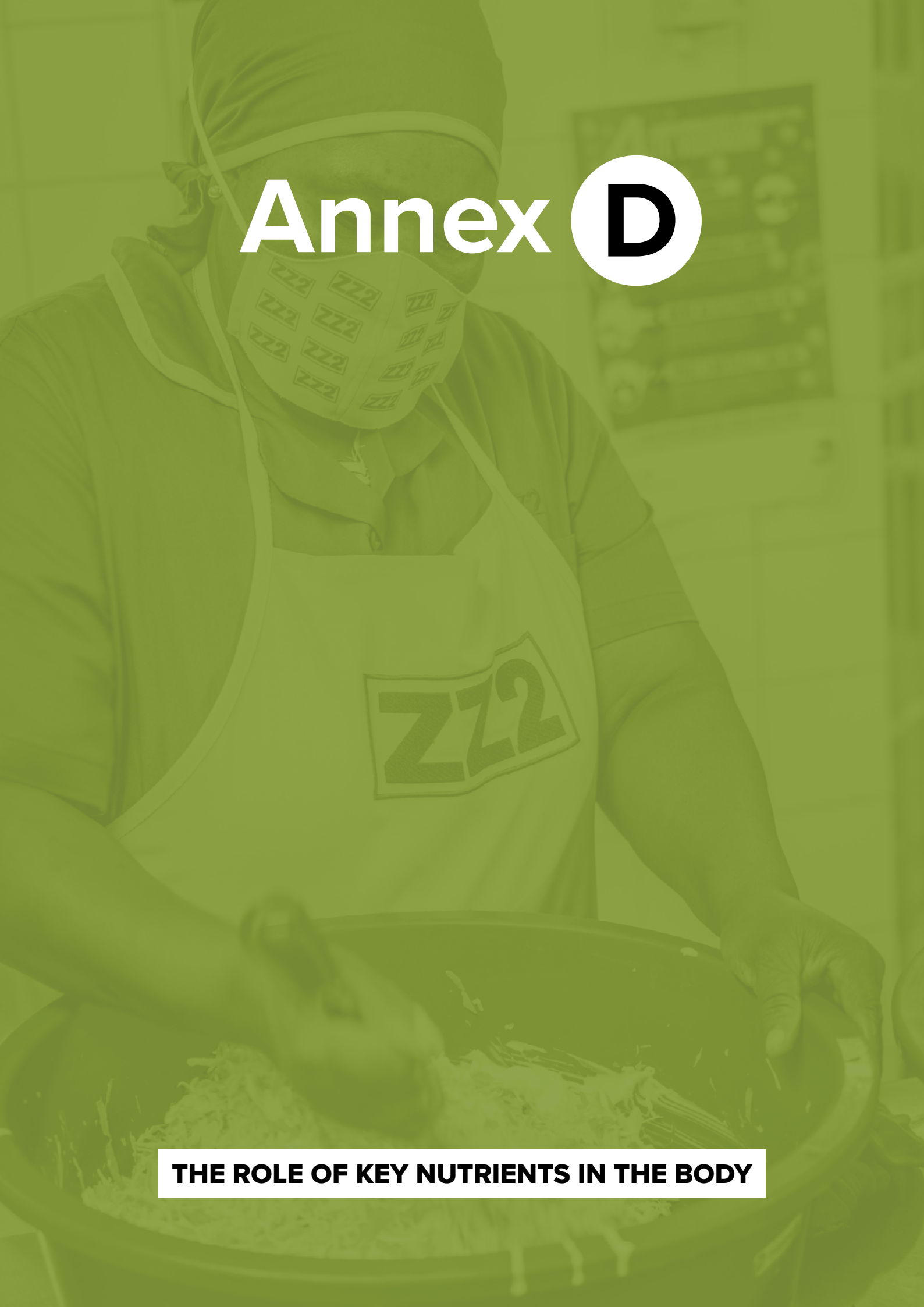
Breastfeeding is very important for maternal health and child health and development. The WHO highly recommends exclusive breastfeeding for the first six months after birth and continue breastfeeding practices up to two years of age in combination with adequate complementary feeding. Breastfeeding is not always easy, and it may take some time and practice to get comfortable with it. Therefore, it is essential that women are surrounded by a culture that actively supports breastfeeding at home and at the workplace. Breastfeeding should start directly after birth, within the first hour. For an optimal milk supply, it is recommended to frequently pump breastmilk or breastfeed the child. Consult a midwife, nurse or breastfeeding specialist for help to get started with breastfeeding or if you experience problems with breastfeeding.[27, 39, 50] The following materials could help your workforce get started with and ensure continuation of breastfeeding.

Alive & Thrive: *Let your baby exclusively breastfeed for the first six months*
Alive & Thrive: *Breastfeeding and complementary feeding for infant and young child: Key points to remember*
Alive & Thrive: *Infant and young child health and nutrition*

Did you know?

Every US dollar invested in a mother to breastfeed generates 35 US dollars in economic returns. In addition, healthcare expenditures of employers could reduce when breastfeeding rates increase. Therefore, it is important that your business has a good breastfeeding support system in place for the female workforce. Have a loot at the Breastfeeding Support guidebook for practical guidance on how your business could provide breastfeeding support to working mothers.[51]

Annex D



THE ROLE OF KEY NUTRIENTS IN THE BODY

ANNEX D

The role of key nutrients in the body

D1. Nutrients

Carbohydrates
The main function of carbohydrates is to provide energy to the body that we need to live, think, work and be active.

Fibre
Dietary fibres are important for digestive health, heart health and to maintain a normal weight.

Protein
Protein is needed for growth and repair of the body. Protein is made up of amino acids. Essential amino acids cannot be produced by the body and need to be obtained via the diet. Other non-essential amino acids can be produced by the body.

Sodium
Sodium is a mineral that is important for blood pressure regulation, and in combination with potassium, sodium is responsible for normal functioning of muscles and nerves.

Water
Water has many functions in the body:
- *Transporting oxygen to body cells*
- *Transporting nutrients to body cells*
- *Removing waste products from the body*
- *Regulating body temperature*
- *Supporting digestion*
- *Stabilizing blood pressure*
- *Maintaining sodium balance*
- *Protecting organs and tissues*

D2. Micronutrients [1, 52, 53, 54, 55, 56]

Vitamin A
Vitamin A is needed for proper vision and growth.

Folate
Folate is essential during pregnancy.

Vitamin B12
Vitamin B12 is need for healthy functioning of the brain and nervous system.

Vitamin C
Vitamin C helps the body produce energy, keeps the brain and nervous system working efficiently, and plays an important role in the absorption of iron.

Vitamin D
Vitamin D works with calcium and phosphorus for healthy bones, muscles and teeth.

Vitamin E
Vitamin E for immune and antioxidant function.

Calcium
Calcium is needed to maintain strong bones and teeth and for muscle contraction.

Choline
Choline is needed for brain health.

Iron
Iron is needed for energy and for normal growth and development. It is also needed to produce red blood cells to transport oxygen in the body.

Iodine
Iodine is needed for many body processes including growth, metabolism and for the development of a baby's brain during pregnancy and early life.

Omega-3 fats
Omega-3 fats are good for heart and brain health.

Potassium
Potassium is essential for maintaining a fluid balance and a normal blood pressure. The mineral helps with the uptake of other nutrients and the digestion of food in the body, and supports nerve and muscle functioning.

Zinc
Zinc is needed for cellular development.


Golden Delicious
Small / Med
9 Kg
Golden Delicious
Small
9 Kg
Golden Delicious
Medium
9 Kg
R120
PEARS

REFERENCES

LEARN MORE

References

1. GAIN, Eat Well Global, & SUN Business Network. (2020a) *Nutrition at work: Providing healthy meals and snacks for a thriving workforce.*

2. HSPH. (2012a, September 18) *Healthy Eating Plate. The Nutrition Source.*

3. The Workforce Nutrition Alliance *Driving multi-level impact through workforce nutrition—Introduction deck by The Workforce Nutrition Alliance.*

4. Grigg, D. (1996) *The Starchy Staples in World Food Consumption. Annals of the Association of American Geographers, 86(3), 412–431.*

5. GAIN, Eat Well Global, & SUN Business Network *Healthy Meal and Snack Recommendations. Global Alliance for Improved Nutrition.*

6. MedlinePlus. (2021) *Amino Acids.*

7. EUFIC. (2019, December 16) *What are Proteins and What is Their Function in the Body?*

8. Khan, A., Khan, S., Jan, A. A., & Khan, M. (2017) *Health complication caused by protein deficiency. Journal of Food Sciences & Nutrition, 1(1), 1–2.*

9. The Netherlands Nutrition Centre. (n.d.-a) *Eiwitten | Voedingscentrum. Retrieved 23 April 2021*

10. EUFIC. (2020b, August 5) *What is dietary fibre and is it beneficial?*

11. EUFIC. (2021a, January 11) *Dive into the world of vitamins and minerals.*

12. HSPH. (2012b, September 18). *Vegetables and Fruits. The Nutrition Source.*

13. USDA. (n.d.) *Why is it important to eat vegetables? ChooseMyPlate.gov.*

14. EUFIC. (2021, January 11) *Calcium: Foods, functions, how much do you need & more.*

15. FAO, & FHI 360. (2016) *Minimum Dietary Diversity for Women: A Guide to Measurement. Food and Agriculture Organization of the United Nations.*

16. WHO. (2019a, February 11). *Increasing fruit and vegetable consumption to reduce the risk of noncommunicable diseases. WHO; World Health Organization.*

17. WHO. (2020b, April 30). *Food safety.*

18. WHO. (2020a, April 1). *Obesity and overweight*

19. Goettler, A., Grosse, A., & Sonntag, D. (2017). *Productivity loss due to overweight and obesity: A systematic review of indirect costs. BMJ Open, 7(10), 9.*

20. Monteiro, Carlos Augusto, Cannon, G., Lawrence, M., da Costa Louzada, M. L., & Pereira Machado, P. (2019). *Ultra-processed foods, diet quality, and health using the NOVA classification system. Food and Agriculture Organization of the United Nations.*

21. Monteiro, Carlos A., Cannon, G., Levy, R. B., Moubarac, J.-C., Louzada, M. L., Rauber, F., Khandpur, N., Cediel, G., Neri, D., Martinez-Steele, E., Baraldi, L. G., & Jaime, P. C. (2019). *Ultra-processed foods: What they are and how to identify them. Public Health Nutrition, 22(5), 936–941.*

22. McManus, K. D. (2020, January 9). *What are ultra-processed foods and are they bad for our health? Harvard Health.*

23. WHO. (2018, May 3). *Nutrition: Trans fat.*

24. WHO. (2018). *WHO plan to eliminate industrially-produced trans-fatty acids from global food supply.*

25. NHS. (2020, April 14). *Facts about fat—NHS. Nhs.Uk.*

26. Ophardt, C., & Rodriguez, A. (2013, October 2). *Hydrogenation of Unsaturated Fats and Trans Fat. Chemistry LibreTexts.*

27. Ministry of Health Kenya. (2017). *National Guidelines for Healthy Diets and Physical Activity 2017 (p. 100). Government of Kenya.*

28. EUFIC. (2013, April 30). *Glucose and The Brain: Improving Mental Performance.*

29. EUFIC. (n.d.). *Sugars. Retrieved 23 April 2021*

30. WHO. (2019c, February 11). *Reducing free sugars intake in adults to reduce the risk of noncommunicable diseases. WHO; World Health Organization.*

31. EUFIC. (2020a, January 14). *Sugars: Addressing Common Questions and Debunking Myths.*

32. NHS. (2021, March 15). *Salt: The facts. Nhs.Uk.*

33. NHS. (2018a, June 8). *Tips for a lower salt diet. Nhs.Uk.*

34. University of Massachusetts Amherst. (2016, March 21). *Buying canned fruits and vegetables. Center for Agriculture, Food and the Environment.*

35. HSPH. (2013, September 4). *Sugary Drinks. The Nutrition Source.*

36. John Hopkins University. (2020, January 15). *Yes, drinking more water may help you lose weight. The Hub.*

37. WHO. (2019b, February 11). *Reducing consumption of sugar-sweetened beverages to reduce the risk of unhealthy weight gain in adults. WHO; World Health Organization.*

38. Harvard Health. (2020, March 25). *How much water should you drink? Harvard Health.*

39. National Institute for Nutrition India. (2011). *Dietary Guidelines for Indians—A Manual (p. 139). National Institute for Nutrition India.*

40. CDC. (2021a, February 23). *Making Water Safe in an Emergency. Centers for Disease Control and Prevention.*

41. BNF. (2016, February). *British Nutrition Foundation—British Nutrition Foundation.*

42. The Netherlands Nutrition Centre. (n.d.-c). *Koffie | Voedingscentrum. Retrieved 23 April 2021*

43. The Netherlands Nutrition Centre. (n.d.-d). *Thee | Voedingscentrum. Retrieved 23 April 2021*

44. WHO. (n.d.). *Micronutrients. Retrieved 23 April 2021*

45. WHO, & FAO. (2004). *Vitamin and mineral requirements in human nutrition. World Health Organization, Food and Agriculture Organization of the United Nations.*

46. CDC. (2021b, March 11). *Sugar Sweetened Beverage Intake. Centers for Disease Control and Prevention.*

47. The Netherlands Nutrition Centre. (n.d.-b). *IJzer | Voedingscentrum. Retrieved 23 April 2021*

48. Food and Nutrition Technical Assistance III Project (FANTA). (2016). *Nutrition Assessment, Counseling, and Support (NACS): A User's Guide—Module 3: Nutrition Education and Counseling, Version 2 (No. 3). FHI 360/FANTA.*

49. Ellis, E. (2020, August). *Healthy Weight during Pregnancy.*

50. NHS. (2019, July 17). *Breastfeeding problems. Nhs.Uk.*

51. UNICEF, WHO, 1000 Days, & Alive & Thrive. (2017). *Nurturing the Health and Wealth of Nations: The Investment Case for Breastfeeding (p. 7).*

52. EUFIC. (2021b, January 11). *Iron: Foods, functions, how much do you need & more.*

53. EUFIC. (2021c, January 11). *Potassium: Foods, functions, how much do you need & more.*

54. EUFIC. (2021d, January 11). *Vitamin A: Foods, functions, how much do you need & more.*

55. EUFIC. (2021e, January 11). *Vitamin B12: Foods, functions, how much do you need & more.*

56. EUFIC. (2021f, January 11). *Vitamin C: Foods, functions, how much do you need & more.*

57. WHO. (2021). *Infant and young child feeding.*

58. The Association of UK Dieticians. *Omega-3: Food Fact Sheet.*

59. NHS. (2018). *Breastfeeding and diet.*

60. The Association of UK Dieticians. *Healthy eating during pregnancy.*

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