

# RESEARCH SUMMARY

Understanding the effects of sugar overconsumption and possible interventions

Jun-Dec 2021

*Let's get together...*



# LET'S BE HONEST..

## WE'RE NOT THE EXPERTS HERE, BUT WE DID DO OUR HOMEWORK

We're an impact company that makes chocolate, not the other way around. And while we're crazy about chocolate, we're serious about people. In that spirit, we've decided to confront the big chocolate-covered elephant in the room: Our inconvenient truth? We're part of the sugar problem.

That's why we've spent serious time understanding the problem of sugar overconsumption. And what possible solutions are out there to prevent overconsumption. This process helped us define what we believe the right solutions could be and establish our role in these.

**In this document, you'll find a selection of insights from the research we conducted to shape that opinion.**

But we want to be completely honest: we are by no means experts in this field. This document merely summarizes what we learned from the real experts out there.

Plus, while the health effects of sugar are widely known, the effectiveness of the many possible interventions out there is often more difficult to prove. Therefore, our opinion is also shaped by what we believe is the right thing to do.

Choco cheers,  
Team Tony's

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How much sugar is in our chocolate? And what about the health discussion around dark versus milk?

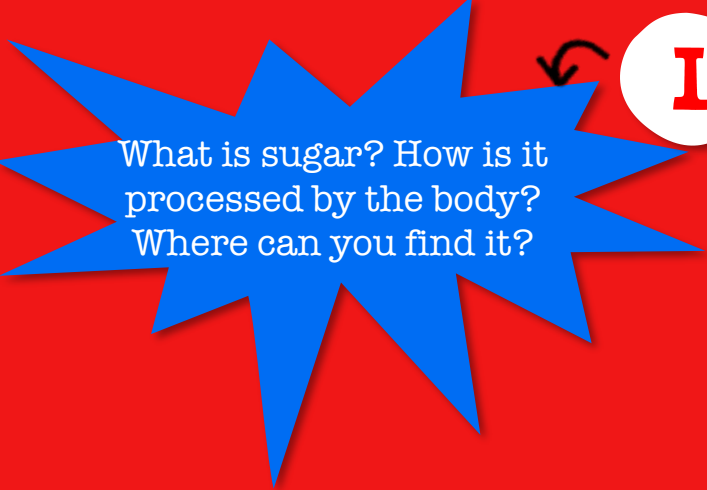
**V**

What types of solutions are possible? What trends do we see in our golden markets?

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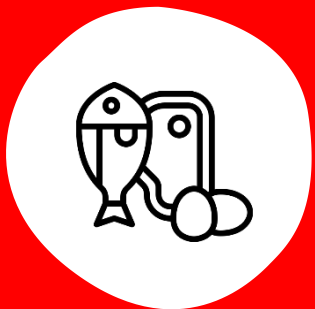


**1**



What is sugar? How is it  
processed by the body?  
Where can you find it?

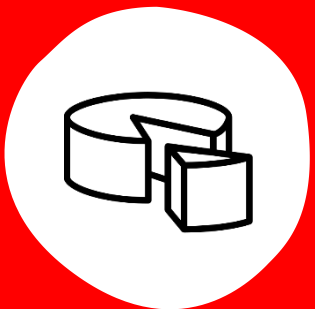
# Our body requires nutrients from 5 nutrient groups for all life processes



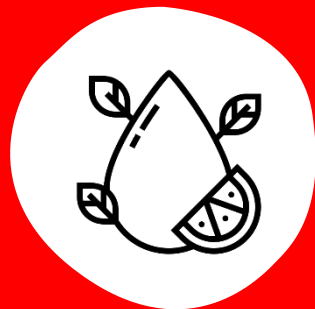
Proteins



Carbo-  
hydrates



Fats



Vitamins



Minerals

**Macronutrients:** needed in great amounts and measured in grams

**Micronutrients:** needed in smaller amounts and measured in milli- or micrograms

Note: Other necessary elements are water and fibers. Bioactive elements are not yet included into nutrients  
Source: <https://www.voedingcentrum.nl/encyclopedie/voedingstoffen.aspx>

# Carbohydrates function as the primary source of energy for the body



**Proteins:** build and repair tissue; extra protein can be used for energy  
*Found in: Lean meat, fish, poultry, low-fat dairy products, nuts, dried beans, peas, lentils*



**Carbohydrates:** provide energy (primary source)  
*Found in: Fruit, vegetables, bread, pasta, grains, cereals, crackers, dried beans, peas, lentils, added sugars*



**Fats:** provide energy, help absorb vitamins, deliver fatty requirements for tissue built and repair  
*Found in: Meat, whole-milk products, plant-based oils, vegetables, nuts, grains*

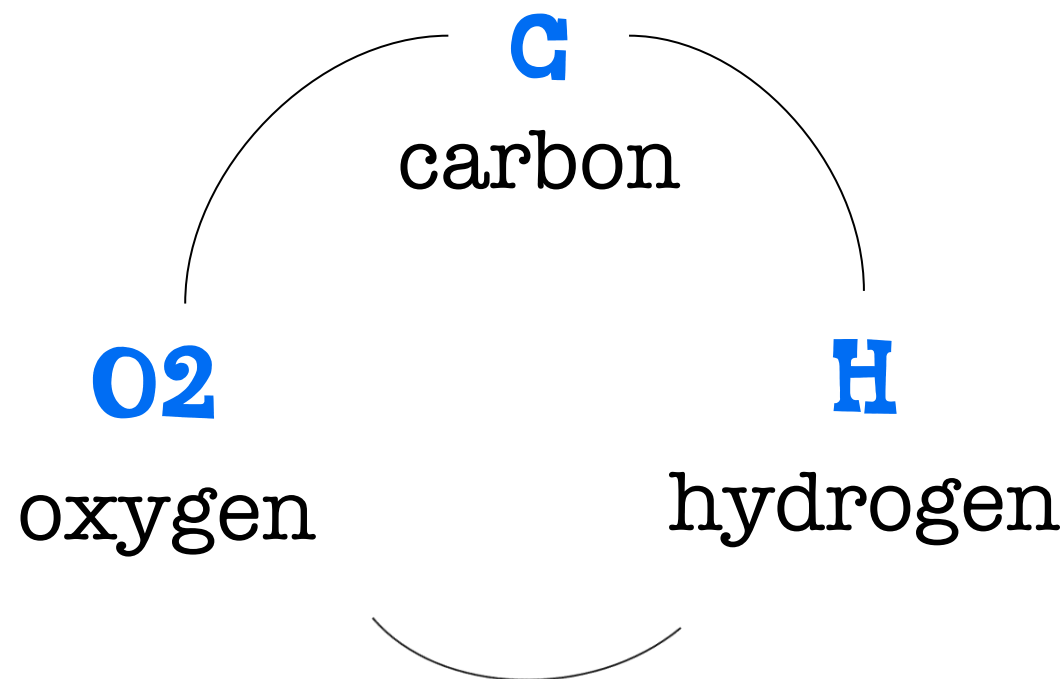


**Vitamins:** enable release of energy of the above nutrients  
*Found in: Fruits, vegetables, milk, eggs, cheese, meat, fish, oils, nuts, seeds, grains, vitamins supplements*



**Minerals:** help regulation of body processes  
*Found in: Vegetables, nuts, meat, fish, grains, milk, egg, mineral supplements*

# All carbohydrates are built up by the same building blocks



It's all in  
the name



# Carbohydrates consist of two main groups: 'simple' sugars and complex carbohydrates

(simple) Sugars

Complex carbohydrates



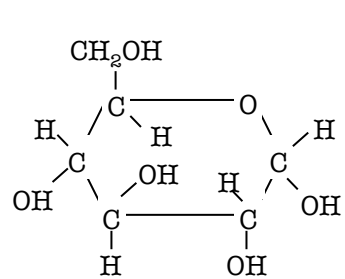
This is what people mean if they talk about 'sugars' and what you will find on the nutrition labels



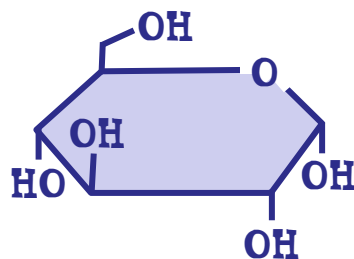
# All carbohydrates are build up by the same little ring-shaped molecules

## (simple) Sugars

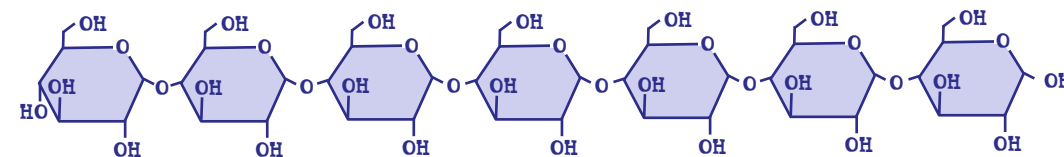
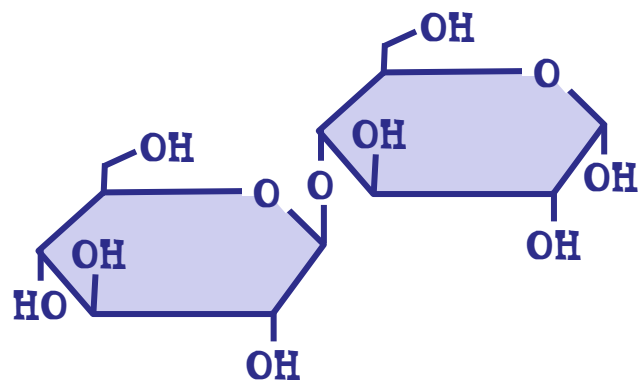
## Complex carbohydrates



simplicity 



long chains 



# Sugar actually refers to a family of molecules called saccharides

(simple) Sugars

Complex carbohydrates

Monosaccharides

Disaccharides

Oligosaccharides

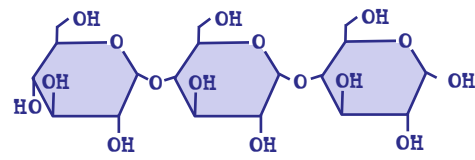
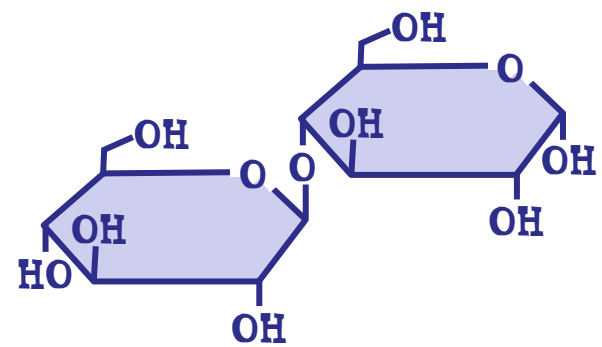
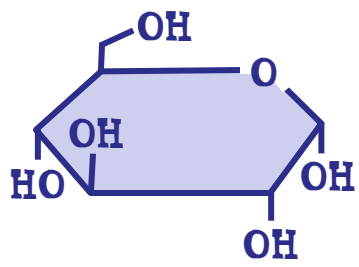
Polysaccharides

one

two

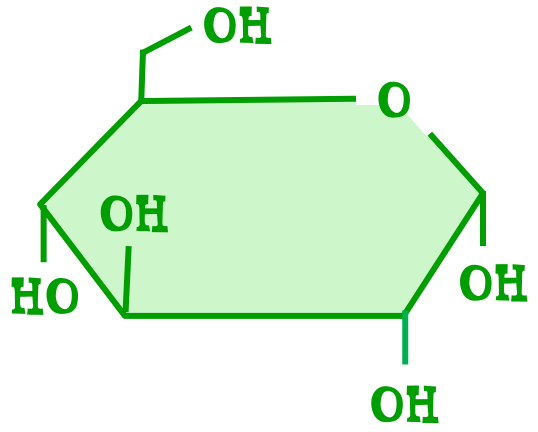
a few (3-9)

many (>10)



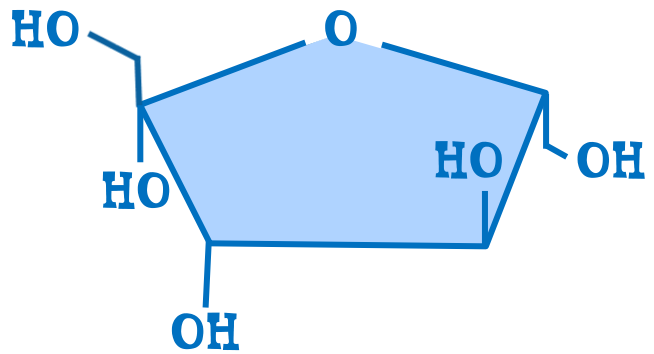
# There are three types of monosaccharides..

## Glucose



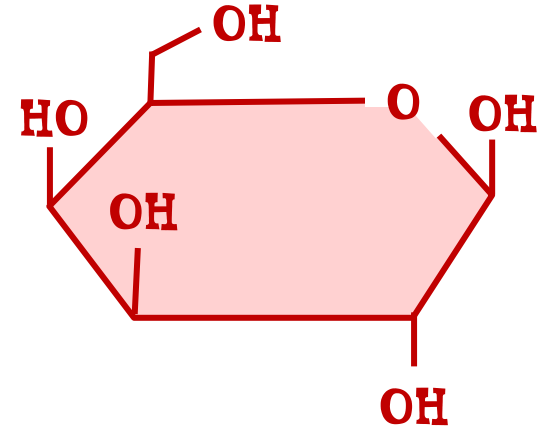
= blood sugar  
The main molecule that is used by your cells for energy; it gets transferred via the blood

## Fructose



= fruit sugar  
Commonly found in fruits (and honey, root vegetables)

## Galactose



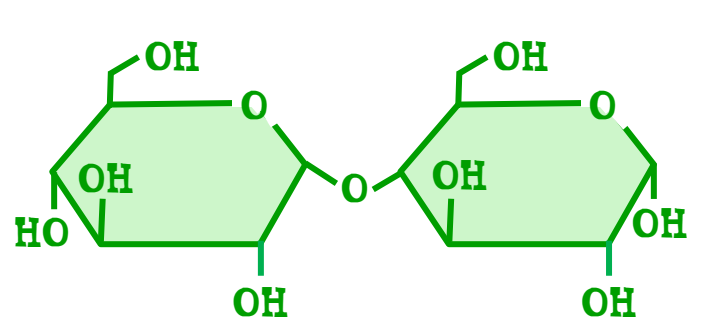
= milk sugar  
It can only be found in nature when it links with glucose to form 'lactose', a disaccharide found in milk

# ..and again three types of disaccharides

This is what people mean if they talk about: sugar (without an 's')

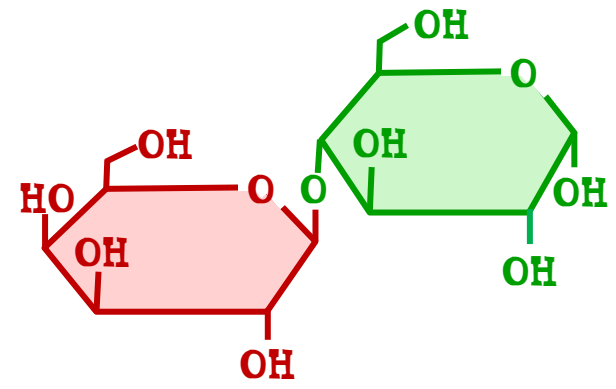


**Maltose**



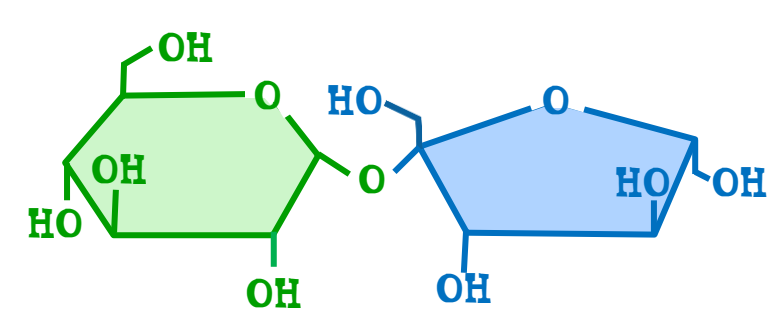
= malt sugar  
A typical reaction for chains of maltose was first found in malt

**Lactose**



= milk sugar  
Occurs naturally in milk from mammals (e.g. cows, humans)

**Sucrose**

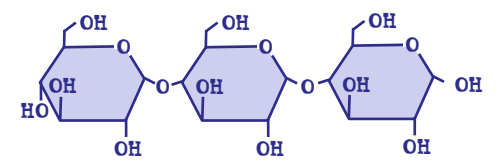


= (common) table sugar  
Mostly used by manufactures, cooks and customers to add to the food & beverages

# Most carbohydrates in food are complex carbohydrates and aren't sweet

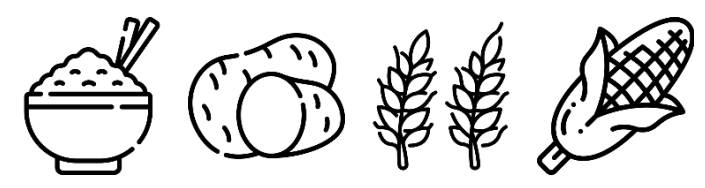
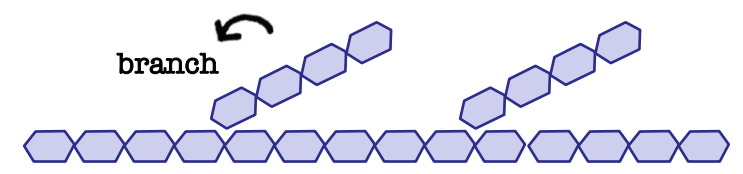
## Complex carbohydrates

### Oligosaccharides

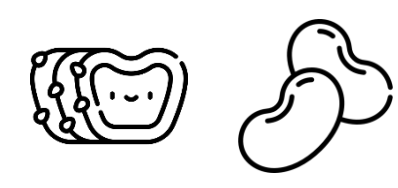
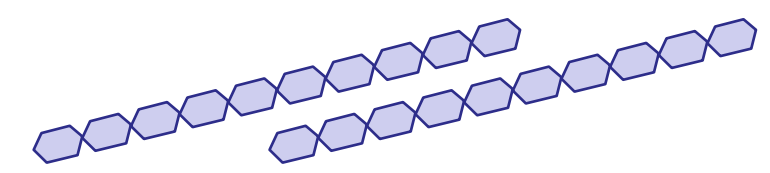


### Polysaccharides

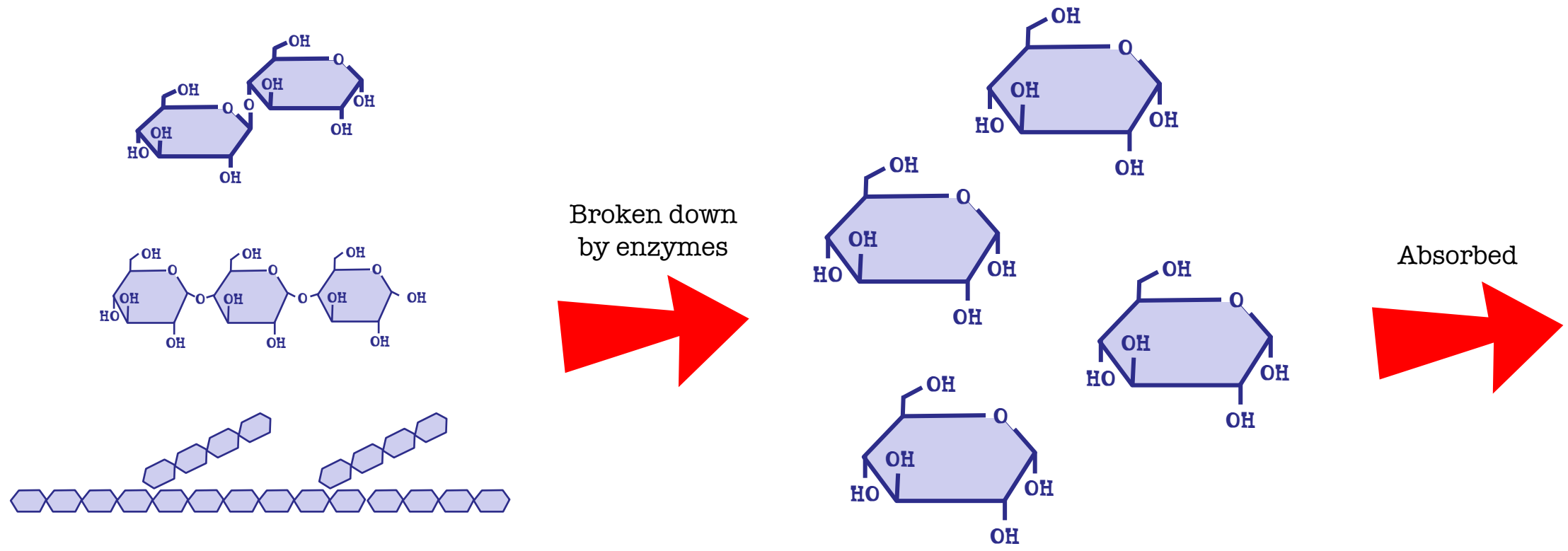
#### Starches



#### Fibers

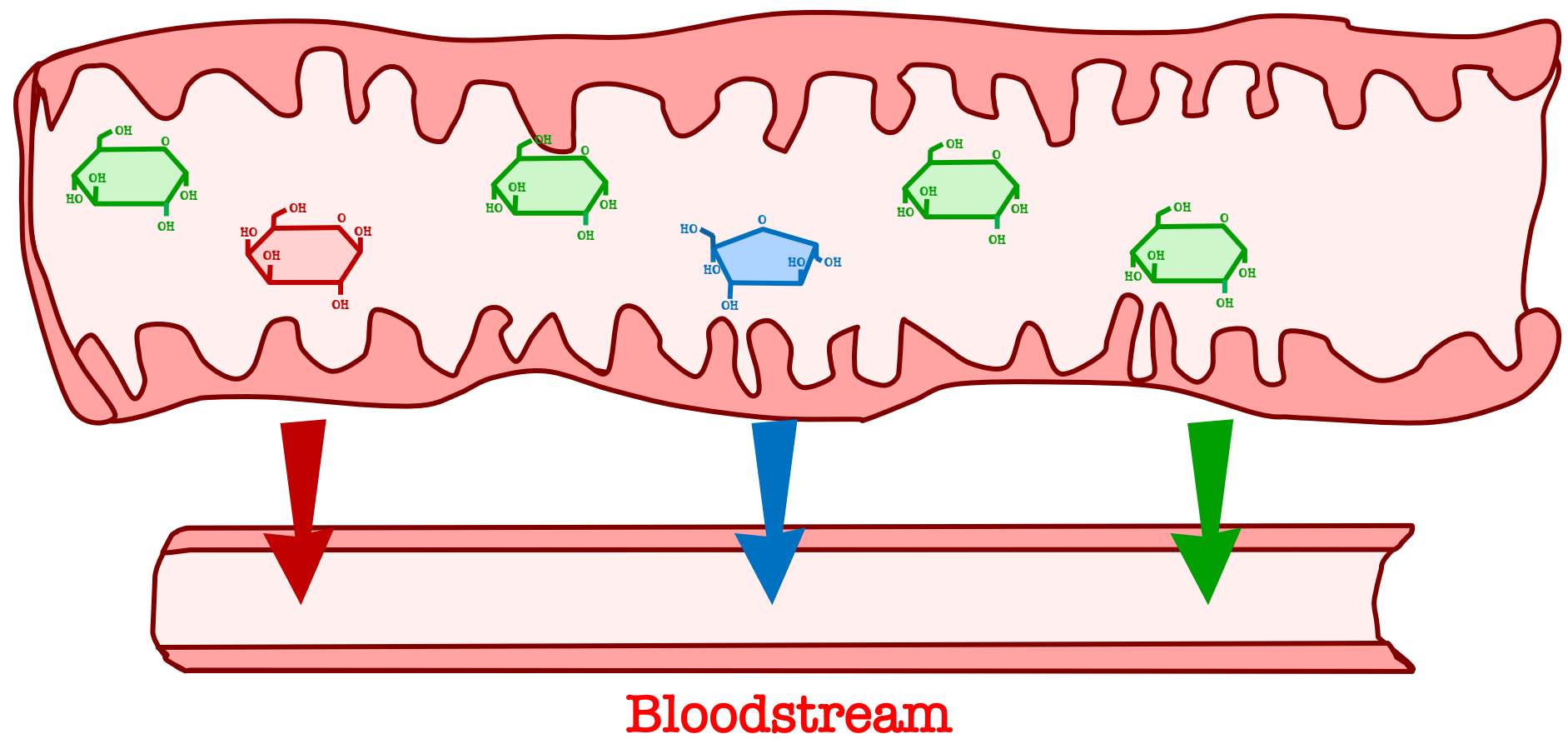


# If you eat something, enzymes will break down carbohydrates in monosaccharides



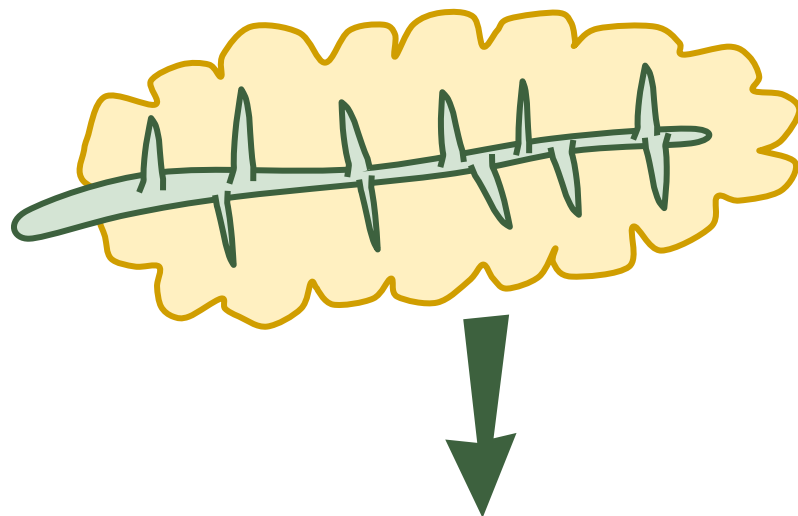
Source: <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx>; <https://www.sugar.org/sugar/what-is-sugar/>; <https://sugar.ca/sugar-basics/carbohydrate-and-sugars-terminology>

# The individual molecules cross the gut lining and get into the bloodstream

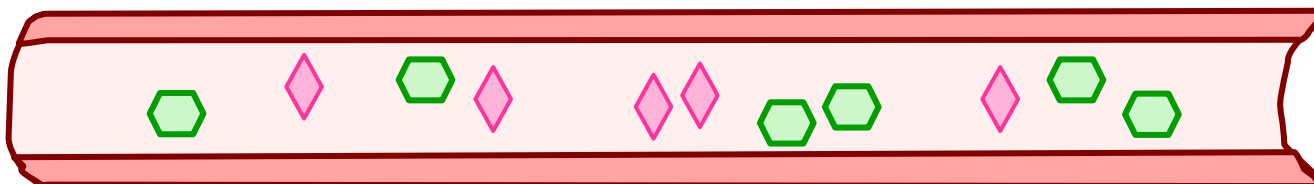


# Insulin gets released if glucose increases to help move it into the cells and liver

Pancreas



Insulin



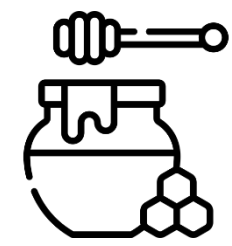
The insulin triggers your body to process the sugar molecules in the blood – mainly glucose – in the following order:

- 1) Transferred to the tissue where it will be processed by the cells and used for energy
- 2) (In case of excess) Temporarily stored in your liver
- 3) (In case of excess) Transferred into fat and stored in your fat cells



# So digestible carbohydrates will be used for immediate energy or storage

**HONEY**



**POTATOES**



**SIMPLE SUGARS**

**STARCHES**

4 kJ per gram of carbohydrate



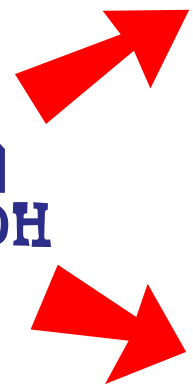
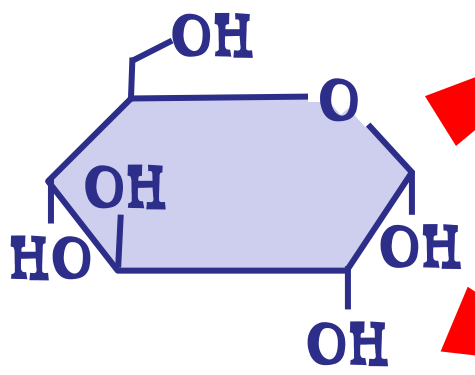
**IMMEDIATE ENERGY**

**STORAGE**

# Not all carbohydrates can be digested, thus they have other effects on the body

Carbohydrate types	Mono- and disaccharides	Starches	Fibers
Example products	<i>Fruits, candy or soda</i>	<i>Potatoes, grains, beans</i>	<i>Vegetables, fruit, whole grains</i>
Digestion process	Monosaccharides and disaccharides (simple carbohydrates) enter the body in an (almost) already broken down form	The monosaccharide molecules are linked by alpha linkages which are easily cleaved by enzymes in the digestive system	The monosaccharide molecules are linked by beta bonds which can't be broken down by the body + fibers can also trap starches preventing from being cleaved
Digestible?	Yes, quickly	Yes, a bit slower	No/partially
Result	Provide energy for the body, however in case of excess it could be converted into fat		Contribute to your digestion function

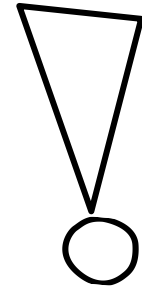
# Sugars can be found naturally or added..



**FOUND NATURALLY**

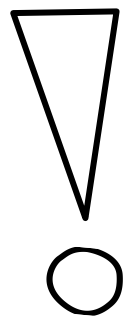
Unlike what a lot of people think

Even added sugars mostly come from natural sources like sugar cane



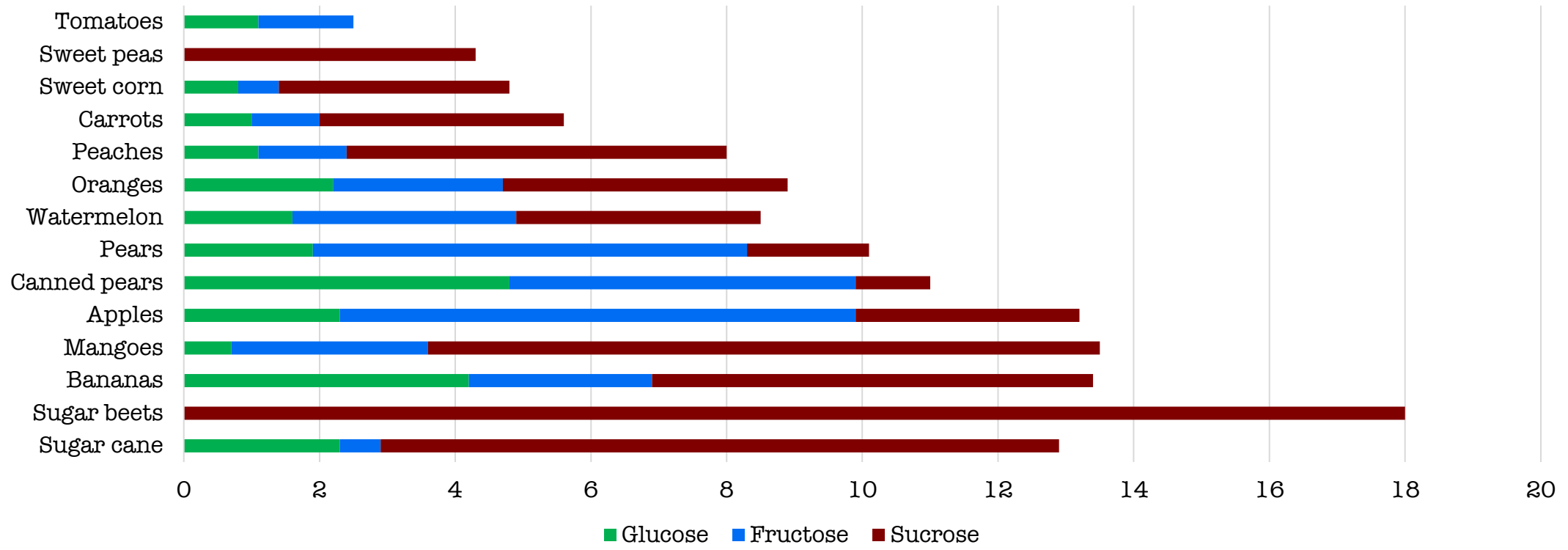
**ADDED**

Added and naturally occurring sugar is recognized in the same way by the body – as a source of energy



# Naturally | Glucose, fructose and sucrose exist almost in all fruits and vegetables

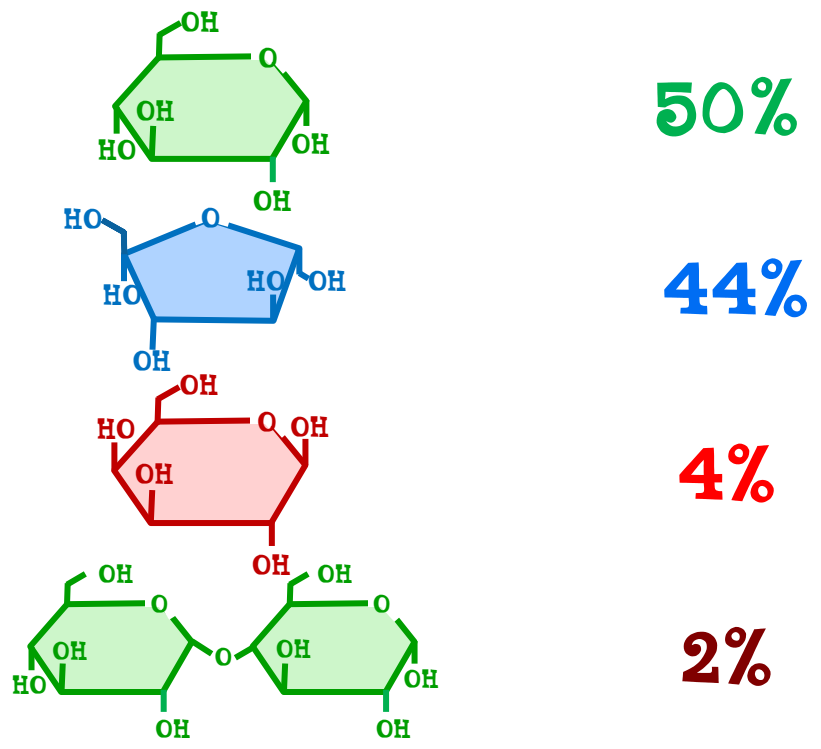
Sugar content of fruits and vegetables: 100 grams



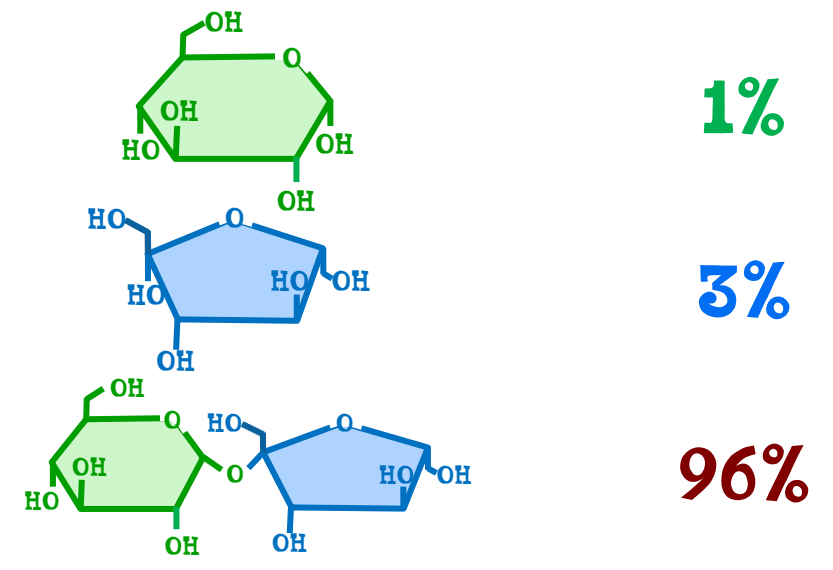
Source: <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx>; <https://www.sugar.org/sugar/what-is-sugar/>; <https://sugar.ca/sugar-basics/carbohydrate-and-sugars-terminology>

# Naturally | As you can see, glucose, fructose and sucrose are present in varying amounts

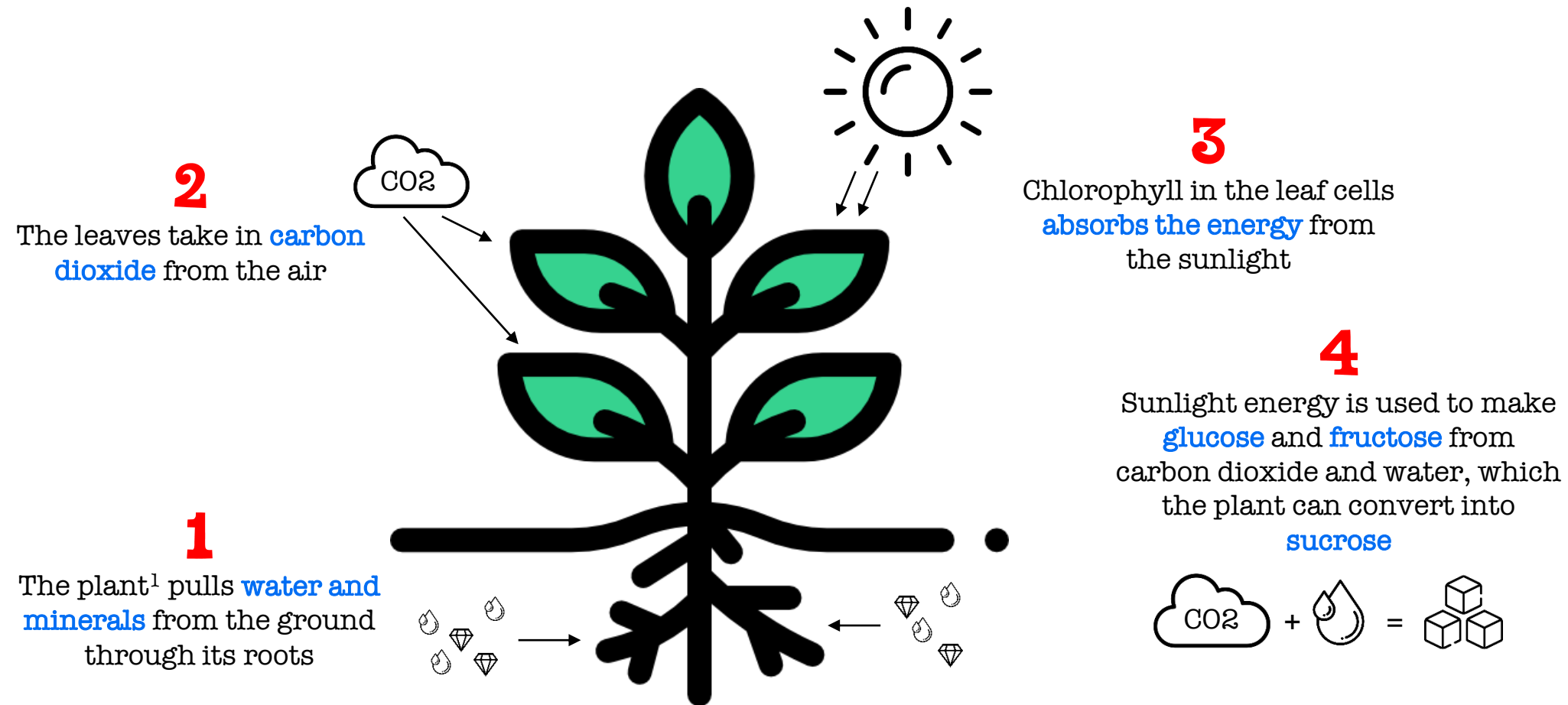
## HONEY



## MAPLE SYRUP

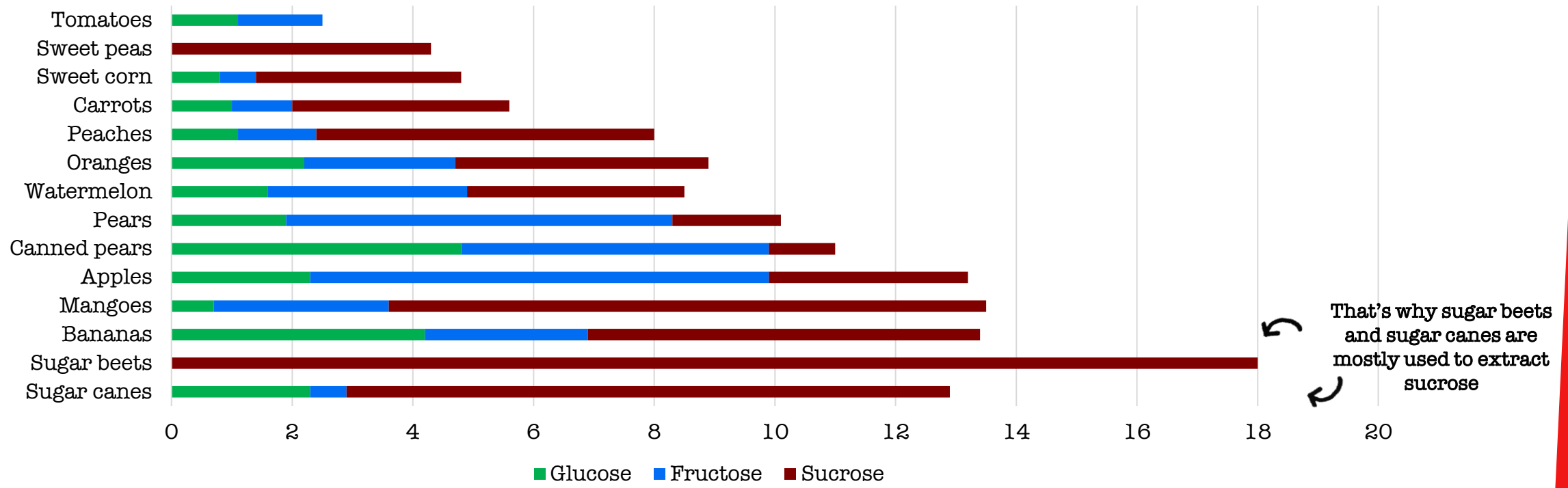


# Naturally | Glucose, fructose and sucrose are made via photosynthesis



# As sucrose is very sweet, sugar beets and canes are used mostly for extraction







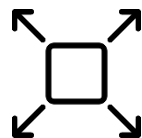

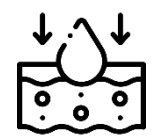
Sugar content of fruits and vegetables:  
per 100 grams, edible portion-raw



That's why sugar beets and sugar canes are mostly used to extract sucrose

Source: <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx>; <https://www.sugar.org/sugar/what-is-sugar/>; <https://sugar.ca/sugar-basics/carbohydrate-and-sugars-terminology>

# Added | Sugars are added to our products for many reasons beyond sweetness

 Sweetness	 Texture/ mouthfeel	 Freezing point depression
 Flavour enhancer/ balancer/ aroma	 Shelf-life	 Color
 Bulk <sup>1</sup>	 Fermentation	 Moisture retention

1. Sugars affect the physical characteristics of food, e.g. in baked foods baked goods it creates small air cells  
Source: <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx>; <https://www.sugar.org/sugar/what-is-sugar/>; <https://sugar.ca/sugar-basics/carbohydrate-and-sugars-terminology>



# Added | The majority of packaged products bought in US supermarkets contain added sugars

The New York Times

## *You'd Be Surprised at How Many Foods Contain Added Sugar*



Some pasta sauces have high amounts of added sugar. Todd Heisler/The New York Times

“A team of researchers at the University of North Carolina conducted a detailed survey of the packaged foods and drinks that are purchased in American grocery stores and found that **60 percent** of them **include some form of added sugar**. When they looked at every individual processed food in the store, 68 percent had added sugar. Some of those products are more obvious sugary foods, but not all. The list includes many sauces, soups, fruit juices and even meat products.”

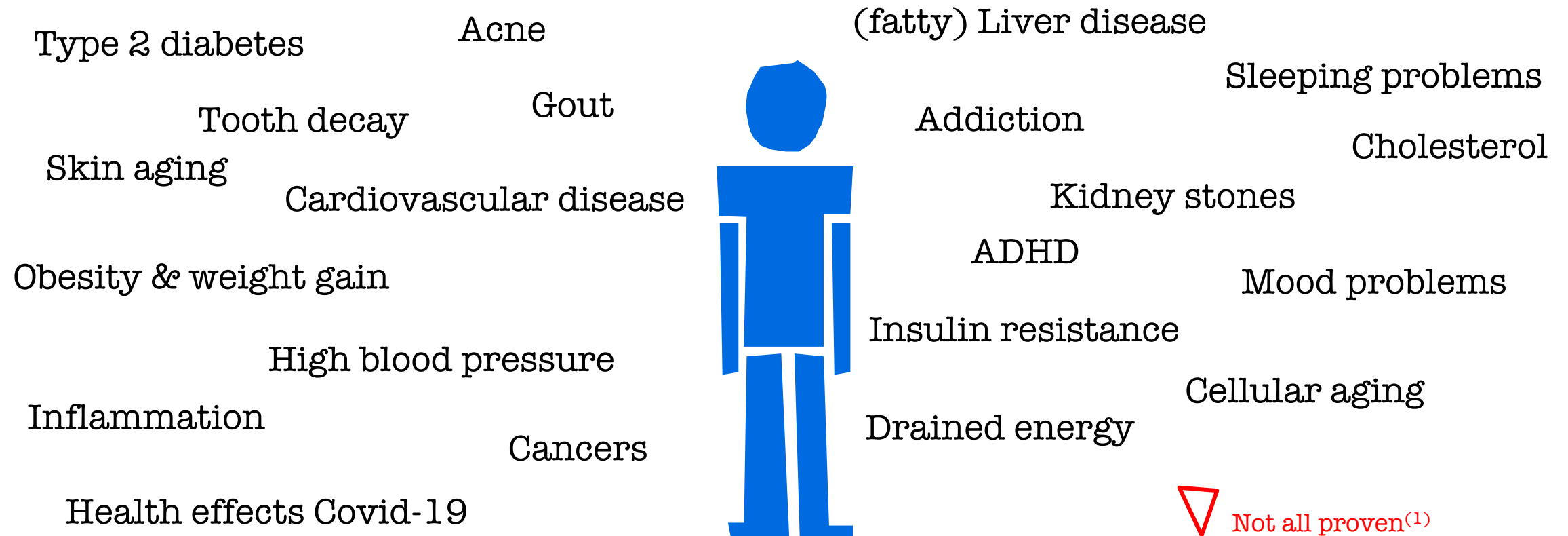
# CONTENTS

What are the effects of  
sugar overconsumption on  
individual people's health?  
What are the trends and  
societal costs?

**II**



# Many direct and indirect health risks are attributed to overconsumption of sugar



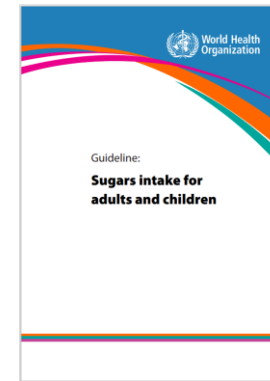
⚠ Not all proven<sup>(1)</sup>

(1) 1-on-1 relations between overconsumption of sugar and these diseases have not been found for all diseases; however there's clear agreement between experts that overconsumption of sugar could lead indirectly to these diseases. Sources: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>; <https://www.health.harvard.edu/heart-health/the-sweet-danger-of-sugar>; <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx#blokwat-doet-suiker-met-je-lichaam>; <https://www.cdc.gov/obesity/adult/causes.html>

# We follow the WHO in their reasoning



Specialized organisation of the United Nations that directs international health and leads partners in global health responses



Guidelines from 2015 to provide updated global, evidence-informed recommendations on the intake of free sugars



As always, some new researches both prove and contradict this report but the general reasoning is still correct

# Noncommunicable Diseases were responsible for 68% of the world's deaths in 2012

## 68% of deaths worldwide caused by NCDs

- NCDs are the leading causes of deaths
- 38 million out of the world's 56 million deaths
- More than 40% of those deaths were premature (<70 yrs)
- Almost three quarters of all NCD deaths (28 million) and the majority of premature deaths (82%), occurred in low- and middle-income countries

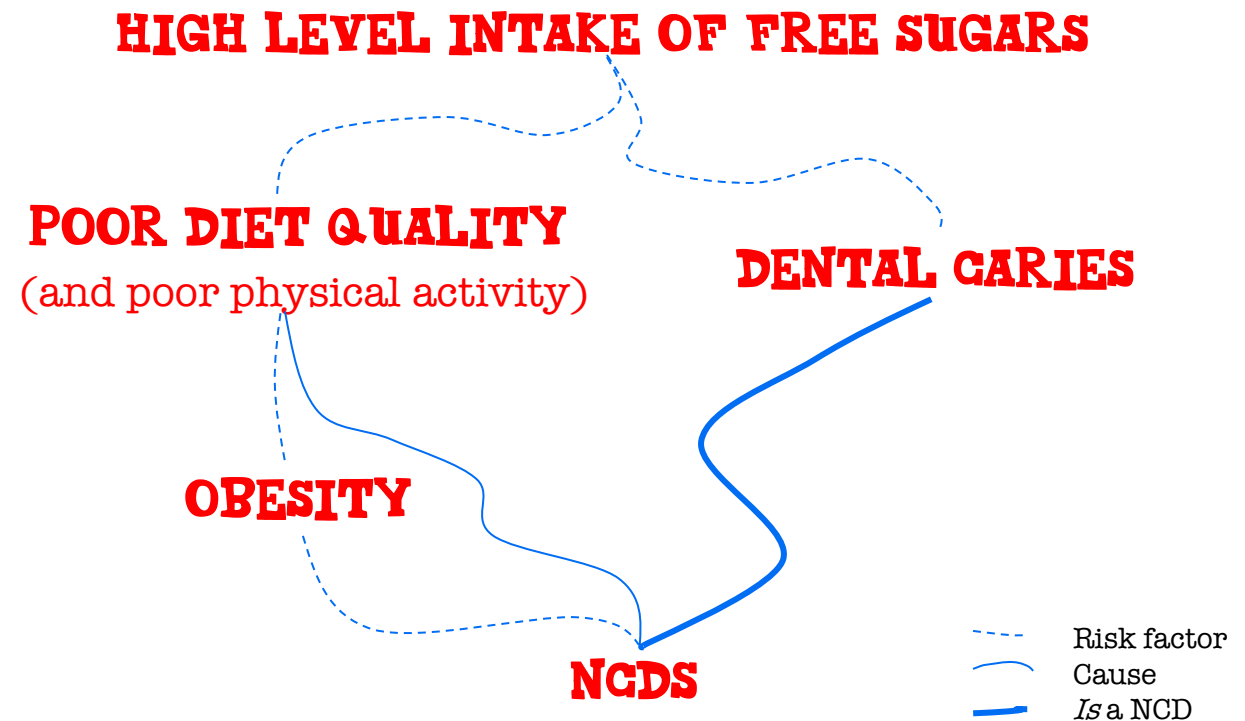


NCDs are **Non**communicable Diseases = non transferable diseases, such as cardiovascular disorders, cancers, diabetes, mental diseases

# Obesity is one of the big risk factors for non communicable diseases

68% of deaths worldwide caused by NCDs

- NCDs are the leading causes of deaths
- 38 million out of the world's 56 million deaths
- More than 40% of those deaths were premature (<70 yrs)
- Almost three quarters of all NCD deaths (28 million) and the majority of premature deaths (82%), occurred in low- and middle-income countries



# Obesity is mentioned separately because of its rapid growth and link with Covid-19



Rijksinstituut voor Volksgezondheid  
en Milieu  
Ministerie van Volksgezondheid,  
Welzijn en Sport

In 1990, one-third of Dutch adults was moderately or severely overweight. By 2019, this had increased to half. Projections show that this rate will increase and reach 62% by 2040.



Centraal Bureau  
voor de Statistiek

In 2017, 14% of Dutch people older than 20 had a form of obesity. This more than 2,5 times the number in the early '80s.



World Health  
Organization

In 2016, worldwide obesity had nearly tripled since 1975. 39% of adults were overweight and 13% were obese.



In 2017, more than one in two adults and nearly one in six children were overweight or obese in OECD countries. Projections show a steady increase in obesity rates until at least 2030.



World Health  
Organization

Obesity can significantly increase the chances of severe outcomes for patients with coronavirus disease.

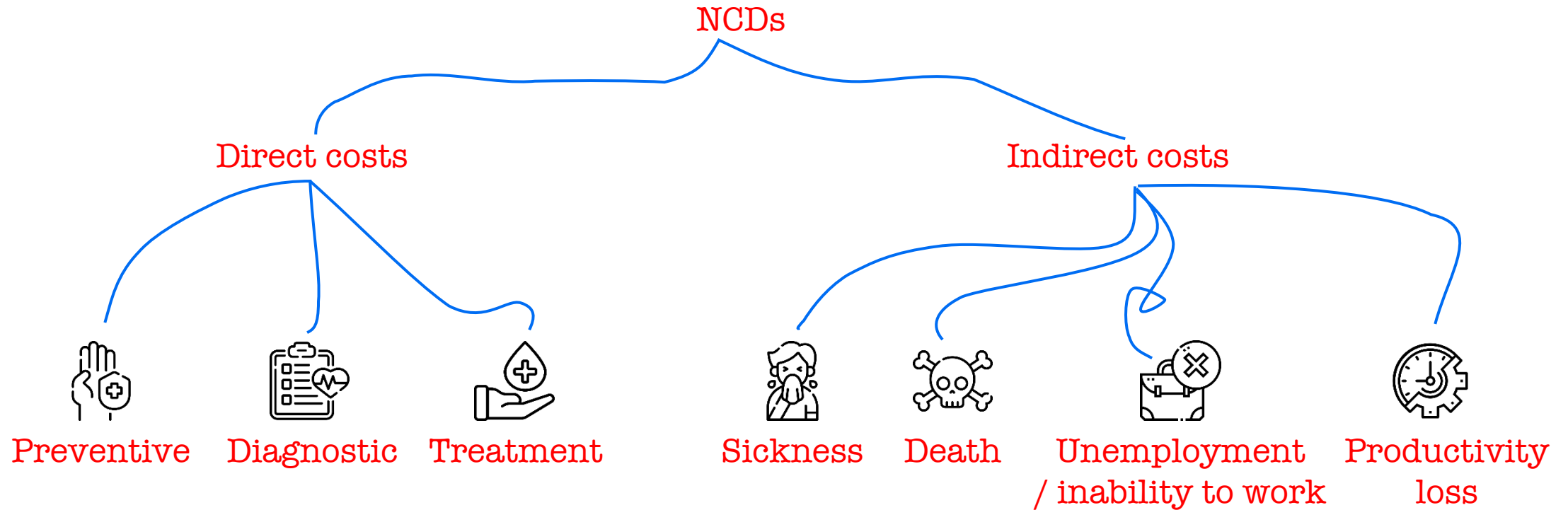


Centers for Disease  
Control and Prevention

Adults with obesity are an even greater risk during the COVID-19 pandemic. Obesity may triple the risk of hospitalization in the event of a COVID-19 infection.

# NCDs lead to many direct and indirect economic and social costs

Non-exhaustive





# Some examples of calculated costs



## Dutch research on obesity (2018):

- Being overweight alone costs the Dutch population €1.5 billion on a yearly basis
- This equals 3.7% of the total healthcare costs



## European research on NCDs (2013)

- Healthcare costs of €115 billion per year
- This comes down to 0.8% of all EU countries' GDPs combined



## Global research on dental caries (2015):

- Treatment of dental diseases is expensive, consuming 5–10% of health-care budgets in industrialized countries
- It would exceed the entire financial resources available for the children's healthcare in most lower income countries

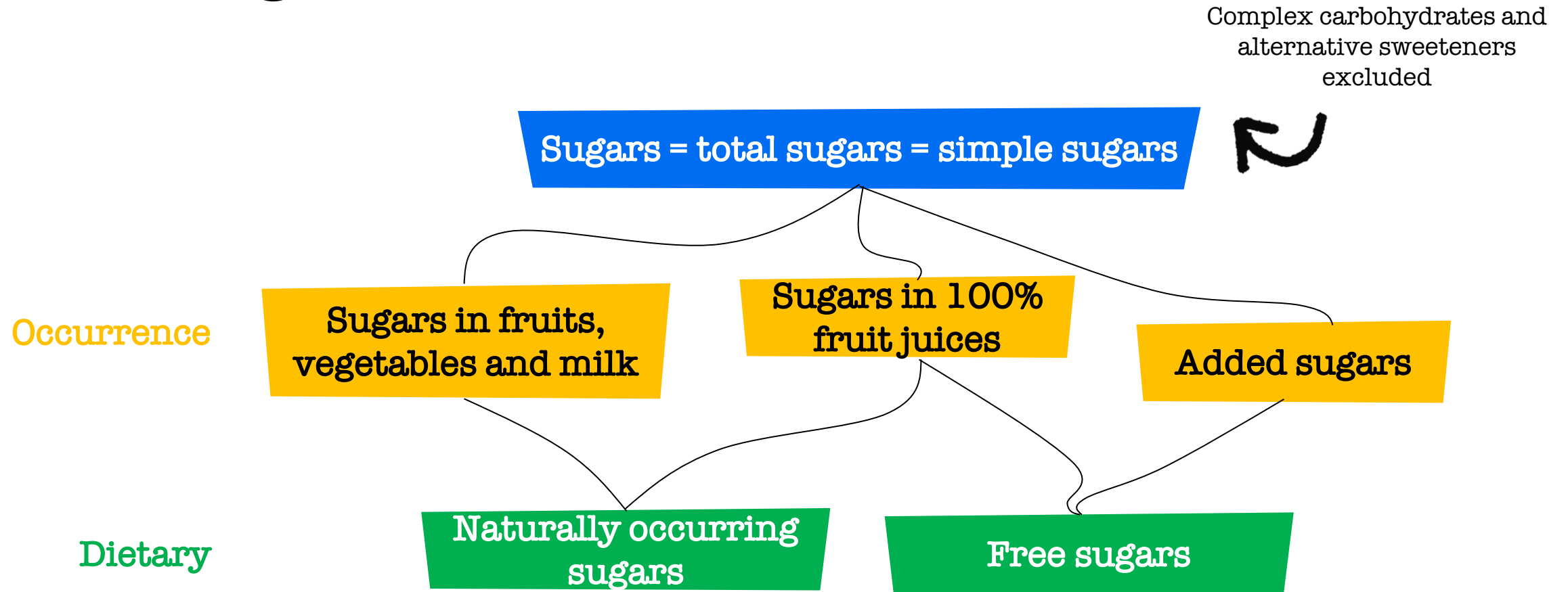
**WITH THE CURRENT, LONG-TERM TREND OF INCREASING NCDs,  
THESE COSTS WILL ONLY BECOME HIGHER**

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III

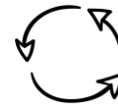
What does the WHO  
recommend and what can  
we conclude from the  
sugar health debate?

# Let's introduce yet another sugar term: free sugars



# WHO recommends countries to reduce free sugars intake among adults and children

## RECOMMENDATIONS



Reducing these numbers by half would provide additional health benefits

*Average daily free sugar intake in NL<sup>2</sup>*



Maximum of 10 teaspoons of free sugar per day for the average adult<sup>1</sup>

*23 teaspoons*



Maximum of 50 grams of free sugar per day for average adult<sup>1</sup>

*114 grams*



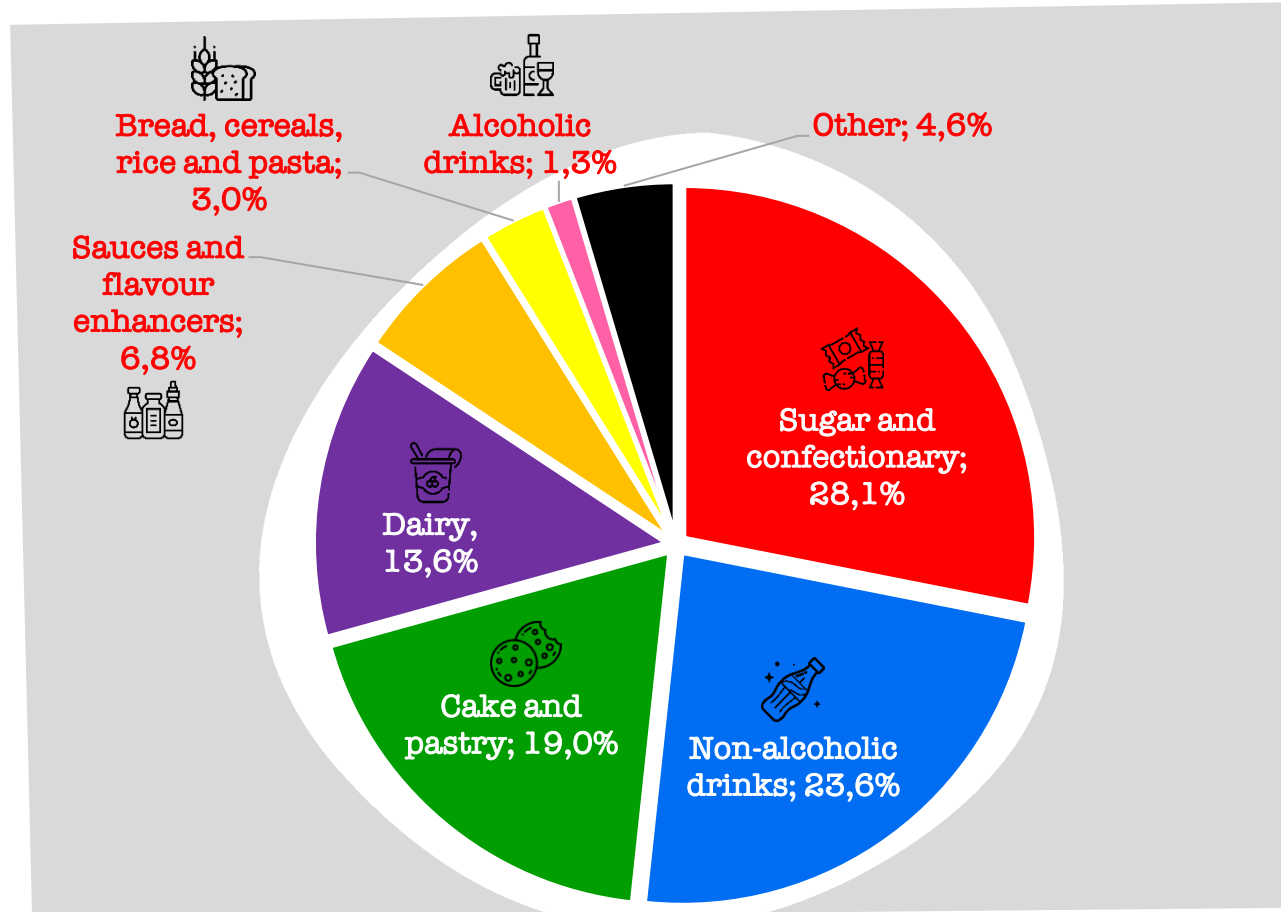
Free sugars intake at all stages of life <10% of physical calories

*N/A*

1. Average daily calorie intake of 2000 kcal per adult

Source: <https://www.who.int/publications/i/item/9789241549028>; <https://www.rivm.nl/en/news/national-agreement-leads-to-small-improvement-in-intake-of-salt-and-sugar>

# Dutch people consume most added sugars via sugary snacks and non-alcoholic drinks



- Dutch study from the Volkskrant based on the newest food consumption poll (2012-2016) from the RIVM (1-79 years)
- Overview of percentage added sugar of total consumption
- Only 15% of the sugar we consume is consciously put in our food by ourselves; the other 85% is processed in our food<sup>1</sup>

1. <https://www.preventiediabetes.nl/zoetstoffen-onschuldige-vervangers-van-suiker;>

Source: [https://www.volkskrant.nl/nieuws-achtergrond/de-suikertaks-staat-weer-op-de-politieke-agenda-hoeveel-suiker-eten-we-eigenlijk~b7fa2ef1/;](https://www.volkskrant.nl/nieuws-achtergrond/de-suikertaks-staat-weer-op-de-politieke-agenda-hoeveel-suiker-eten-we-eigenlijk~b7fa2ef1/)

# Concluding: 8 key takeaways from the sugar and carbohydrate discussion

- 1** Sugars are essential nutrients for our body as well as essential functional elements of some of the products we eat..
- 2** ..but in the average diet we are consuming too many of them
- 3** Overconsumption increases the risk for NCDs leading to a negative impact on society and the economy as a whole
- 4** Natural and added sugars are processed by our body in the same way..
- 5** ..however, natural products also contain other nutrients (fibers and vitamins), whereas products with added sugar often have less nutritional value
- 6** Although they seem very different, your body will digest starches into the same sugar molecules as simple sugars (although a bit slower)
- 7** ..fibers, however, are different because they can only partially be digested and have additional functions
- 8** In a healthy diet, you may be best off by choosing foods and beverages that are high in nutrients and low in added sugar

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**IV**



# Recap | 4 important roles of sugar in chocolate



Sweetness



Texture/  
mouthfeel



Freezing point  
depression



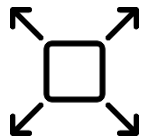
Flavor enhancer/  
balancer/ aroma



Shelf-life



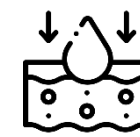
Color



Bulk<sup>1</sup>



Fermentation



Moisture  
retention

1. Sugars affect the physical characteristics of food, e.g. in baked foods baked goods it creates small air cells

Source: <https://www.voedingscentrum.nl/encyclopedie/suiker.aspx>; <https://www.sugar.org/sugar/what-is-sugar/>; <https://sugar.ca/sugar-basics/carbohydrate-and-sugars-terminology>



# (our) Chocolate bars contain a lot of sugar



White

Milk 32%

Dark milk 42%

Extra dark 70%

	White	Milk 32%	Dark milk 42%	Extra dark 70%
Energy	2387 kJ / 570 kcal	2280 kJ / 545 kcal	2308 kJ / 552 kcal	2360 kJ / 564 kcal
Total fat	36 g	33 g	36 g	43 g
of which saturated	21.8 g	20.0 g	21.8 g	25.5 g
Total carbs	54.9 g	51.9 g	45.1 g	30.7 g
of which sugar	54.4 g	50.7 g	43.3 g	27.0 g
Protein	6.1 g	7.7 g	8.1 g	7.8 g
Salt	0.21 g	0.21 g	0.16 g	0.02 g

Nutritional values  
per 100 grams

# Overview of sugar in other products

## Candy & sugar

- Chocolate spread (57%)
- Plain chocolate (63%)
- Fruit pastilles (59%)

## Non-alcoholic drinks

- Coke (11%)
- Squash cordials (25%)
- Sweetened fruit juice (10%)

## Cookies & cake

- Iced cakes (54%)
- Chocolate-coated biscuits (46%)
- Frosted corn flakes (37%)

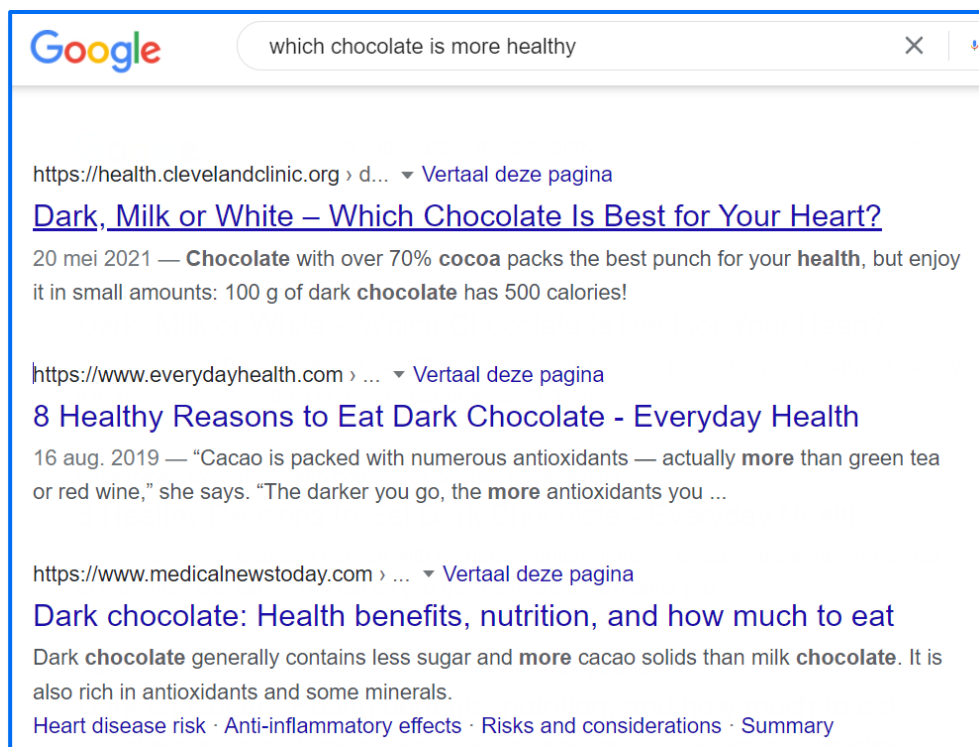
## Dairy

- Fruit yoghurt (17%)
- Fruit fromage frais (13%)
- Chocolate ice (21%)

## Savory

- Tomato ketchup (28%)
- Sweet & sour sauce (20%)
- Salad cream (17%)

# The dark vs milk health debate is often about sugars, but that's not the full truth



If you want to compare milk vs dark, or even brands, you should not only consider sugar; overconsumption of fats also needs to be prevented



Comparing total calories is not the ideal, but sometimes mentioned as the fairest method



Dark chocolate contains more flavonoids (which may have medical benefits) and more minerals

# (our) Chocolate bars contain also a lot of fat



White

Milk 32%

Dark milk 42%

Extra dark 70%

	White	Milk 32%	Dark milk 42%	Extra dark 70%
Energy	2387 kJ / 570 kcal	2280 kJ / 545 kcal	2308 kJ / 552 kcal	2360 kJ / 564 kcal
<b>Total fat</b>	<b>36 g</b>	<b>33 g</b>	<b>36 g</b>	<b>43 g</b>
<b>of which saturated</b>	<b>21.8 g</b>	<b>20.0 g</b>	<b>21.8 g</b>	<b>25.5 g</b>
<b>Total carbs</b>	<b>54.9 g</b>	<b>51.9 g</b>	<b>45.1 g</b>	<b>30.7 g</b>
<b>of which sugar</b>	<b>54.4 g</b>	<b>50.7 g</b>	<b>43.3 g</b>	<b>27.0 g</b>
Protein	6.1 g	7.7 g	8.1 g	7.8 g
Salt	0.21 g	0.21 g	0.16 g	0.02 g

Nutritional values  
per 100 grams

# There are six main ingredients in our bars, next to our fun ingredients

**FAT MOSTLY COMES FROM COCOA BUTTER AND COCOA MASS/LIQUOR**

Cocoa butter

Cocoa mass / liquor

(Fat reduced) Cocoa powder

**SUGAR MOSTLY COMES FROM SUGAR AND DRIED WHOLE MILK**

Dried whole milk

Sugar

Emulsifier

So, where is that sugar and fat coming from?



# These ingredients aren't present in all bars and definitely not in the same amounts



White

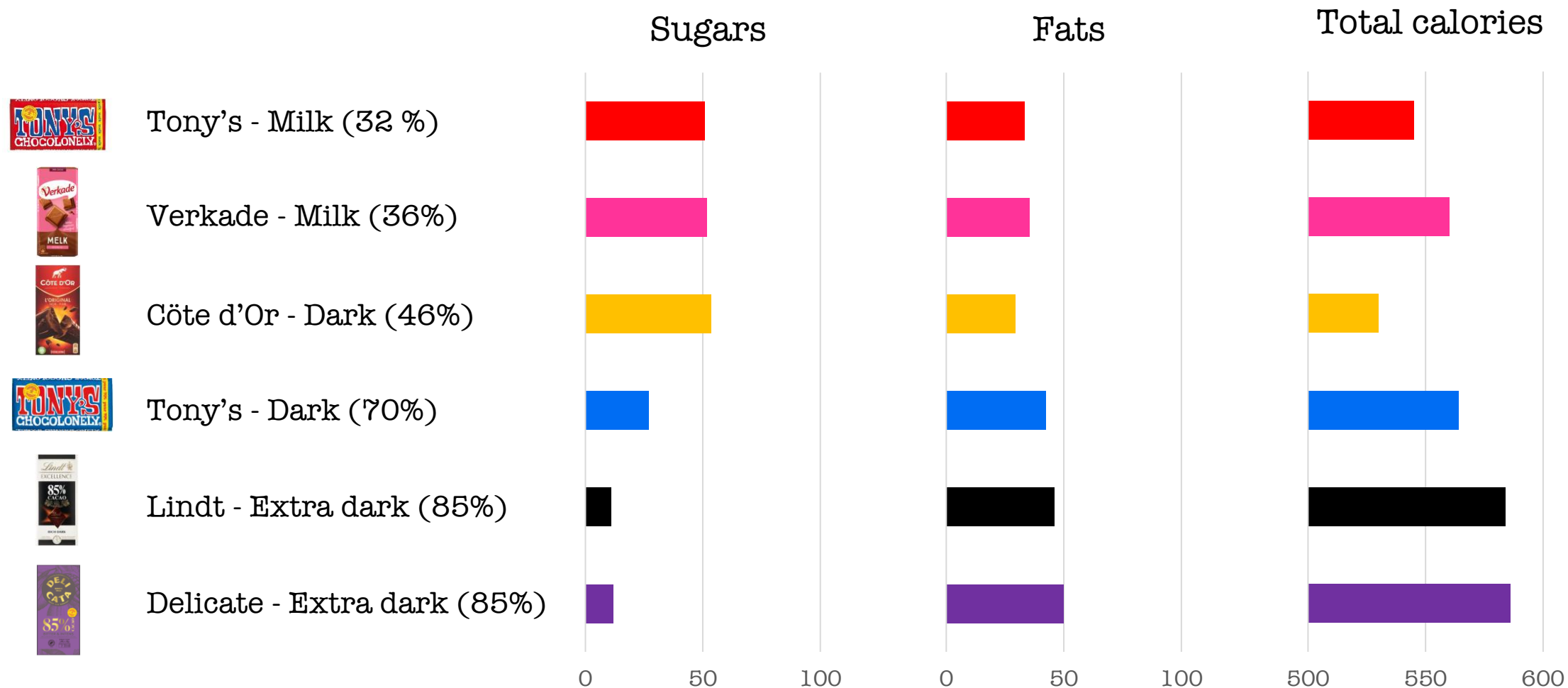
Milk 32%

Dark milk 42%






Extra dark 70%

Cocoa butter	✓	✓	✓	✓
Cocoa mass / liquor	✗	✓	✓	✓
Sugar	✓	✓	✓	✓
Dried whole milk	✓	✓	✓	✗
(Fat reduced) cocoa powder	✗	✗	✗	✓
Emulsifier (soya lecithin)	✓	✓	✓	✓

# Let's compare choco bars per 100 grams



# There is no right or wrong answer as to which is more healthy

	MILK	DARK
..total sugars		
..added sugars		
..fat		
..total calories		
..nutritional value (flavonoids, minerals)		



# First serious innovations with replacements have started, but industry isn't there yet

## Sugar replacement used

- ❖ **Natural sweeteners:** Fruit extract, coconut sugar, crystalized honey, crystalized maple syrup, agave syrup, date palm, monk fruit
- ❖ **Sugar alcohols:** Mainly maltitol, but also erythritol or xylitol
- ❖ **Artificial sweetener:** Best example is steviol glycosides (stevia)

## Not ideal yet

1. **Difficulty:** If you replace sugar in chocolate, you need to replicate the sweetness function as well as the bulk function
2. **Side effects:** Artificial sweeteners are often used, however, they cause flatulence and bloating
3. **Tastiness:** Not all producers and consumer find today's replacements equally tasty

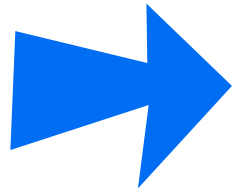
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V

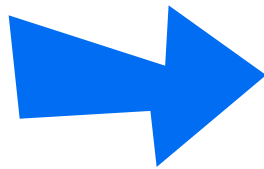
What types of solutions  
are possible? What  
trends do we see in our  
golden markets?

# Different interventions by different players needed to tackle overconsumption of sugar



## **INTERVENTIONS**

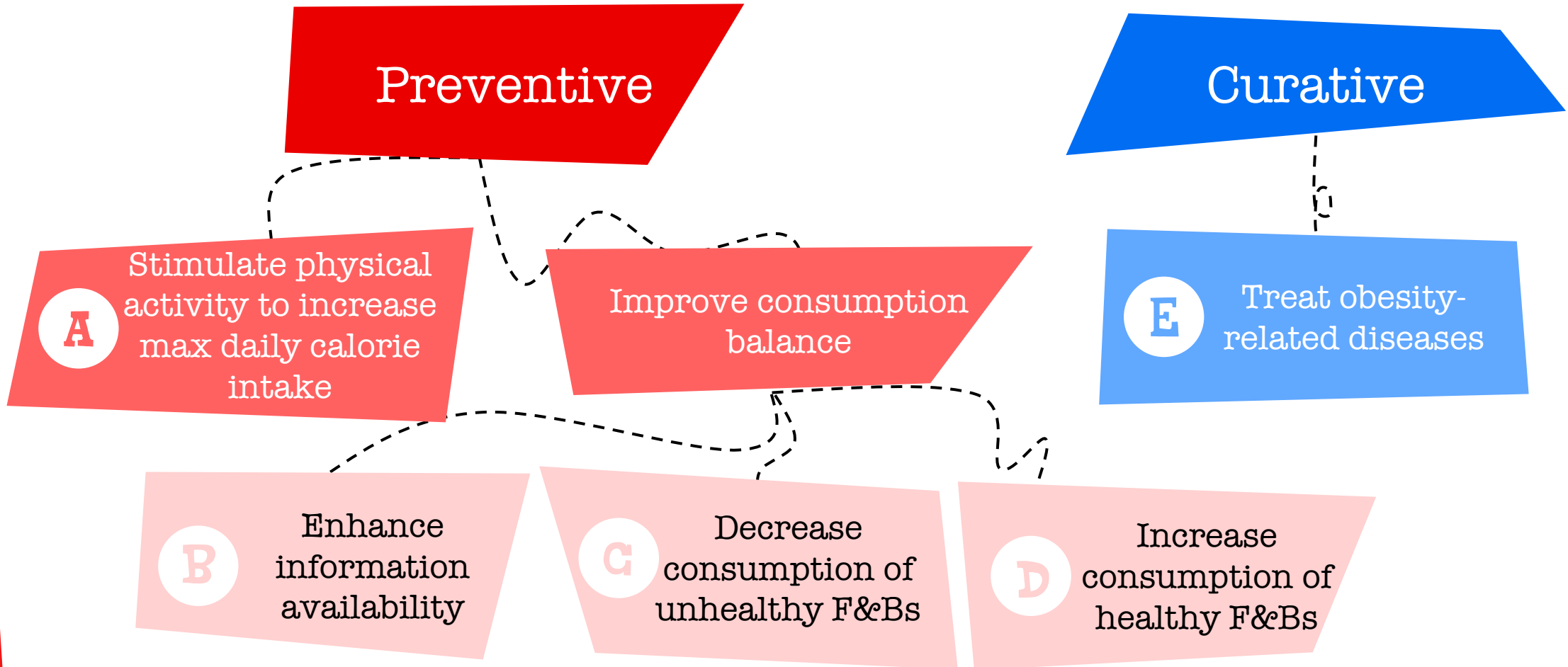
Different interventions are needed at the same time to target the different needs and responsiveness of various population segments



## **PLAYERS**

Several players, from producers to sellers, as well as governments and consumers themselves need to play their part

# 5 main ways to intervene

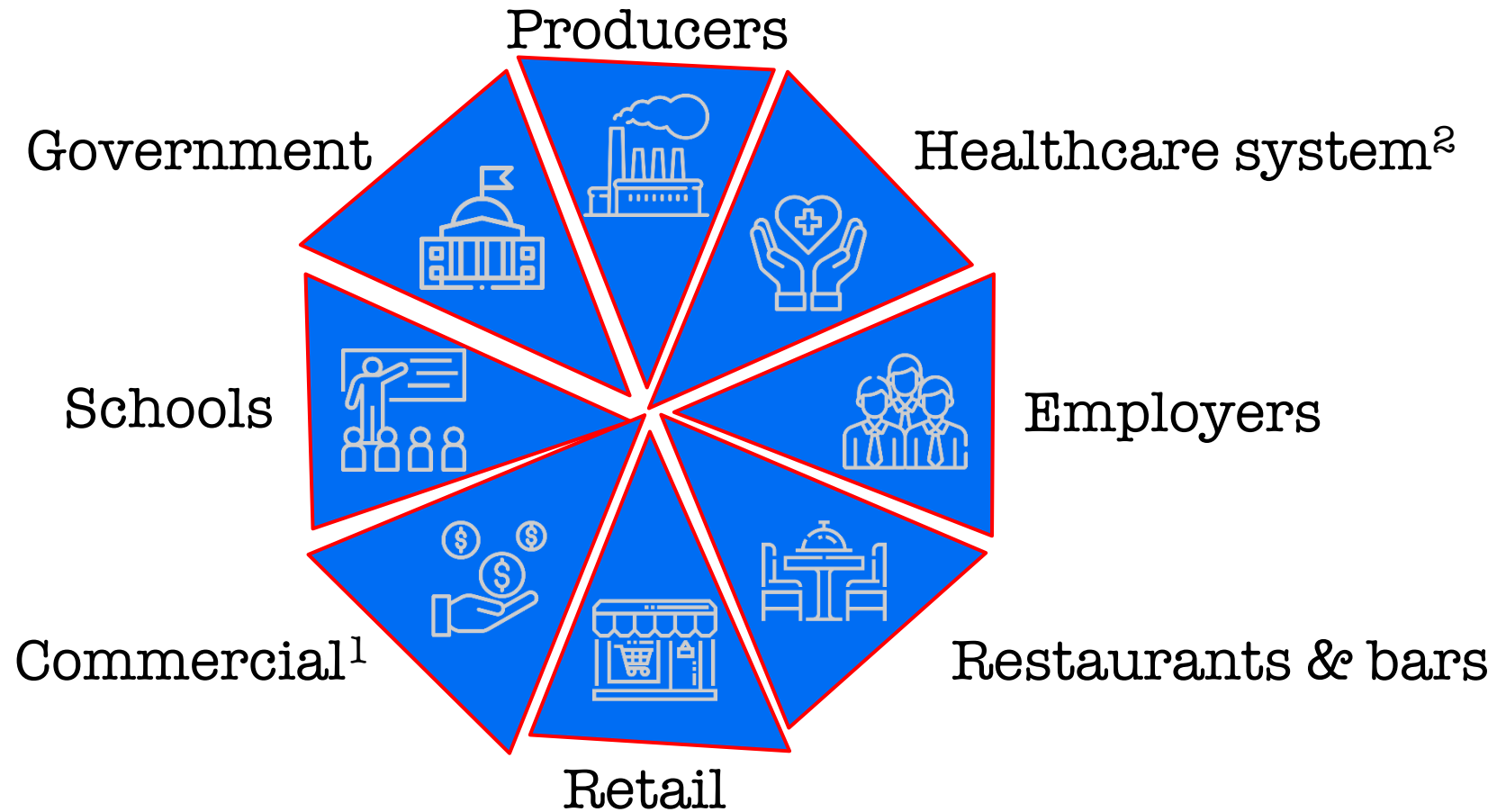


# We identified 11 types of existing and new interventions..

Stimulate physical activity	Enhance information availability	Decrease consumption of unhealthy F&Bs	Increase consumption of healthy F&Bs	Treat obesity-related diseases
<b>1. Physical activity</b> Stimulation or enabling of physical activity e.g. at schools, the workplace, between locations	<b>2. Labeling</b> Informative label on product's package	<b>4. Restrictions &amp; bans</b> Restrictions and bans on advertisement, price promotions and offering of unhealthy foods	<b>7. Improved offering</b> Increased (promoting of) the health quality of the offering and / or meals	<b>10. Weight management</b> Solutions that facilitate / incentivize to lose weight
	<b>3. Education</b> Education of health in school curriculum, for parents or via public health campaigns	<b>5. Taxes and prices</b> Taxes and/or higher prices to discourage unhealthy foods	<b>8. Subsidies and prices</b> Subsidies and/or lower prices to stimulate healthy foods	<b>11. Pharmaceuticals &amp; surgery</b> Provision of pharmaceuticals to treat obesity or surgery of obesity-related troubles
		<b>6. Portion control</b> Reduced portion sizes of unhealthy foods and drinks	<b>9. Reformulation</b> New or adjusted formulas of unhealthy foods and drinks	

More information to be found in our extensive research: type of existing interventions, pros and cons etc.

# ...in which 8 different types of players can be involved





1. New or existing companies which are going to provide a new service triggered by the commercial opportunity; 2. E.g. healthcare providers

# Mapping of interventions and the players involved

Linkage key

✓ Clear link    ~ Sufficient link

Government can be involved in all interventions and for many of them they have an overruling decision power

	Commercial 	Employer 	Government 	Healthcare system 	Producers 	Restaurants & bars 	Retail 	Schools 
<b>1</b> Physical activity	~	✓	✓	✓				✓
<b>2</b> Labeling		✓	✓		✓	✓	✓	~
<b>3</b> Education			✓	✓	~		~	✓
<b>4</b> Restrictions & bans		✓	✓		✓	~	✓	✓
<b>5</b> Taxes & prices			✓		✓		✓	
<b>6</b> Portion control		~	~		✓	~	✓	~
<b>7</b> Improved offering		✓	✓			~	✓	✓
<b>8</b> Subsidies & prices			✓		~		~	
<b>9</b> Reformulation			~		✓	✓		
<b>10</b> Weight management	✓	✓	✓	✓				
<b>11</b> Pharmaceuticals & surgery			✓	✓				

# In our research on interventions, we focused on Tony's 4 biggest markets

In scope for our research

Increase max. daily calorie intake	Enhance information availability	Decrease consumption of unhealthy F&B	Increase consumption of healthy F&B	Treat obesity-related diseases
1. Physical activity	2. Labeling	4. Restrictions & bans	7. Improved offering	10. Weight mgmt
	3. Education	5. Taxes and prices	8. Subsidies and prices	11. Pharmaceuticals & surgery
		6. Portion control	9. Reformulation	



THE NETHERLANDS



THE UNITED KINGDOM



THE UNITED STATES




GERMANY



































# Most mature obesity prevention strategy and policies in the UK

**Policy maturity key (western countries)**  
**High** Implemented policies by government - mostly based on obligations  
**Med** Agreement between government, industry and other players - mostly based on advise

**Policy scope key**  
 Some legislation  
 Advise or agreement  
 Not mentioned

High level overview of policies per golden market

No US-level policies in place, only advise to states / communities (CDC)

	 Netherlands	 United States	 United Kingdom	 Germany
Level of interventions	Medium	N/A	High	Medium
1 Physical activity		N/A		
2 Labeling		N/A		
3 Education		N/A		
4 Restrictions and bans (advertisement)		N/A		
5 Taxes and prices (sugar tax)		 Only implemented in about 10 municipalities		
6 Portion control		N/A		
7 Improved offering		N/A		
8 Subsidies and prices		N/A		
9 Reformulation		N/A		

# NL | Overview of current and planned obesity-related policies



## In 2018..

..the national government concluded the National Prevention Agreement together with more than 70 civil society organisations. It contains more than 200 agreements to make the Netherlands healthier with a focus on smoking, obesity and alcohol:

The obesity-related agreements of the National Prevention Agreement are focused on healthier nutrition, more physical activity and a healthier environment/healthcare. Some of the agreements are:

- By 2019, the national government, supermarkets and catering companies will make the “Schijf van vijf” (food guidelines) known in the Netherlands via multiple media – so that people can make healthier choices
- The ‘Akkoord Verbetering Productsamenstelling’ (Agreement Improvement Product Composition) for product groups with high energy intake (sodas, cook, candy, chocolate and milk-based sugary drinks) will be expanded in 2020: a) 5% extra sugar reduction from milk-based sugary drinks, b) agreements about portion size for cook, candy and chocolate bars for 70% of the A-brands, c) the current agreement about 15% less sold sodas in 2020 will be increased to 25%
- By 2020, a minimum of 2,500 sports clubs, 960 schools and half of the hospitals will offer healthier food in their canteens
- By the first half of 2022, the national government wants to introduce a new food choice logo so that its easier for people to choose healthy food
- Overweight people and families will receive tailor-made care and support – from 1 January 2019 onwards, the reimbursement for this Combined Lifestyle Intervention will be included in basic insurance policies
- Sports clubs and gyms want to make their offerings even more accessible to people who do not exercise at all or enough

## In 2021..

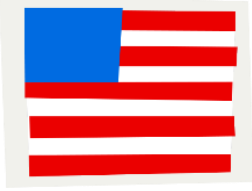
The new government named sugar tax in its coalition agreement:

It commits to ‘..increase the taxes **on sugar sweetened beverages..**’ and to create “..binding agreements with the industry about healthier food.”

It says it will also **explore** (“bezien”) how to – in time (“op termijn”) - implement a (broader?) sugar tax and lower the tax on fruits and vegetables to 0%.

The latter would be in line with the proposal of foodwatch to lower the transition from the current EU-wide 5% VAT to 0%

# US | Overview of current and planned obesity-related policies



The Centres for Disease Control and Prevention (CDC) has defined a prevention strategy & guidelines

In the United States, many prevention strategies need to be implemented on the state or community level and therefore, the CDC has provided them with strategies and guidelines. For example:

- A guide with strategies to increase physical activity in the community
- A guide with strategies to increase the consumption of fruits and vegetables
- 24 recommended obesity prevention strategies focusing on environmental and policy level change initiatives that can be implemented by local governments and school districts to promote healthy eating and active living
- CDC's framework for obesity prevention, identifying ways that states, and to some extent communities, can support childcare and early education facilities to achieve recommended standards and best practices for obesity prevention
- Guidelines that serve as the foundation for developing, implementing, and evaluating school-based healthy eating and physical activity policies and practices for students



# UK | Overview of current and planned obesity-related policies

## April 2018

### 'Soft Drinks Industry Levy' implemented

- The goal is to make producers reformulate their products
- The rates companies will need to pay are as follows:
  - 24p per litre of drink if it contains 8 grams of sugar per 100 millilitres
  - 18p per litre of drink if it contains between 5 – 8 grams of sugar per 100 millilitres
- Soft drink manufacturers who don't reformulate will pay the levy, which is expected to raise £240 million each year. This money will go towards doubling the Primary Sports Premium, the creation of a Healthy Pupils Capital Fund to help schools upgrade their sports facilities, and give children access to top quality PE equipment
- Already resulted in over 50% of manufacturers reducing the sugar content of drinks since it was announced in March 2016 – the equivalent of 45 million kg of sugar every year

## Launched in July 2020; to be implemented in parts

### 'Tackling obesity strategy'

- The expansion of NHS England weight services aiming to support more people to lose weight.
- Legislation making calorie labelling on menus for food and drinks in cafes, restaurants, bars and takeaways compulsory for all businesses with more than 250 employees (following a 2018 consultation)
- *Postponed until Oct '22*: Legislation to restrict promotions on foods HFSS<sup>1</sup> (e.g. 'buy one get one free' offers). There will also be a ban on these items being displayed in prominent locations in stores (e.g. at checkouts or shop entrances)
- *End of '22*: New laws banning the advertising of food HFSS<sup>1</sup> on television and online before 9pm, when children are most likely to see them. (following a 2019 consultation). Ahead of this, the government will also hold a new short consultation on whether the ban on online adverts for foods HFSS<sup>1</sup>, should apply at all times of day
- A new health promotion campaign from Public Health England (PHE): Better health – let's do this! The Better Health website will provide information and free tools to support people to lose weight, alongside a new NHS 12-week weight loss app
- The launch of two new consultations; one on front-of-pack nutrition labelling and another on calorie labelling on alcohol

1. High in Fat, Sugar and Salt

Source: <https://www.gov.uk/topic/business-tax/soft-drinks-industry-levy>; <https://www.gov.uk/government/news/soft-drinks-industry-levy-comes-into-effect>; <https://www.gov.uk/government/consultations/total-restriction-of-online-advertising-for-products-high-in-fat-sugar-and-salt-hfss/introducing-a-total-online-advertising-restriction-for-products-high-in-fat-sugar-and-salt-hfss>

# DE | Overview of current and planned obesity-related policies



## Set-up in 2008

### The national initiative to Promote Health Diets and Physical Activity (IN FORM)

The intersectoral initiative from the German government, led by the Federal Ministry of Food, Agriculture and Consumer Protection (BMEL) and the Federal Ministry of Health (BMG), aims to achieve sustainable improvements in healthy diets and physical activity. The early stage is finished in 2020, and is now continued by a second phase. It frames obesity as a public health problem and contains five main areas for action:

- For the Federal government, the states and communes to 'set an example' (such as through Health Impact Assessments, in the allocation of public funds, as employers, and as funding bodies of community facilities)
- The provision of information on diet, physical activity and health
- The promotion of physical activity in daily life
- Improving the quality of catering away-from-home
- Providing a fresh impetus for research

## Started in 2019

### Implementation of The National Reduction and Innovation Strategy

The strategy is a result of a joint process involving stakeholders from the national government, as well as associations and institutions from the areas of nutrition, health, the food industry, the artisanal food sector, consumer protection and science. The implementation of the strategy started at the beginning of 2019 and will be closely monitored until 2025:

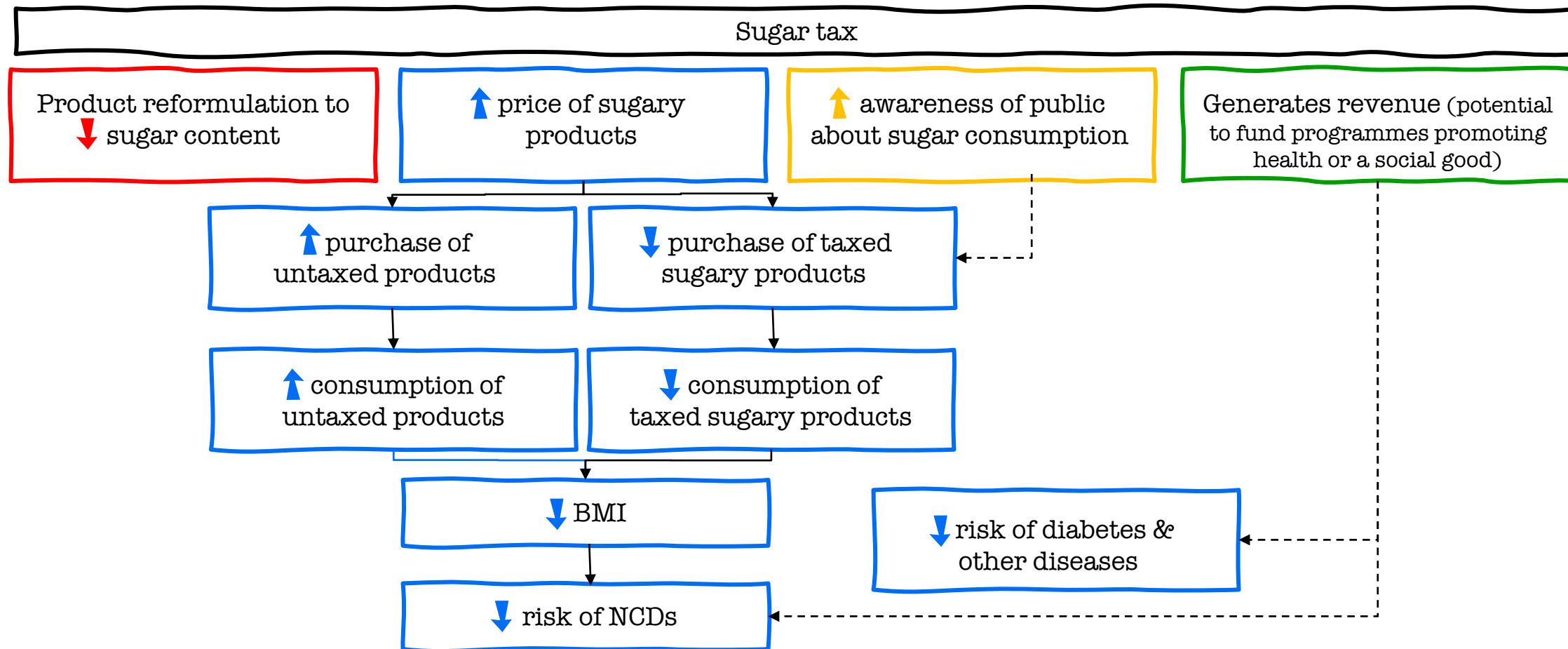
- The food sector has committed itself to achieve specific reduction targets by 2025 – with a special focus on products targeted at children and adolescents. Some aims are to reduce the sugar in breakfast cereals, soft drinks, sweetened dairy products and fruit drinks and the salt in bread, meat and frozen foods
- The Max Rubner-Institut (MRI) is in charge of conducting a product monitoring in order to determine changes in sugar, fat, salt and energy contents of processed foods over time. The first results (based on 2016-2018 data) were published in April 2020 and indicated that the strategy was already having an effect, as reduced sugar or energy levels were determined in all of the analysed product categories
- In May 2020, Federal Minister Klöckner enacted a regulation for a national ban on the addition of sugar and other sweetening ingredients to herbal infusions for infants or small children. The ban includes sugar and other sweetening ingredients such as honey, fruit juice (concentrate), malt extract and other syrups produced from plant-based raw materials

# We've performed (amongst others) a deep-dive on pricing & taxes

Stimulate physical activity	Enhance information availability	Decrease consumption of unhealthy F&B	Increase consumption of healthy F&B	Treat obesity-related diseases
<p><b>1. Physical activity</b></p> <p>Stimulation or enabling of physical activity e.g. at schools, the workplace, between locations</p>	<p><b>2. Labeling</b></p> <p>Informative label on product's package</p>	<p><b>4. Restrictions &amp; bans</b></p> <p>Restrictions and bans on advertisement, price promotions and offering of unhealthy foods</p>	<p><b>7. Improved offering</b></p> <p>Increased (promoting of) the health quality of the offering and / or meals</p>	<p><b>10. Weight management</b></p> <p>Solutions that facilitate / incentivize to loose weight</p>
	<p><b>3. Education</b></p> <p>Education of health in school curriculum, for parents or via public health campaigns</p>	<p><b>5. Taxes and prices</b></p> <p>Taxes and/or higher prices to discourage unhealthy foods</p>	<p><b>8. Subsidies and prices</b></p> <p>Subsidies and / or lower prices to stimulate healthy foods</p>	<p><b>11. Pharmaceuticals &amp; surgery</b></p> <p>Provision of pharmaceuticals to treat obesity or surgery of obesity-related troubles</p>
		<p><b>6. Portion control</b></p> <p>Reduced proportion sizes of unhealthy foods and drinks</p>	<p><b>9. Reformulation</b></p> <p>New or adjusted formulas of unhealthy foods and drinks</p>	

Information on what specific interventions already exist in our extensive research

# Sugar tax can influence society in multiple ways



# Increasing trend in countries implementing a sugar tax (until 2018)

More information to be found in our extensive research: specific tax implemented per country + case studies

	Specific excise	Combination of both	Ad valorem	
<b>Product itself (sugar)</b>	 Norway	 St. Vincent and the Grenadines		
<b>Specific sugary product group (sugary drinks)</b>	 Belgium  Brunei  France  Ireland  Latvia  Malaysia  Mauritius  Morocco  Philippines  Portugal	 Samoa  Seychelles  South Africa  Catalonia, Spain  St. Helena  Tonga <sup>1</sup>  USA (San Francisco, Berkely, Albany, Philadelphia, Boulder, Oakland, Seattle)  Vanuatu	 Ecuador  Fiji  Thailand	 Bahrein  Barbados  Chile  Kiribati  Peru  Saudi Arabia  Spain  UAE
<b>Multiple sugary product groups (mostly SBB in combination with e.g. confectionary)</b>	 Finland <sup>2</sup>  French Polynesia  Norway <sup>3</sup>  Poland		 Mexico	 Bermuda  Dominica  India
<b>Broader diet (sugar in combination with e.g. fat and salt)</b>	 Hungary		 Ethiopia	

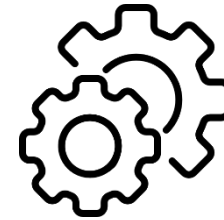
1. Also taxes on animal fat products and turkey tails; 2. In January 2017 Finland stopped with their taxes on confectionary (candy and ice cream), 3. In January 2021 Norway stopped with their taxes on chocolate and sugary products. Source: [https://policydatabase.wcrf.org/level\\_one?page=nourishing-level-one#step2=2#step3=315](https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=2#step3=315)



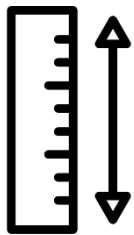
# The following 5 questions should be considered while designing a sugar tax



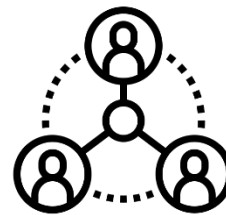
What types of **product** (groups) should be taxed?



What **type** of tax should be used?



How **high** should the tax be?



**Who** should pay the tax?



Should it be **general** or an **earmarked** tax?

# Some of the more recent positive news on the effects of a sugar tax (mostly on sugar sweetened beverages)



Taxes on sugary drink: why do it? (2017) [link](#)



Health taxes (Sept. 2019) [link](#)



Business, employment, and productivity impacts of SSB taxes (June 2020) [link](#)



Consumption of sugary drinks could decline substantially if they were properly taxed (May 2021) [link](#)



*“Task Force on Fiscal Policy for Health”*

Health Taxes to Save Lives (April 2019) [link](#)



Rijksinstituut voor Volksgezondheid en Milieu  
Ministerie van Volksgezondheid, Welzijn en Sport

Comparison of sugary drinks tax in UK, France and Norway (2020). Shares that “sales of taxed drinks has decreased” and “more healthy alternatives are sold” [link](#)



European Commission

Europe's Beating Cancer Plan (Feb. 2021) [link](#)

# A sugar tax could also bring market prices closer the 'true price' of food

The Rockefeller Foundation set up a true cost accounting methodology for the US food industry

## Human Health

- Overweight/obesity
- Food insecurity
- Noncommunicable diseases
- Air pollution
- Assesses qualitatively – Antimicrobial resistance

## Environment

- Greenhouse gas emission
- Water use
- Soil erosion

## Economy

- Subsidies

## Biodiversity

- Land use
- Pollution

## Livelihoods

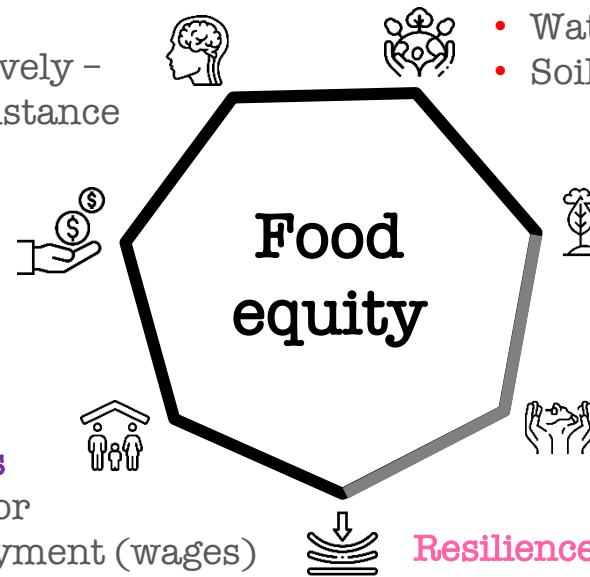
- Child labor
- Underpayment (wages)
- Lack of benefits
- Occupational health and safety

## Animal Welfare

- Assesses qualitatively

## Resilience

- Assesses qualitatively



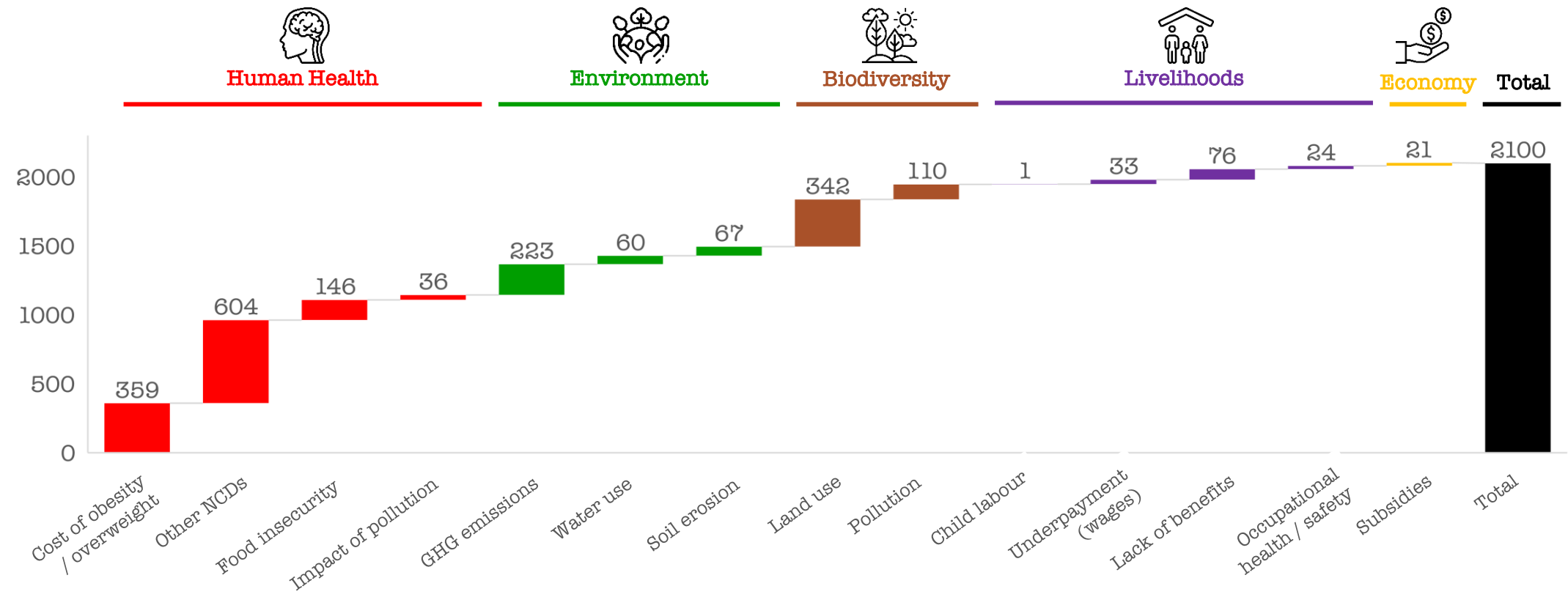
### Key

- Metrics assessed qualitatively
- Metrics selected for quantification

Non-exhaustive

# Human health and the environment are the 2 areas that contribute most to the true cost

Costs from quantitative metrics across 14 key metrics, annual (bn USD)



Source: <https://www.rockefellerfoundation.org/wp-content/uploads/2021/07/True-Cost-of-Food-Full-Report-Final.pdf>;

done!

