DON'T MESS AROUND WITH FATS!

Understand the fat intake

Fats, the body's main source of energy, are often demonized and in common understanding considered the macronutrient category to be avoided. They are important by virtue of their structural role; in fact, fatty acids go to make up cell and nuclear membranes and are the starting point for the synthesis of important biomolecules. With this aspect understood, it should in any case be pointed out that this category of macronutrients is subdivided into different types of fatty acids, and saturated fatty acids (SFA) appear among them. The saturated fatty acids are derived from both animal fats and plant oils, but in any case, they are synthesized in the body and not required in the diet. In addition, a high consumption of SFAs is directly related to an increased risk of onset of cardiovascular disorders and to an increased synthesis of body cholesterol. For this reason, international organizations, such as WHO and EFSA, recommend that SFA levels should be taken as low as possible; in general, the threshold not to be exceeded is indicated as that corresponding to 10% of total calories taken daily.
This activity, especially if approached after working on "***ENERGY INTAKE***" situation, will allow us to assess, and then begin to estimate, the threshold value of SFAs in our diets. The calculation is very simple and makes this situation further proof of how math is involved in multiple areas of our lives, and health prevention is part of them.

Overview "DON'T MESS AROUND WITH FATS!"

Understand how much is the fat intake (especially SFA)

Context
everyday life
health and care

Cognitive processes
Analysing situations
Processing informations

Target group (incl. necessary prior skills and competences)

Adults and young adults who are sensitive to health issues

Content

Multiplication and division
Addition and subtraction

Dispositions
self-confidence
flexibility

Outcomes and results

Estimate the daily threshold value of SFA

reflect the personal eating habits

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Main information

Content	Natural numbers and decimal numbers Multiplication, division, addition, subtraction
Target group	Adults and young adults who are sensitive to health issues
Learning intention	Numeracy for personal and private purposes
Duration	2 UE
Material and resources	Picture cards material from "*ENERGY INTAKE*" situation
Group size	From 5 to 10 learners small group work: 2 to 3 learners
Problem statement	Of the various types of fatty acids that we consume in our diet, saturated fatty acids are the ones to pay the most attention to. Several studies have shown a correlation between SFAs and increased development of cardiovascular disease, blood cholesterol levels, and other disorders that can adversely affect quality and life expectancy. To avoid prevention by simply eliminating certain foods completely, perhaps with some frustration, it is good to try to understand what is the maximum threshold that should not be exceeded and by evaluating some scientific data make informed choices.
Learning outcomes and results	The learners apply basic mathematical knowledge to make informed choices in addition to estimating, in case "***ENERGY INTAKE***" has been previously carried out, the amount of SFAs taken up by them.

Working plan

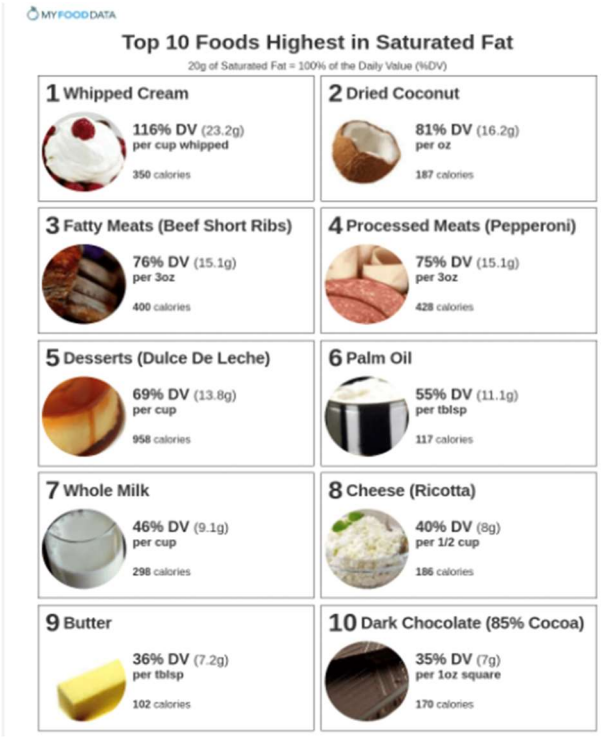
Time (lessons)	Description of content/activities	Material	Methodical and didactic information[1]
45'	<u>1.Discover</u> In this phase, both the threshold value related to SFAs and the main sources of these fats in foods are explained. *The material prepared by the teacher should include tables in which the amounts of SFAs contained in different foods are given; in this way the discussion part can also follow during which, simply by comparing numbers, learners will be stimulated to reason about certain food choices, with the awareness that such a choice entails.*	Tables with nutritional facts prepared by the teacher (see appendix 1)	Explicit teaching Questioning Discussion
30'	<u>2.Calculate threshold of SFAs</u> Recognizing that the highest level corresponds to only 10% of the daily intake, the learners are engaged in refining the diets they had previously developed (refer to "***ENERGY INTAKE***") or exploring alternative ones suggested by the teacher. In this case it would be interesting to include in such diets different foods, which can be a source of large amounts of SFAs or on the contrary contain very few. In this way additional considerations will emerge in the <u>discussion</u> phase.	Diets developed by learners or by the teacher	Pair group work Questioning
45'	<u>3.Discussion</u> In this final stage, learners are stimulated to think again about the material initially presented, in light also of additional mathematical evidence derived from the computational stage. The purpose is to guide them in evaluating certain choices that are supported not only by scientific evidence but also by precise mathematical quantification.		Feedback

[1] for description and explanation of kinds of tasks, HITS and other background information please consult the teachers'/user's guide

	It is further reiterated (as in previous food-related situations) how it is necessary to make a qualitative and quantitative assessment in order to make with awareness certain decisions on which our health condition may depend.		

Appendix 1

Material for phase 1 - Discover



Source:

Top 10 Foods Highest in Saturated Fat (myfooddata.com)

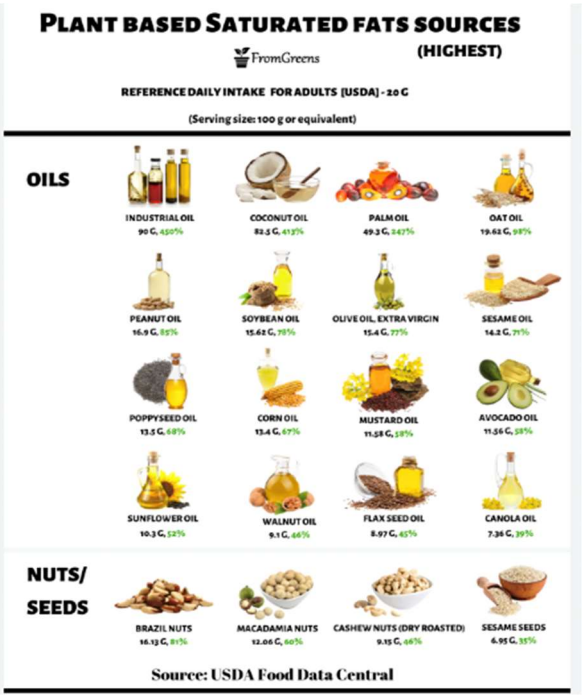
[30.06.2023]

Alimenti	Grassi per 100g	Grassi Saturi per 100g
Olio oliva	100	15
Strutto	99	41
Burro	83	58
Margarina	80	37
Mascarpone	42	28,2
Croissant	40	27
Pancetta	35,5	14,2
Nutella	31,6	11
Emmentaler	31	22
Parmigiano	28,4	18,7
Gorgonzola	28	19,5

Source:

papille vagabonde: Burro o non burro? Quale relazione con le malattie cardiovascolari

[30.06.2023]



Source:

[Vegan Sources Of Biotin With % Daily Intake - Evidence Based Content (fromgreens.com)]

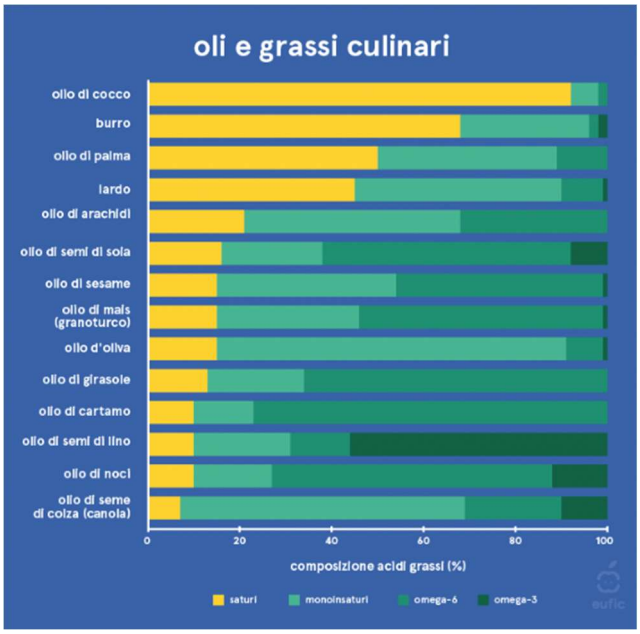
[30.06.2023]

Alimenti	Lipidi totali	Acidi Grassi		
		Saturi	Monoinsaturi	Polinsaturi
Carne bovina semigrassa	14,2	7,8	5,1	0,5
Carne suina	6,8	3,02	2,05	1,21
Agnello semigrasso	15,0	5,7	7,8	0,7
Pollo (intero)	5,7	1,7	2,3	1,4
Tacchino	6,7	2,0	2,9	1,5
Coniglio	3,6	1,4	1,3	0,7
Uovo di gallina:				
- intero	11,3	3,6	5,8	1,3
- tuorlo	32,4	10,5	16,8	3,7
Latte di vacca:				
- intero	3,6	2,3	1,0	tracce
- parzialmente scremato	1,8	1,2	0,5	tracce
Yoghurt da latte intero	3,7	2,4	1,0	tracce
Yoghurt da latte magro	1,0	0,6	0,2	tracce
Bel Paese	26,0	16,0	7,6	1,0
Gorgonzola	26,1	16,1	7,7	1,0
Parmigiano reggiano	28,2	17,7	8,3	0,8
Mozzarella	22,0	13,6	6,5	0,8
Fior di latte	20,3	12,5	6,0	0,8
Dentice	3,6	1,1	1,3	1,1
Sogliola	1,7	0,5	0,6	0,5
Sgombro	11,1	3,3	4,1	3,3
Sardina	5,2	1,5	1,9	1,5
Tonno	4,2	1,2	1,5	1,2
Merluzzo	2,6	0,8	1,0	0,8
Mandorle secche	52,6	2,0	38,5	9,5
Noci secche	67,7	6,5	11,0	47,4
Cioccolato	32,0	18,8	12,6	0,6

Source:

[tabella2 (libero.it)]

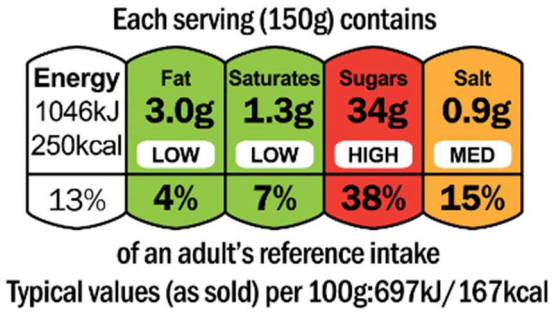
[30.06.2023]



Source:

8 cose da sapere sui grassi | Eufic

[30.06.2023]



Source:

The Stockout: Sugar and salt reduction a CPG focus for foreseeable future - FreightWaves

[30.06.2023]

This material was produced in the Erasmusplus project Numeracy in Practice, projectnumber 2021-1-NL01-KA220-ADU-000 026 292. In this project, 11 partners in 11 countries worked together in designing, evaluating and improving the materials. All materials can be found on the website (www.cenf.eu).