How can the animal production sector contribute…?

Vision from human Nutrition

Pr. Philippe LEGRAND

Dir. Laboratoire de Biochimie et Nutrition Humaine
Agrocampus - INRA, Rennes,
Expert ANSES

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Remaining Nutrition problems in humans :
Obesity, metabolic Syndrome, Cardiovascular diseases, Deficiencies

Animal products : not guilty

Consumer behaviour : guilty for amounts and responsible for choices

Specifically : animal products are sometimes demonized for LIPIDS richness

…….Let’s focus on lipids

Fatty acid intake in France
INCA 2 Study

		Mean consumption	Reco
		% energy exept forEPA and DHA : mg / jour)	
Lipids	Total Lipids	38.0 ± 5.7	35-40 %
oméga 3	α linolenic acid (ALA)	0.4 ± 0.2	1 %
	(DHA)	137 ± 139 mg	250 mg
	(EPA)	102 ± 111 mg	250 mg
omega 6	Linoleic acid (LA)	3.9 ± 1.7	4 %
	Arachidonic acid (ARA)	0.05 ± 0.03	No
Ratios	Ratio LA / ALA	9.6 ± 4.9	No but reference proposed by ANSES :< 5
	Ratio omega6 / omega 3	7.8 ± 4.0	pas d'ANC
oméga 9	Oleic acid	10.8 ± 2.8	15-20 %
Saturated	Total saturated	14.4 ± 3.0	≤ 12%
	lauric + myristic + palmitic	9.5 ± 2.0	≤ 8 %

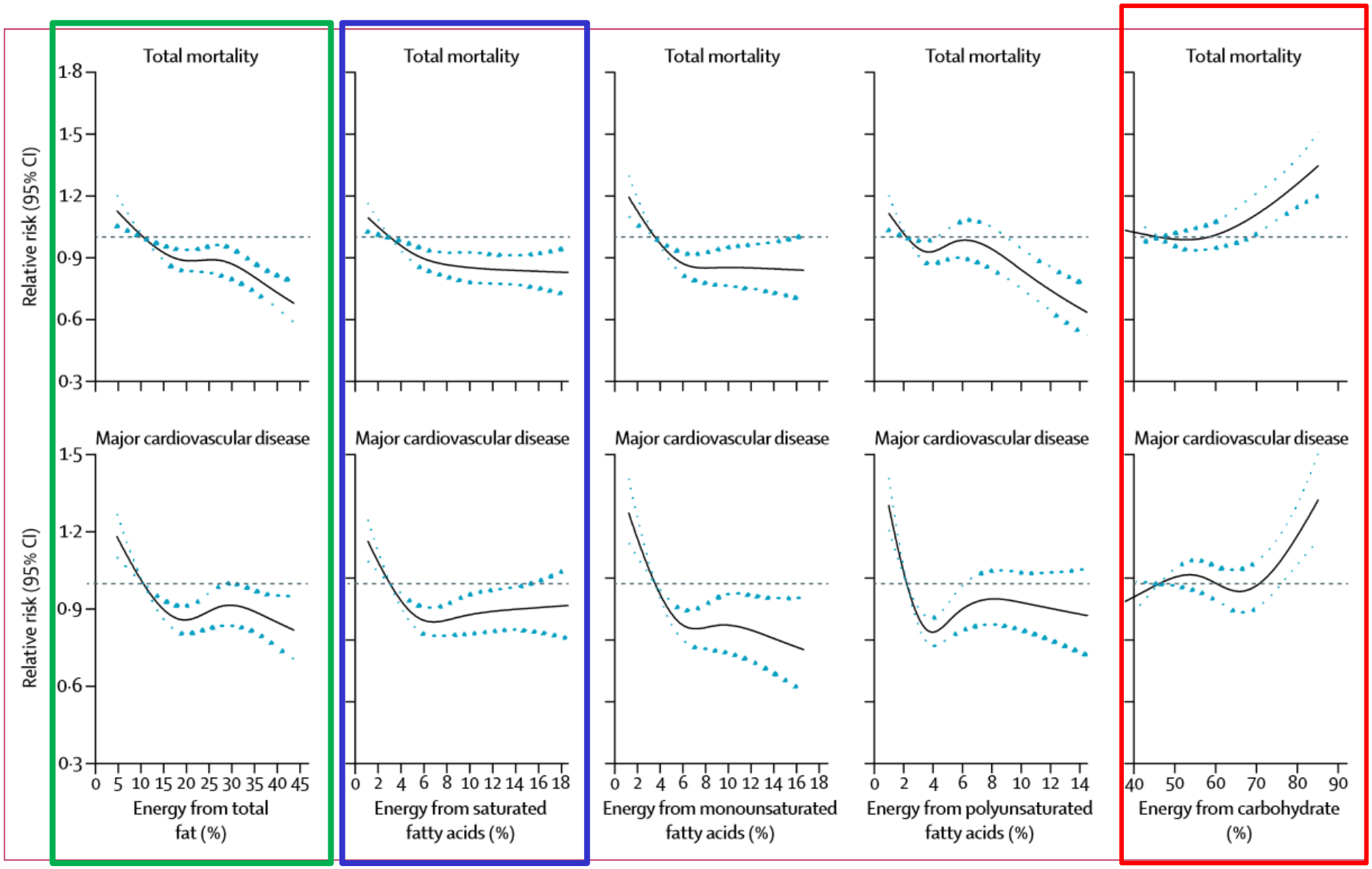
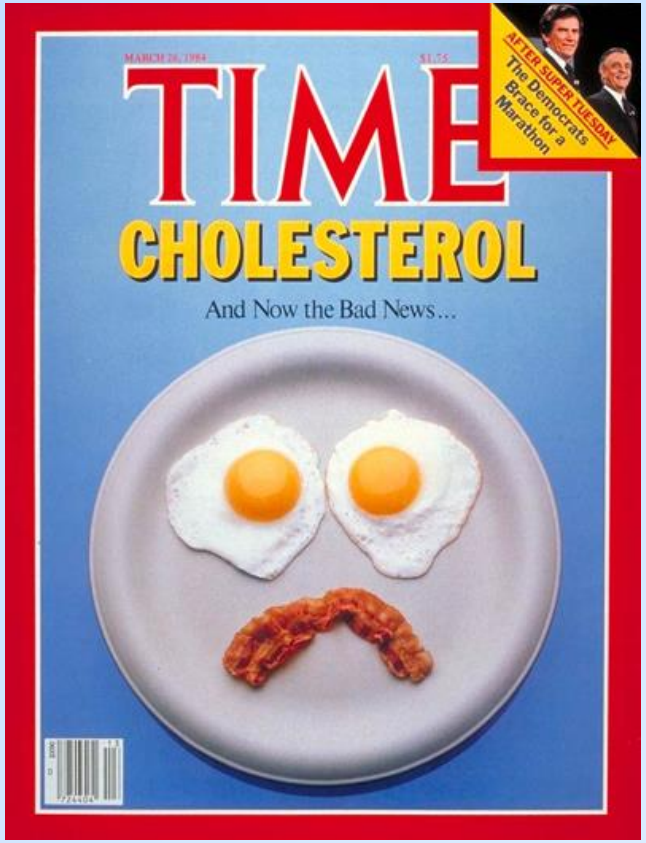


Figure 1: **Association between estimated percentage energy from nutrients and total mortality and major cardiovascular disease (n=135 335)**
Adjusted for age, sex, education, waist-to-hip ratio, smoking, physical activity, diabetes, urban or rural location, centre, geographical regions, and energy intake. Major cardiovascular disease=fatal cardiovascular disease+myocardial infarction+stroke+heart failure.

Deghan et al, 2017

Saturated Fatty Acids



1984

2014

Then | **Epidemiological studies (cohorts)**

Association between SFA and CVD risk :

⊕	⊖	Neutral
Garcia 1980	Gillman 1997	Shekelle 1981
Mc Gee 1984	He 2003	Kushi 1985
Esrey 1996	Mozzafarian 2004	Posner 1991
Boniface 2002	Jakobsen 2009	Ascherio 1996
Jakobsen 2004	Yamagashi 2009	Pietinen 1997
Xu 2006	Jakobsen 2010 (MI)	Tucke 2005
		Leosdottir 2007

- Meta-analysis (Siri-Tarino 2010) : 21 cohorts

”Overall, despite the conventional wisdom that reduced dietary saturated fat intake is beneficial for CVD health, there is no significant evidence for concluding that dietary saturated fat is associated with an increased risk of CHD or CVD”

- Other meta-analysis: O’Sullivan, 2013; Chowdhury, 2014; Harcomb, 2015, De Souza 2015

➡ ***same results***

- In CAD patients: Puaschitz et al., 2015 *No association either*

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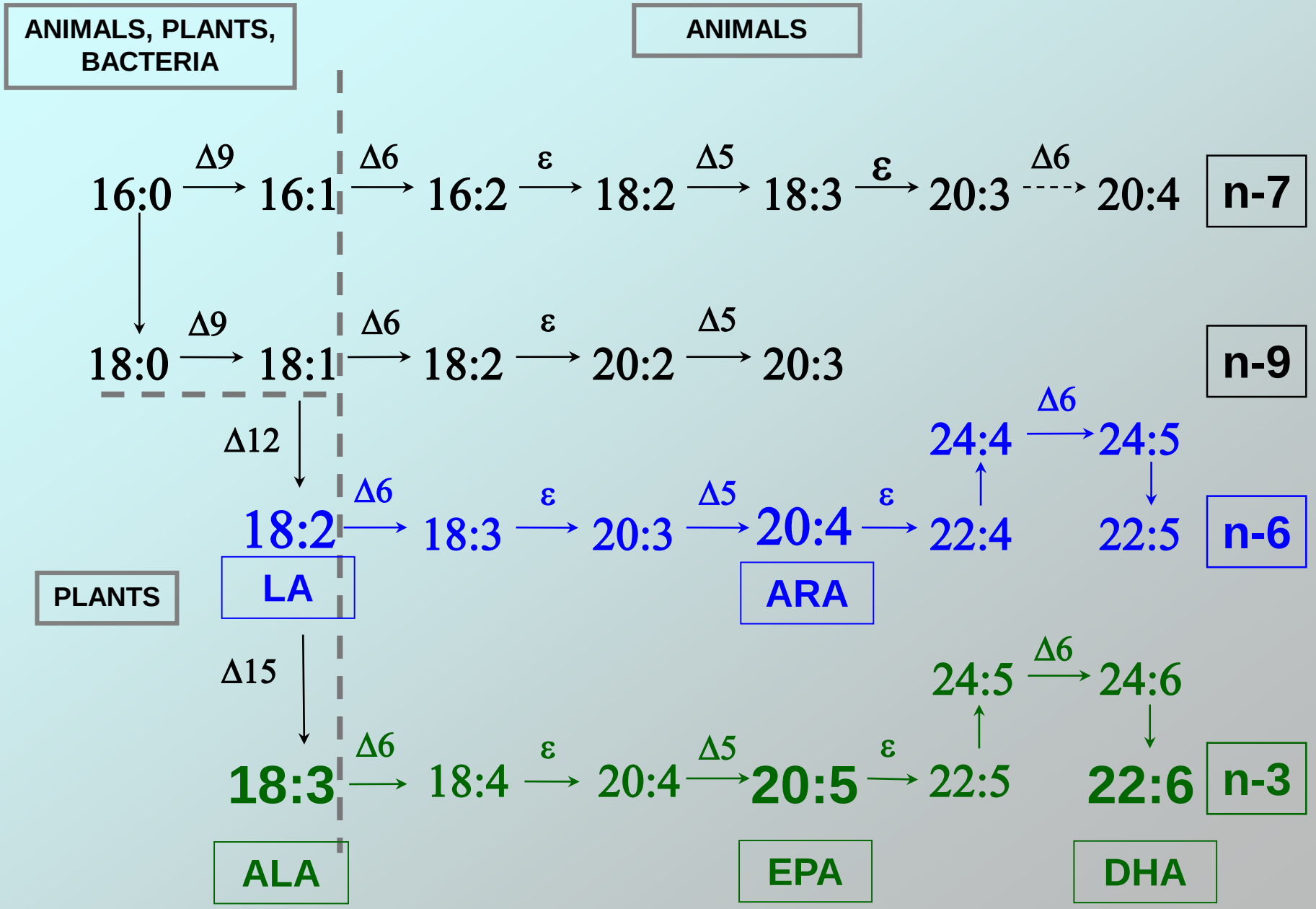
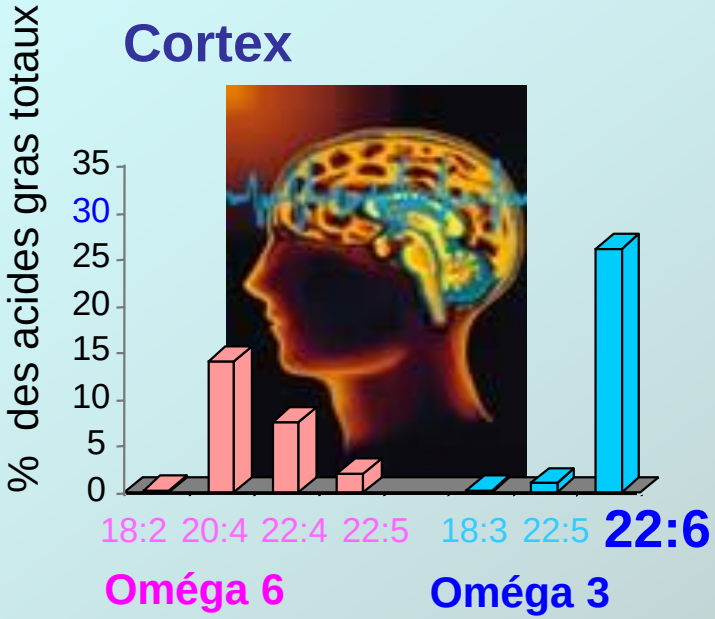
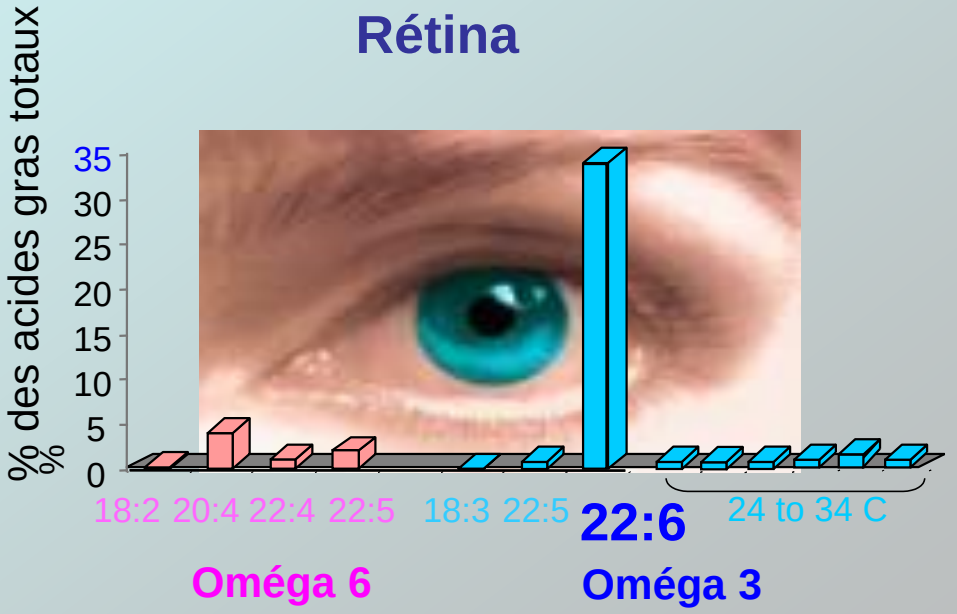
* 75% animal


ANIMALS, PLANTS, BACTERIA
ANIMALS
16:0
Δ9
16:1
Δ6
16:2
ε
18:2
Δ5
18:3
ε
20:3
Δ6
20:4
n-7
18:0
Δ9
18:1
Δ6
18:2
ε
20:2
Δ5
20:3
n-9
Δ12
24:4
Δ6
24:5
18:2
Δ6
18:3
ε
20:3
Δ5
20:4
ε
22:4
22:5
n-6
PLANTS
LA
ARA
Δ15
24:5
Δ6
24:6
18:3
Δ6
18:4
ε
20:4
Δ5
20:5
ε
22:5
22:6
n-3
ALA
EPA
DHA

OMEGA 3

And Central nervous system

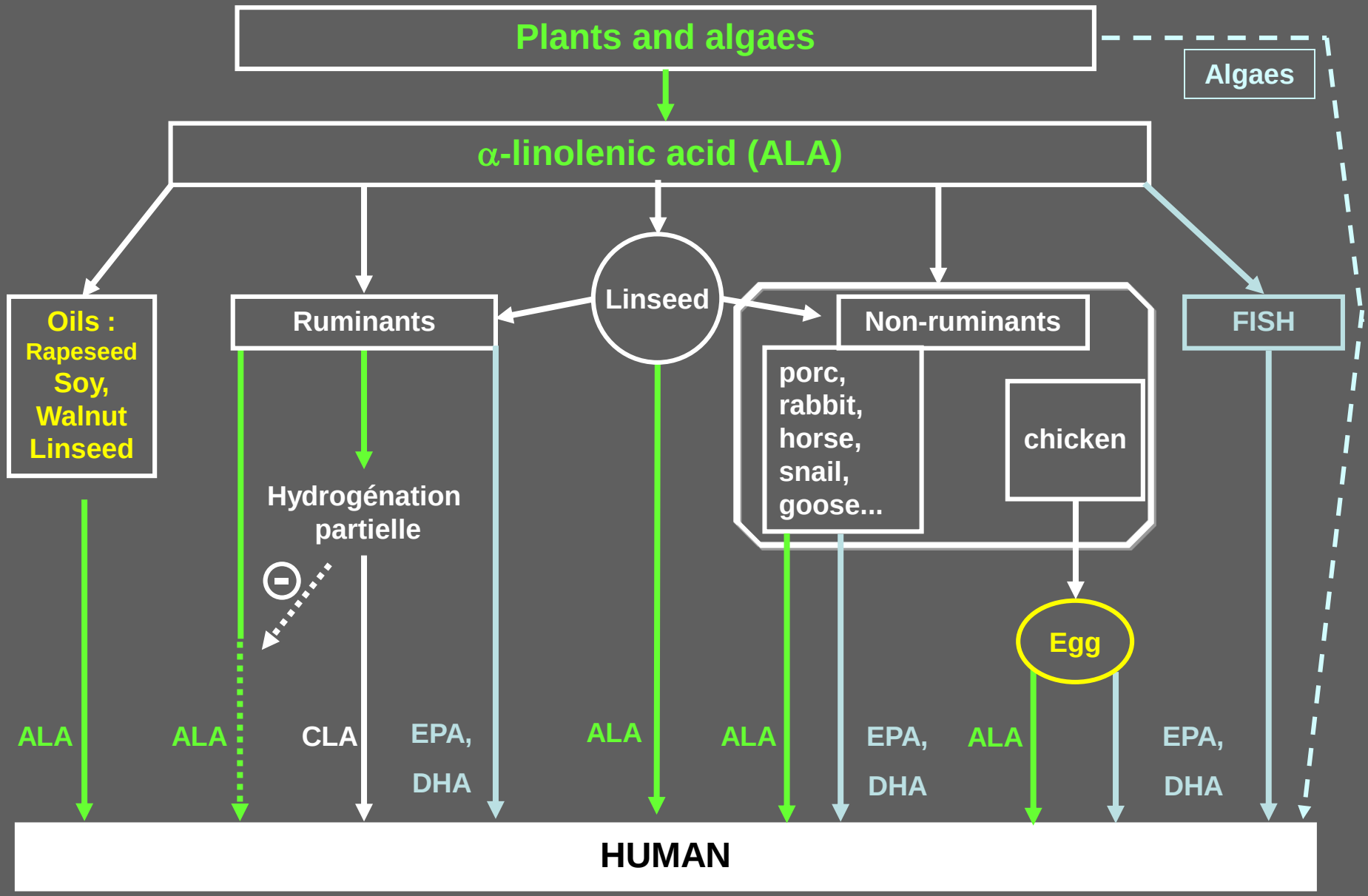




DHA, major and important component of Central nervous system

Cervonic acid

Guesnet, 2010



Omega-3 long chain derivatives : EPA, DHA

CONCLUSIONS and TAKEHOME MESSAGES

- We are omnivorous and there are not anymore problems in animal products composition. (whatever the consumers and medias perception)
- The balance of the diet comes from the menu : complementary and balanced addition of unbalanced foods (oils are fatty… etc.)
- Education is required to avoid both overconsumption and eviction
- Terrestrial animals could be a credible and good vector to provide omega 3 to humans (linseed, grass….)
- More taste in the plate tractability for products and welfare for animals
- Fatness of processed meat to improved ? Portions ?
- In the future, possible less total amounts for European countries and more for developing countries

Common errors in nutrition :

- Eviction or overconsumption

- Oppose plants to animals food