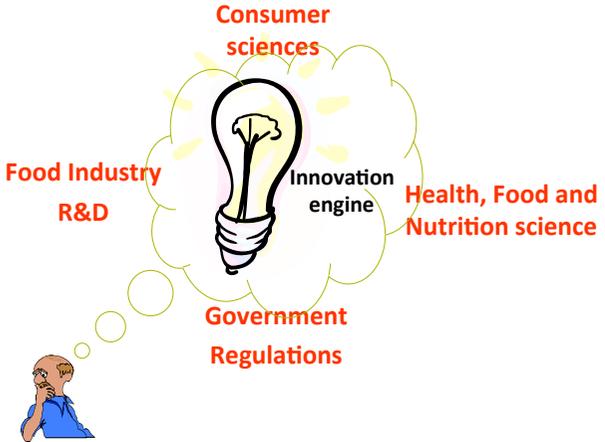


### Food industry and public health: food reformulation or consumer make-over?



**Hot spicy stuff**

Prof Dr Fred Brouns  
Chair "Health Food Innovation"  
Faculty of Health, Medicine and Life Sciences  
Dept of Human Biology  
Maastricht, Netherlands

**Consumer sciences**

**Food Industry R&D**

**Innovation engine**

**Health, Food and Nutrition science**

**Government Regulations**

Base for my success.



### Complex interrelationships



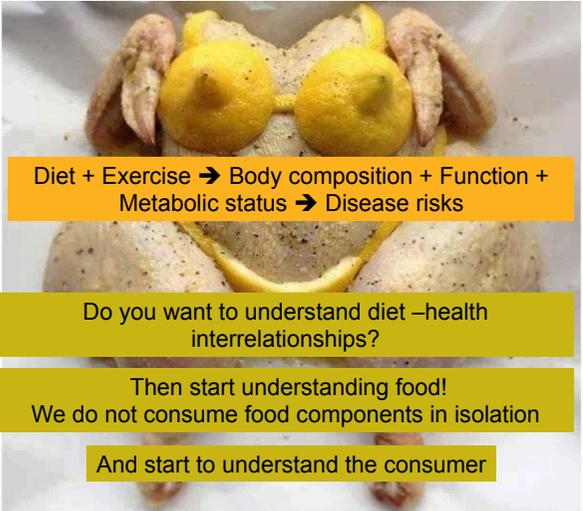
**Nutrition** Health, benefits, risks

**Consumer** Economy, succes, failure

**Business** Behavior, habits



Understanding the key elements of innovation and their interrelationships is a must to appreciate for business developers.

Diet + Exercise → Body composition + Function + Metabolic status → Disease risks

Do you want to understand diet –health interrelationships?

Then start understanding food!  
We do not consume food components in isolation

And start to understand the consumer



### Nutrition targets to impact on health

Less calories

Sugar reduction

Transfat reduction

More physical activity

**More**  
fruit, vegetable, whole grain, fiber, protein, water

Fat reduction

Salt reduction

Less TV viewing



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### Some developments to make food/beverage “healthier”....functional...

- Reduce/eliminate
- Restore/upgrade
- Enrich/fortify
- Substitute

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### Functional Foods/Drinks Design

*Elimination or reduction of*

less healthy components in drinks



Skimmed milk



*Upgrading*

of drinks with health promoting nutrients, natural to product



+ C and Calcium

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### Functional Foods/Drinks Design



**Enrichment**

Food/Beverage as carrier:  
fortified with nutrients, **not** natural to the product, but supporting specific health targets:  
eg. Plant sterols → reduce cholesterol

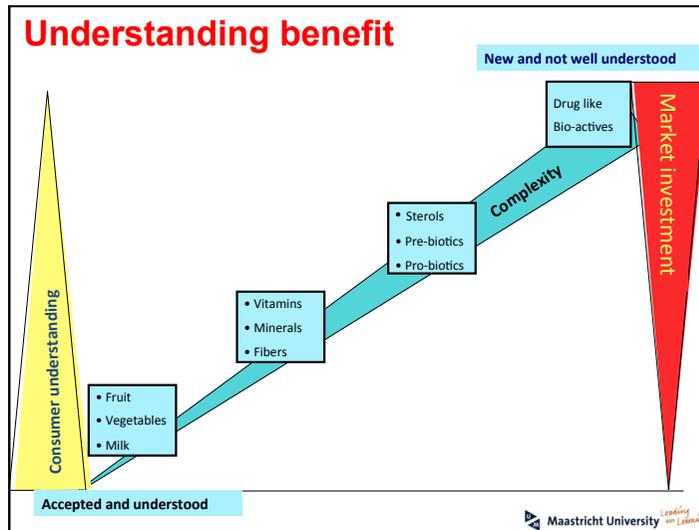


**Substitution**

Replace a substance in a product with a component that is more appropriate for supporting health in specific conditions: eg. Sugar out → stevia in



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### Hot and Spicy

- Marketers often run ahead of the science that is required to make substantiated benefit claims.
- Public lawsuits have lead to significant settlements with companies that were blamed to make claims that were not supported by solid science.
- This and cases of food fraud have lead to consumer distrust
- The internet has become a platform where anyone can put anything in the media that disrupts sound scientific opinion and potentially damages businesses.

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### Hot and Spicy...

- Screems in the social media about fructose, added sugar, gluten & wheat toxicity, cancerous meat, etc impact sign. on businesses and are clear examples of social media driving success or failure.
- Truthfull and evidence based communication of ingredient and food benefits, in simple words, has become a prime target for food companies, ahead of sales.

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### Hot or Spicy...

- *Despite* many years of research, only few real success examples have been realized in terms of general health benefits that can be realized by using specific food components.
- New insights may drive the development of more personalized nutritional advise
- Understanding the role of food in human metabolism, in human behavior and in social interaction processes appear to be much more complex than ever thought before.

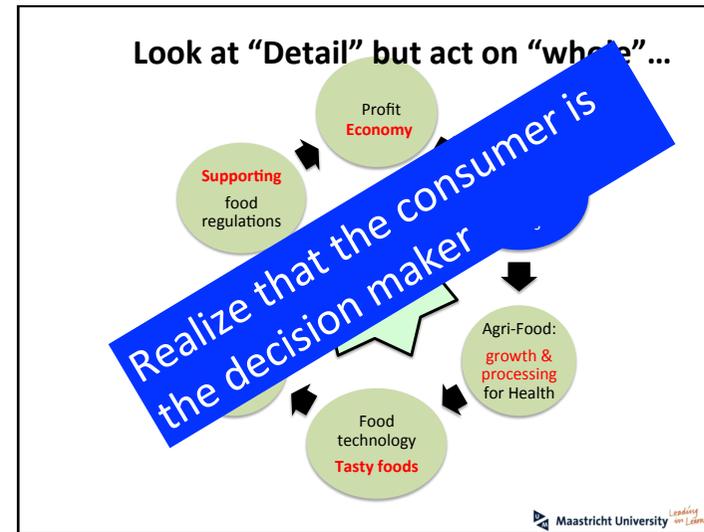
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To promote healthy eating we supply nutrition guidelines , explain calories "in and out" , etc

**BUT none of this seems to work well.**  
It is all about:  
- Price and budget  
- Attractive taste  
- Quick and convenient- effortless consumption



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### Food consumption

- Is all about;
  - TASTE
  - AVAILABILITY
  - AFFORDABILITY



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### Imagine....



Alone on an island



Only coconuts to eat!  
What would you eat...?  
Without whole coconut we will not survive

**Imagine....  
only tasty whole grain available...!**



What would you eat in that situation?  
Of course Whole grain!

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**Consumers buy “on belief”  
Marketing managers “buy and sell belief”**

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**12 Key Trends in Food, Nutrition & Health  
2014**

new **nutrition** business



[new-nutrition.com/nnbOutput/downloadFile/4013](http://new-nutrition.com/nnbOutput/downloadFile/4013)

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**What shapes consumers minds?**

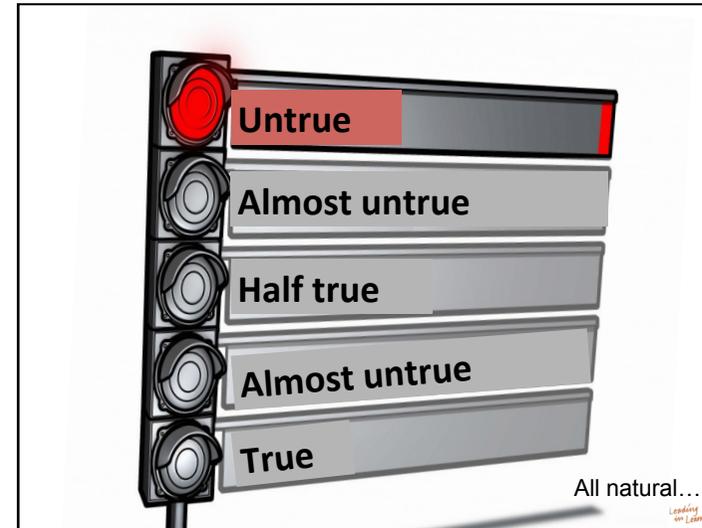
- Frequent food frauds...
- Lacking governmental control/actions...
- Food regulations allowing too much...
- Scientific battles/debates, there is NO ONE truth....
- Ever changing nutrition recommendations..
- The food industry makes me sick...
- General distrust: “who serves ME ?”

→ I will find my personal fitting TRUTH on the www.

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## What can we learn from this

- Understand the consumer → understand emotions and social media
- Understand diet culture before focusing on a particular food
- Understand food before focusing on a particular ingredient!
- Most failures in NPD are due to NOT understanding “the business from consumers mind perspective”..



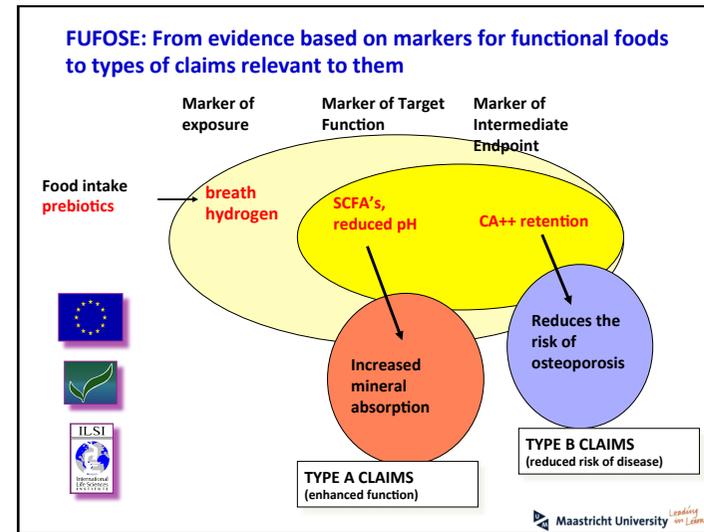
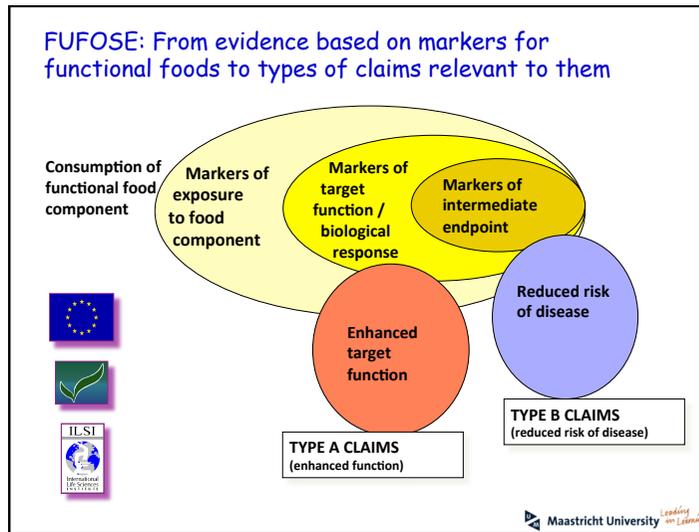
## Maybe not entirely true .... but still “within the law ”

- Companies launch products in developing countries with claims that are not allowed in Western countries for lack of evidence
- In the EU one can, based on sanctions, ONLY communicate health/benefit claims that have been approved by EFSA, based on a dossier of convincing evidence
- However, without having any evidence individuals often make untrue statements about a food product in the social media, without getting sanctioned, YET causing potential damage to individuals and/or business

**This seems all possible ....  
BUT, do we really want that.....?  
Do we feel that is acceptable....?**

## 3 levels of evidence:

- a cause and effect **has been established**
- a cause and effect **has not been established**
- **Insufficient evidence** for cause and effect ....



### Generic or Specific ?

- Recently the European Food Safety Agency (EFSA) rejected a generic dietary fiber claim and a generic whole grain claim.
- Reasoning: there are too large differences between fibers and cereal types to allow for such a claim.
- Few claims were allowed for specific fiber types such as oat- and barley beta-glucan and pectin.

**Not all dogs are friendly and most bark differently!**



### We consume foods, not single ingredients!

- Foods are perceived healthy or unhealthy based on *what is or is not* contained.
- This opens the door for removal or enrichment of desired substances.
- Often, healthiness is attributed to substances based on observational- Epi data, which however, only show a relation and no causality
- The average consumer does not understand anything of this....

### Taking corporate responsibility to help create a healthier world includes:

Realizing that low budget families are most prone to developing overweight and obesity

Accepting that these need to buy low budget foods and beverages which **ARE NOT** fresh whole foods, vegetables, **BUT** mainly low cost highly processed foods rich in sugars and fat.

Accepting the fact that they buy what is available for low price and that they **WILL** buy healthier alternatives when available for low price



### Taking corporate responsibility to help create a healthier world includes:

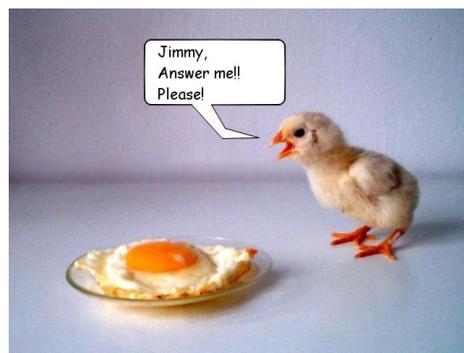
**START** realizing that market availability (that is what you create!) induces purchase pull!

**START** realizing that there is **NO** good reason why regular soft drinks should contain such high sugars levels (>100g / liter)

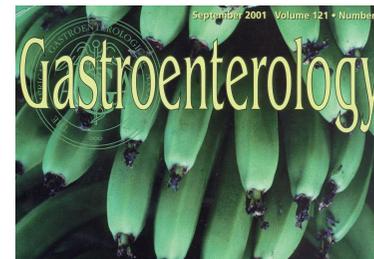
**STOP** thinking that it is only consumers choice that matters in the obesity epidemic

There is an international consensus about the need to reduce the amount of added sugar and fat in food and beverage to lower levels!

### Any questions? Ask me!



### Antidiarrheal effect of banana resistant starch



Green bananas for persistent diarrhea in Bangladeshi children  
Gastroenterology 2001;121:554-560

Amylase resistant starch plus oral rehydration solution for cholera  
N Engl J Med 2000;342:308-313