

# Organic food consumption and health impacts in the French NutriNet-Santé cohort



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The **NutriNet-Santé cohort, 2009** → :To investigate the relationships between **Nutrition** (*nutrients, foods, dietary patterns, physical activity, nutritional status*) and **Health outcomes**.

- ✦ A web-based prospective study - Follow-up : > 10 years
- ✦ Volunteers aged  $\geq 18$  years : (**about 180 000**)
- ✦ Dedicated secure HTML interface for web-based questionnaires ([www.etude-nutrinet-sante.fr](http://www.etude-nutrinet-sante.fr))
- ✦ Biochemical samples and clinical examination in a subsample (> **20 000** subjects for blood and urine)
- ✦ Record of health events during the follow-up. [e.kesse@eren.smbh.univ-paris13.fr](mailto:e.kesse@eren.smbh.univ-paris13.fr)

# The **Bionutrinet project** within the French NutriNet-Santé cohort

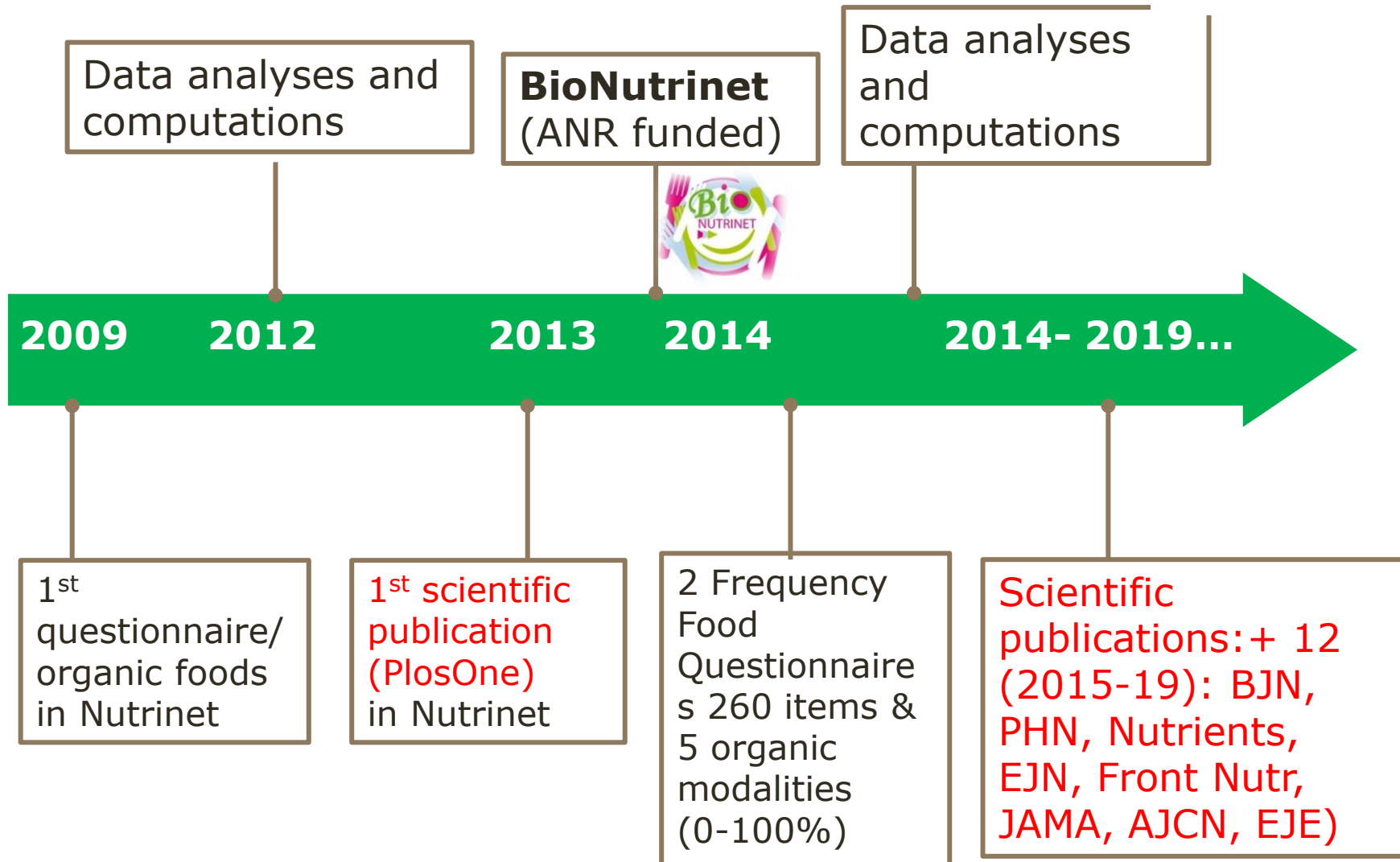


To describe **organic food consumers** (motivations, life style, socio-economics, food consumption, quality and nutrients intakes, and investigate the **relationships** with food contamination and pesticide exposure, impacts on resources (land, energy use) and environment (GHGEs), food pattern cost and **health outcomes**.

- A first descriptive approach based on consumption frequency of 16 organic food groups (never, occasionally, most frequently)
- Development of the Organic-FFQ : consumption while accounting for source of foods (=farming practice) : 264 food items  
5 modalities for organic frequencies (always, often, ½ time, rarely, never)  
Use of % : 100, 75, 50, 25, 0 to estimate organic food consumption  
Statistical and Sensitivity analyses.

*14 scientific publications (2013-2019)*

# RESEARCH ON FRENCH ORGANIC CONSUMERS



# Organic diet consumers

Data from the NutriNet-Santé study

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## **Lifestyle** (n= 28 400-53 400)

- Higher education level, higher physical activity, less smoking
- Less very low incomes

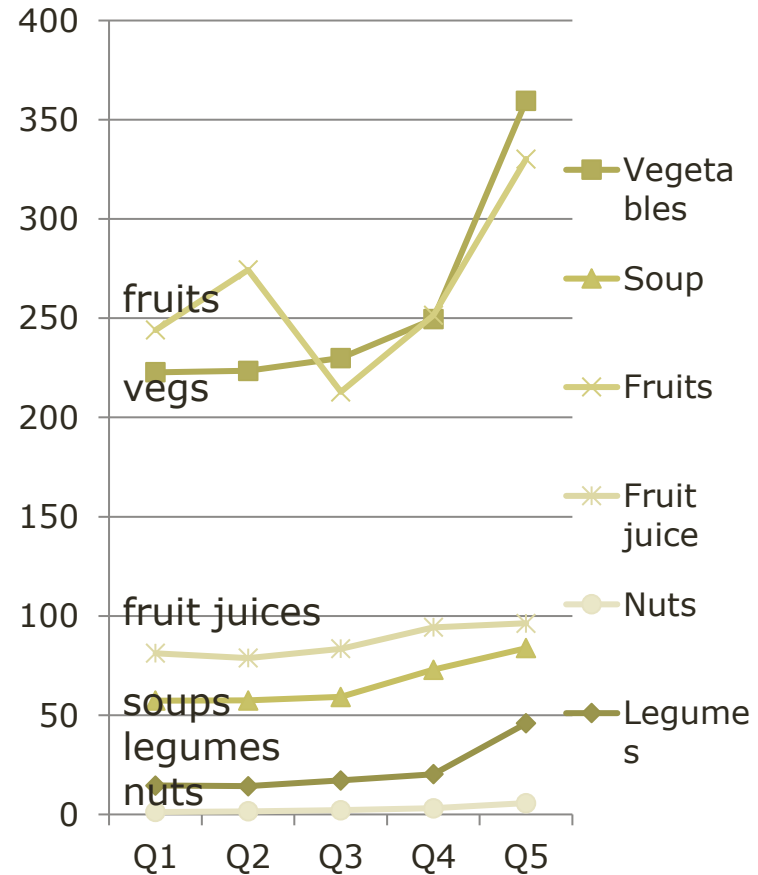
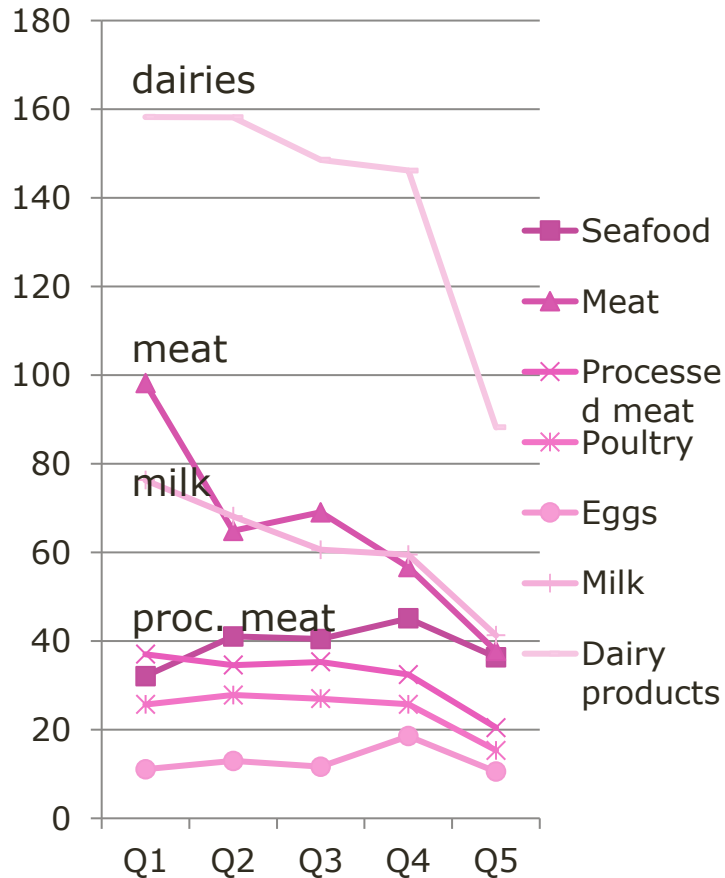
## **Dietary intakes** (n= 28 400-53 400) :

- Intakes of all foods of plant origin increased with the contribution of organic foods to the diet while a reverse trend was identified for meat and dairy products, cookies and soda.  
-> Organic consumers have a plant-based diet.

**The diet quality scores significantly increased with organic food consumption (mPNNS-GS, PANDiet/RDI)**

*PlosOne, 2013; Public Health Nutr, 2016*

# Organic diet (n= 28 400)



No org.

App. 70% org.

## Nutrient intakes (n= 53 400)

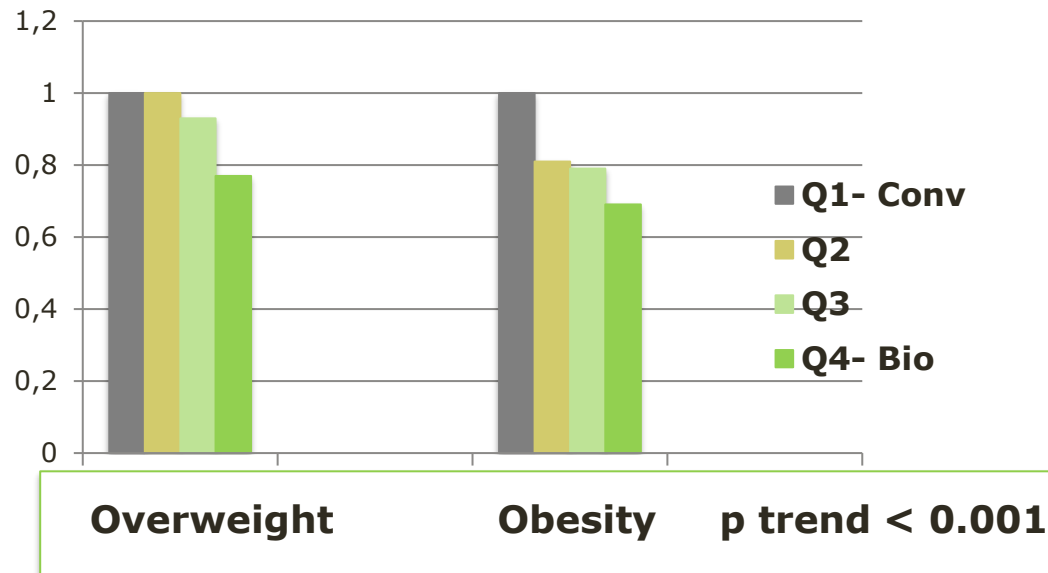
Daily intakes of most important nutrients and fibres are sig. higher with the highest organic food consumption

**-> Organic consumers have a better/healthier diet.**

# Organic diet and obesity development (n= 62 200)



**After a 3.1 y mean follow-up,  
the highest level of organic food consumption (mean 70 %)  
reduces overweight by 23 % and obesity by 31 % (both genders)**  
(after adjustments on confounders)  
(Kesse-Guyot E,..., & Lairon D; Br J Nutr, 2017),

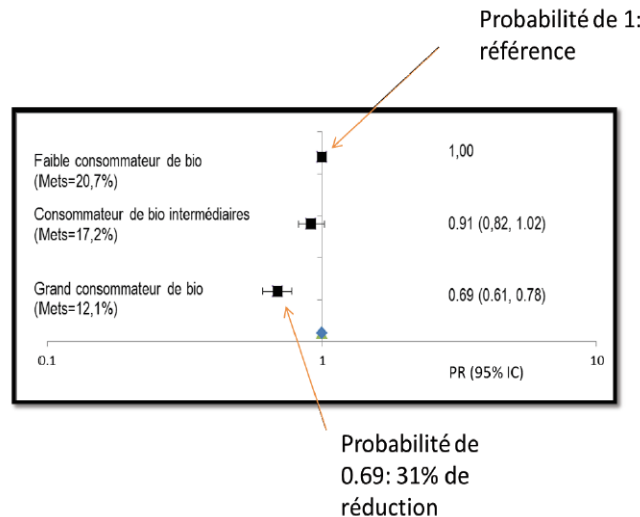


**This study supports a strong protective effect  
of consumption of organic foods  
on the risk of developing overweight and obesity**

# Organic diet and metabolic syndrome (n= 8 174)



The highest consumption of organic foods (mean 62%) is sig. associated with a marked reduction (- 31 % of risk of **metabolic syndrome** (freq. 12.1% vs 20.7%) (a main CVD risk factor associating obesity, hypertension, and disregulation of glucose and lipid metabolism) **in both genders.** (Baudry, ..., Kesse-Guyot; *Eur J Nutr* 2017)

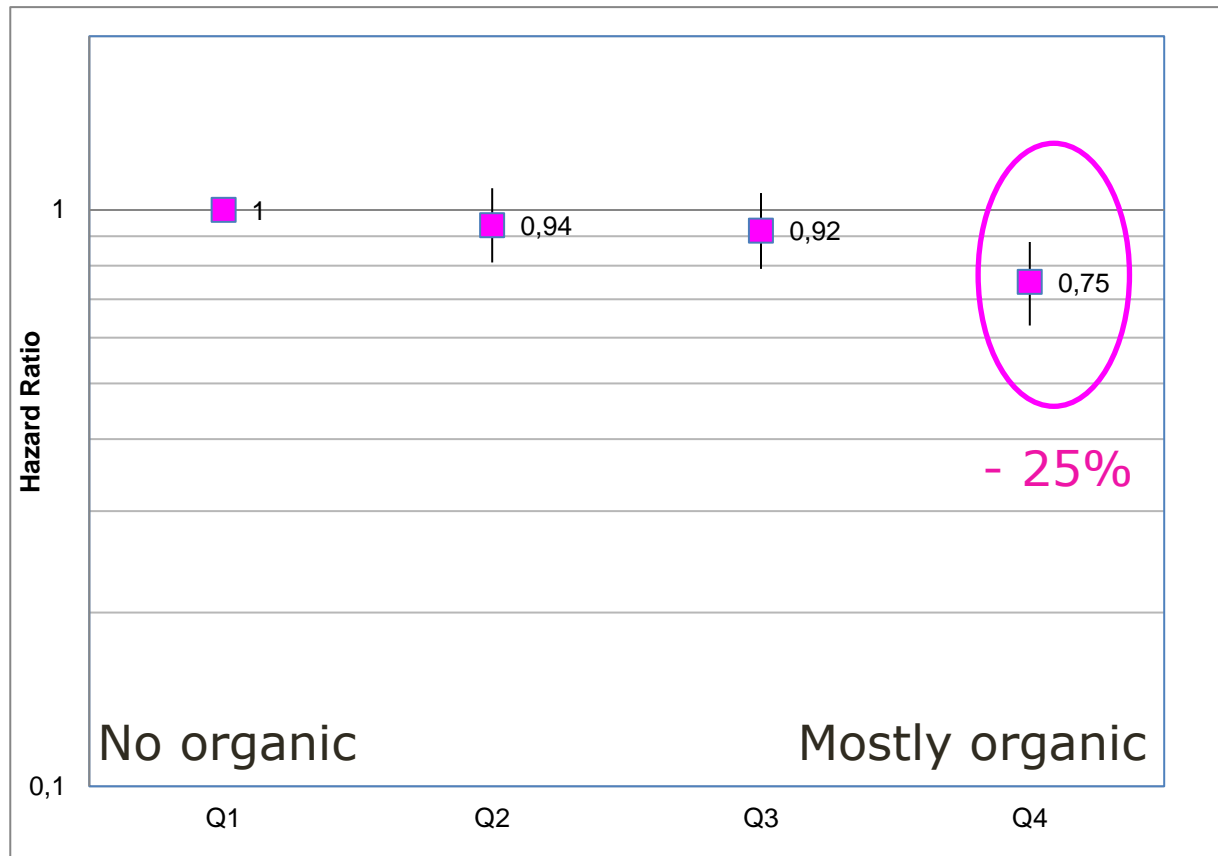


**This study supports a strong protective effect of consumption for organic food on the risk of developing cardio-vascular risks**

# Bionutrinet: all cancers rates



Results : Q4 (mostly organic) versus Q1 (no organic)  
n= 70 192; 78% women, age m = 44 y; follow-up 4,6 y



P-trend=0,001

Models adjusted on sociodemographics, life style, dietary intakes, etc.

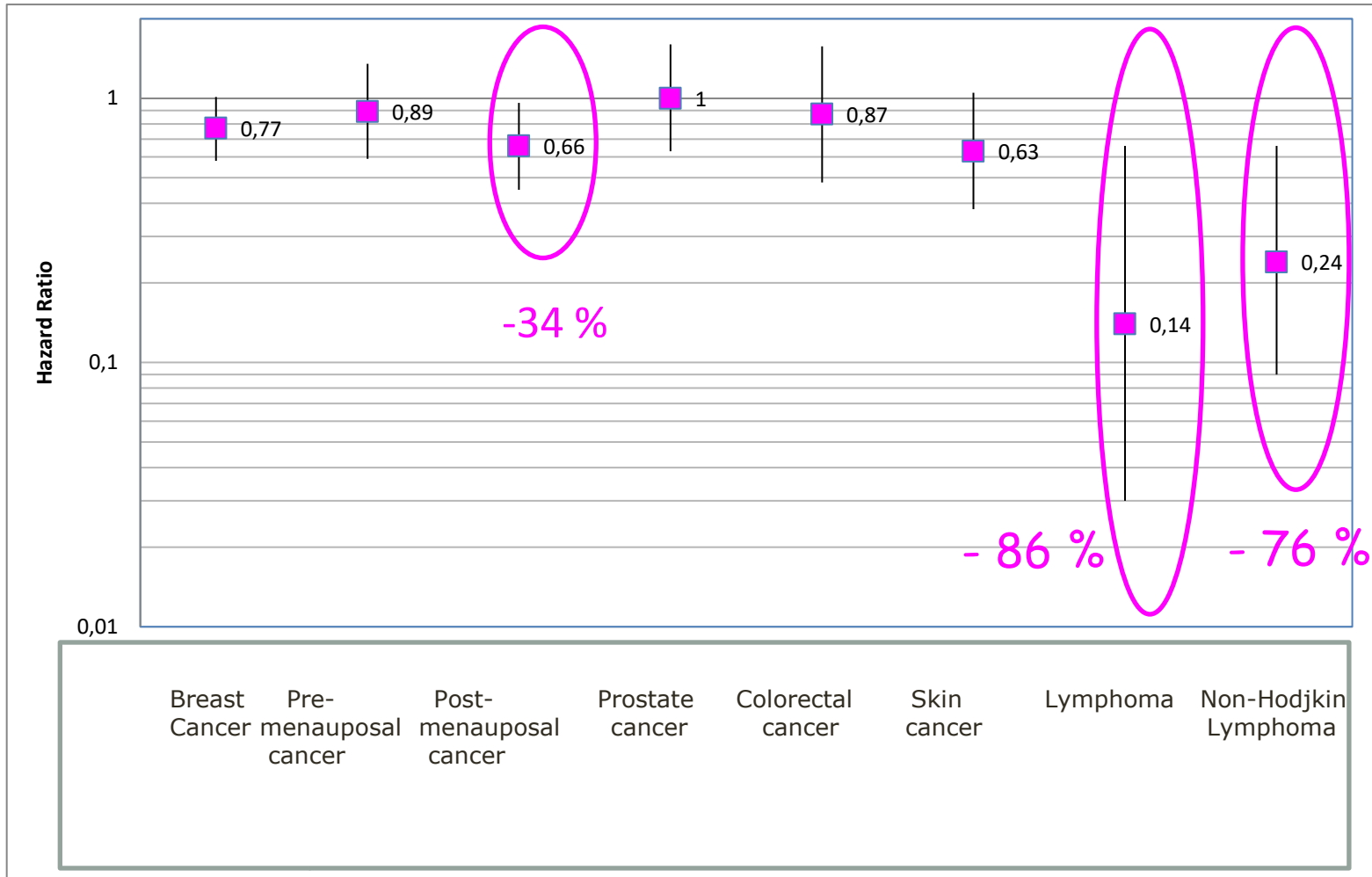
Baudry et al., 2018, JAMA Int Med

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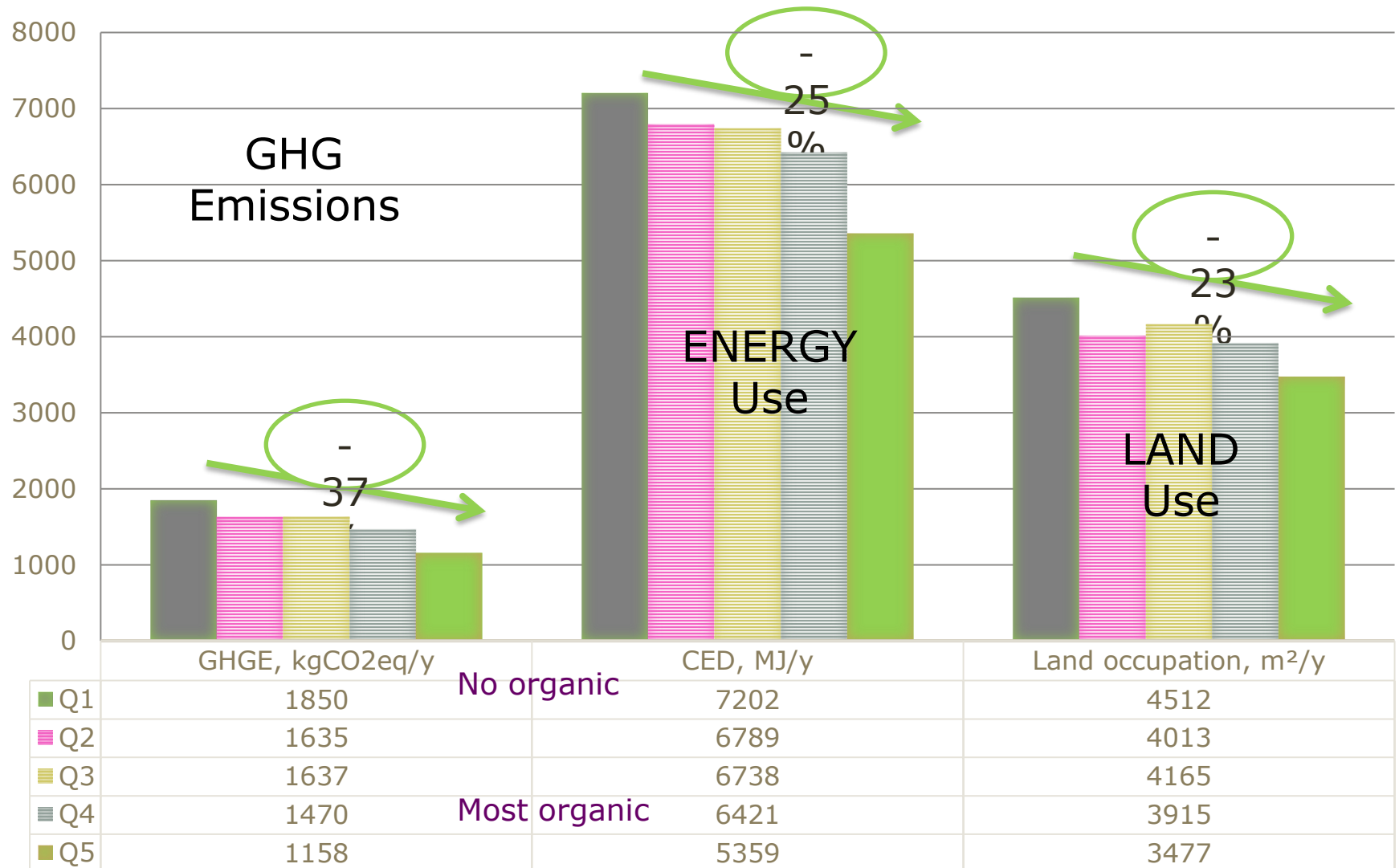
# Bionutrinet- Cancer types

Results : Q4 (mostly organic) versus Q1 (no organic) by types)  
n= 70 192; 78% women, age m = 44 y; follow-up 4,6 y



# Organic diet and Environnement (n= 28 245)

## Diet impacts : data at food production level



# Organic food consumption : 2018-19 Conclusions

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## Regular consumers of organic products exhibit :

- specific socio-demographic characteristics (higher education level, more physical activity, less smoking; less low income)
- with a healthier dietary pattern (more plant food-based) and closer to the healthy Mediterranean diet model,
- better fitting food-based and nutritional recommendations
- they are markedly less overweight and obese (men & women) and have a significantly reduced probability of cardiovascular risk (MetS) and cancers.
- they consume much less pesticides-contaminated foods, have significantly less pesticide residues in urines, and have less impact on natural resources and GHEs.



**Thus, they show a better compliance with the sustainable diet concept (cf FAO definition, 2010).**