Associations between food environment around home and overweight and obesity rates in French adults

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Unité Mixte de Recherche
MOISA
Marchés Organisations
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UMR INNOVATION

Research project 2017-2020
Surfood
FOODSCAPES

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Montpellier SupAgro

UNESCO
uniTwin
Organisation des Nations Unies pour l'éducation, la science et la culture
Chaire UNESCO en alimentations du monde France

agropolis fondation

https://www.foodscapes.fr/en

- **Increase in prevalence of overweight and obesity**

- **Drivers of dietary behaviours** & levers to promote healthier diet

- **Foodscape :** all places (shops, markets, restaurants, gardens…) that provide food supplies for residents in a given area (neighbourhood, city, etc.)
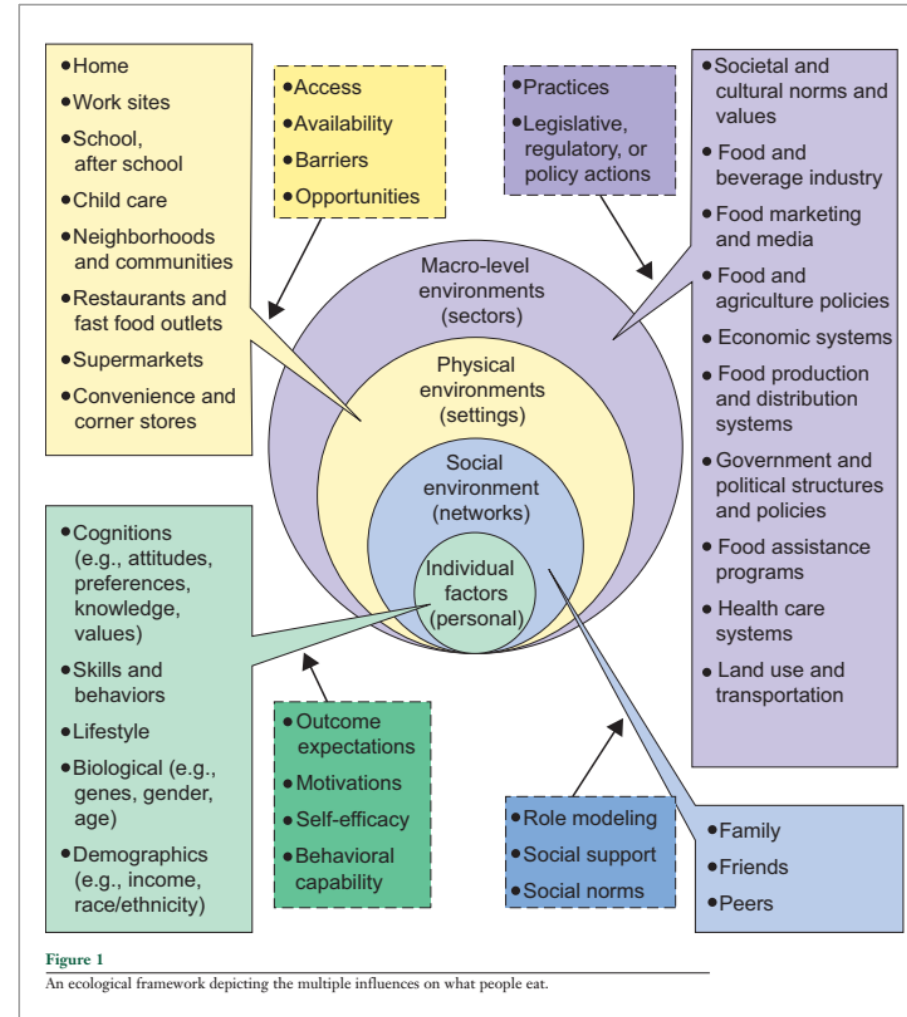
In the WHO/European Region

over 50% of people are **overweight** or **obese**

over 20% of people are **obese**

www.euro.who.int/obesity
© WHO 07/2013

World Health Organization
Europe

OBJECTIVE :

to assess the associations between foodscape exposure at the individual level, socioeconomic status and overweight and obesity rates in the area of Montpellier, France

Figure 1
An ecological framework depicting the multiple influences on what people eat.

Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating Healthy Food and Eating Environments: Policy and Environmental Approaches. *Annu Rev Public Health*. 2008;29(1):253-272. doi:10.1146/annurev.publhealth.29.020907.090926

Methods

- **Cross-sectional survey** : 652 adults in the area of Montpellier (43 communes), France

  ⇨ Weight & height

  ⇨ Demographic and socioeconomic characteristics

  ⇨ Home adresses

- **Foodscape mapping** (GIS) : Insee SIRENE database

Data

https://www.etude-montpanier.com/

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Indicators

- **BMI and weight status** (WHO classification)
- **Exposure to food outlets** within 5min and 15min walking-distance around home :

⇨ Relative density of fastfoods restaurants

⇨ Presence of :
- supermarkets
- grocery stores
- markets
- greengrocers
- specialized food outlets

BMI	Weight status
<18.5 kg/m²	Underweight
18.5-24.9 kg/m²	Normal weight
25.0-29.9 kg/m²	Overweight
≥30 kg/m²	Obesity

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Statistical analyses

- **Associations between food exposure indicators and weight status**
  - ➥ Mixed models adjusted on age, gender, level of income and education, with IRIS unit of residence as random effect

Socio-economic characteristics :
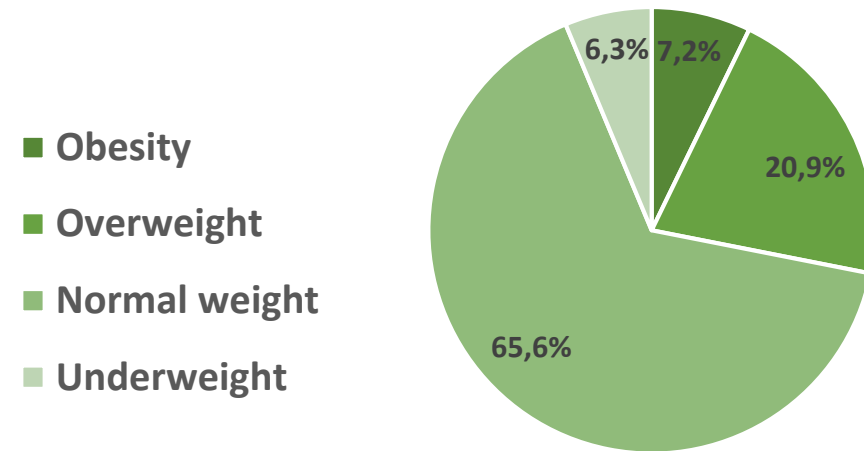
n=652 adults

Age (mean ± SD)	42.5 ± 16.1
Age (%)	
<30y	25,8
30-50y	42,5
>50y	31,7
Sexe	
Women	76,1
Men	23,9
Household income per CU	
Quartile 1	29,9
Quartile 2	27,3
Quartile 3	23,5
Quartile 4	19,3

Weight status:

- ■ **Obesity**
- ■ **Overweight**
- ■ **Normal weight**
- ■ **Underweight**
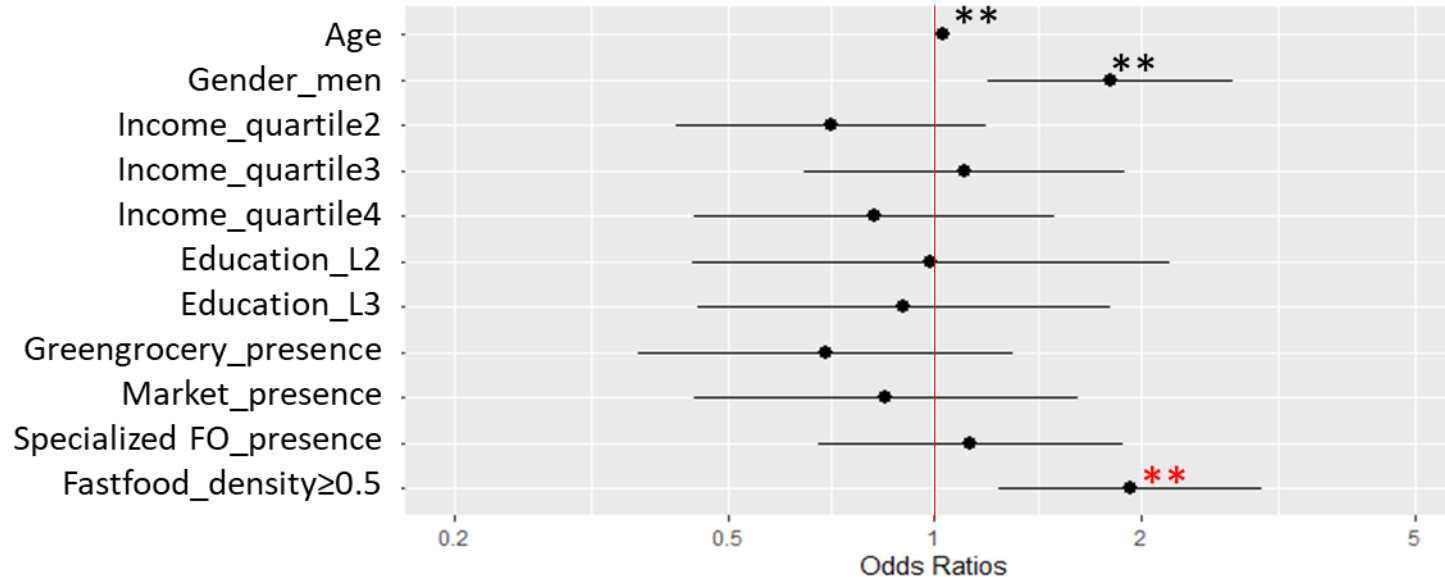
Pie chart values: 7,2% ; 20,9% ; 65,6% ; 6,3%

28,1% of overweight (including obesity)

Results

An increased **density of fast-food outlets within 15min around home** was significantly associated with **a higher risk of overweight (including obesity)**

Odds-ratio for overweight (including obesity) according to food outlets exposure and socioeconomic status

*p<0.05 ; **p<0.01 ; mixed model adjusted on age, gender, level of income and eduction, IRIS unit of residence

	OR	IC95	p.value
Age	1.03	1.02 - 1.04	<0.001 **
Gender			
Women	ref		
Men	1.81	1.20 - 2.73	0.005 **
Household income per CU			
Q1	ref		
Q2	0.71	0.42 - 1.19	0.194
Q3	1.11	0.65 - 1.90	0.709
Q4	0.82	0.45 - 1.50	0.517
Education			
High school or less	ref		
Baccalaureate level	0.99	0.44 - 2.20	0.977
College graduates or higher	0.90	0.45 - 1.80	0.771
Greengrocery within 5min around home			
Absence	ref		
Presence	0.69	0.37 - 1.30	0.254
Market within 5min around home			
Absence	ref		
Presence	0.85	0.45 - 1.61	0.620
Specialized FO within 5min around home			
Absence	ref		
Presence	1.13	0.68 - 1.88	0.639
Fastfoods relative density within 15min around home			
<0,5	ref		
≥0,5	1.93	1.24 - 3.01	0.003 **

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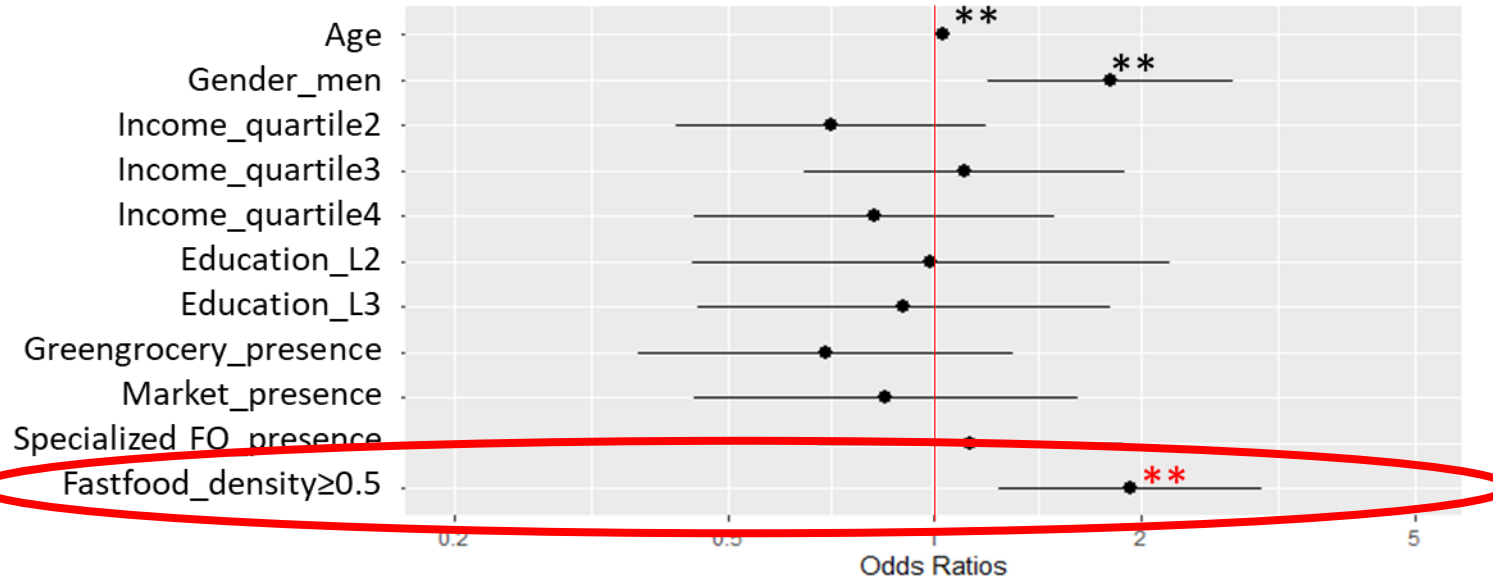Odds-ratio for overweight (including obesity) according to food outlets exposure and socioeconomic status
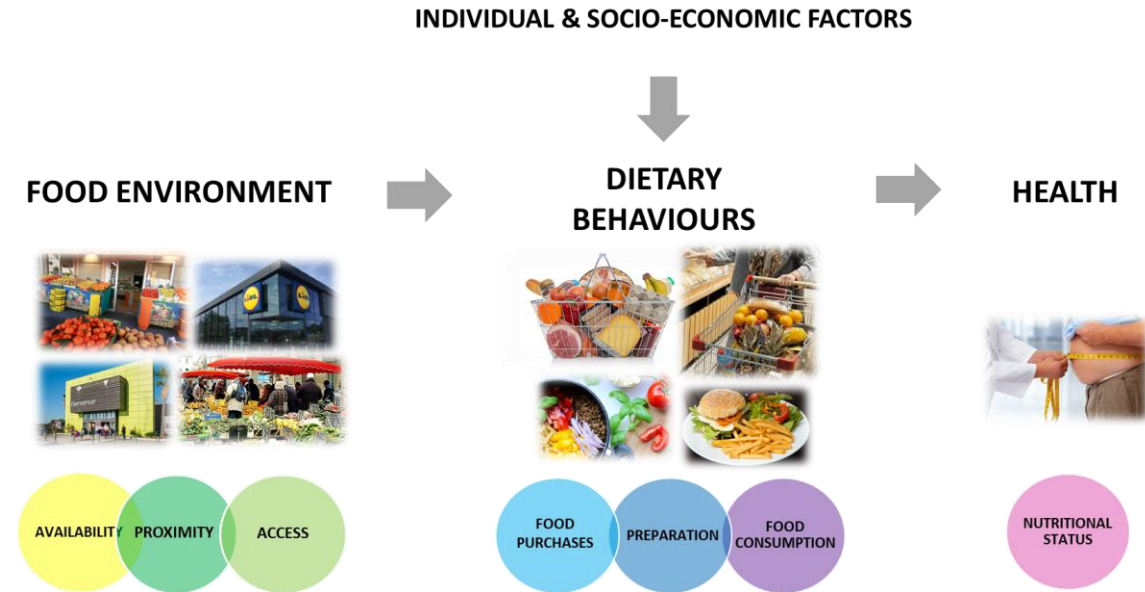

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Conclusion & Perspectives

- This study showed that **disparities in food environment around home can be associated with higher risk of overweight and obesity**

- **Food environment around home + places of activity** (work, school, …)

- **Relations between food environment and dietary behaviours** (quality of food purchases)

INDIVIDUAL & SOCIO-ECONOMIC FACTORS

FOOD ENVIRONMENT → DIETARY BEHAVIOURS → HEALTH

AVAILABILITY PROXIMITY ACCESS

FOOD PURCHASES PREPARATION FOOD CONSUMPTION

NUTRITIONAL STATUS

⇒ Contribute to **reflections on urban planning** strategies to **promote environments favouring healthy diet and nutrition security**

4th International Conference on
GLOBAL FOOD SECURITY
ONLINE LIVE AND ON-DEMAND
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Abstract no.: SECU2020_0876

Session O5. Influencing food consumption and demand considering the food environment

Thank you for your attention

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