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Inégalités sociales dans l'alimentation

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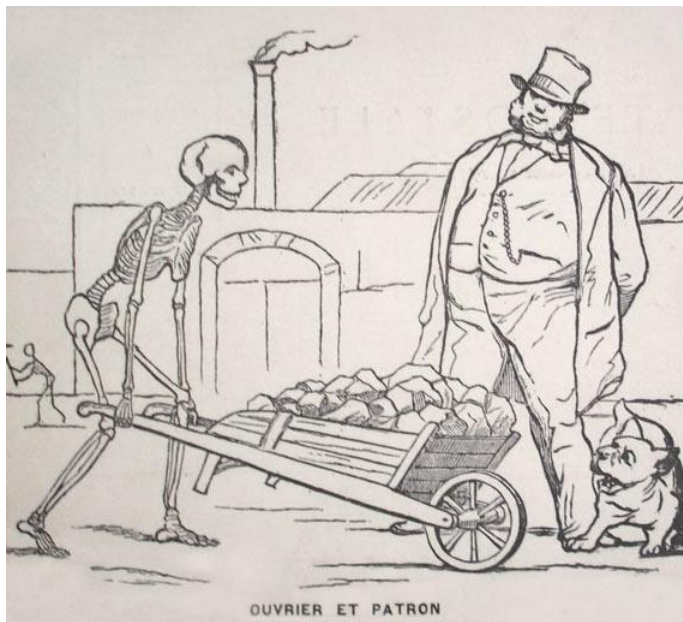
CoLaus

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Ouvrier et patron

1903



Présentation

Alimentation et niveau social: quelle(s) métrique(s)?

Inégalités sociales dans

- Ingestion alimentaire (aliments et nutriments)
- Suivi des recommandations alimentaires
- Accès à une alimentation équilibrée / saine

Conclusion

Alimentation et niveau social: quelle(s) métrique(s)?

Education

Employé / chômeur

Type de travail

Revenus

Aides sociales (AVS)

Nationalité

Statut matrimonial

Environnement

Réseau social

...

Alimentation et niveau social: quelle(s) métrique(s)?

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Aliments

Nutriments

Contaminants

« omics »

Diversité alimentaire

Scores alimentaires

Suivi des recommandations

Nombre de repas

Accès à l'alimentation

Maladies par malnutrition

Alimentation et niveau social: quelle(s) métrique(s)?

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« omics »

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Suivi des recommandations

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Accès à l'alimentation

Maladies par malnutrition

Nutriments selon niveau d'éducation, Genève

	Men				Women			
Educational level	Low	Medium	High	<i>p-value</i>	Low	Medium	High	<i>p-value</i>
TEI (kcal/d)	2153 ± 27	2129 ± 32	2102 ± 23	0.42	1705 ± 25	1725 ± 22	1759 ± 20	0.26
Macronutrients (g/d)								
Total proteins	82.0 ± 0.7	82.0 ± 0.8	82.8 ± 0.6	0.67	68.6 ± 0.7	68.5 ± 0.6	67.4 ± 0.5	0.32
Animal protein	57.5 ± 0.8	57.3 ± 0.9	57.8 ± 0.7	0.89	47.9 ± 0.7	47.6 ± 0.7	45.8 ± 0.6	0.07
Vegetal protein	24.5 ± 0.3	24.7 ± 0.3	25.0 ± 0.2	0.52	20.7 ± 0.2	20.9 ± 0.2	21.6 ± 0.2	<0.01
Total carbohydrates	239 ± 2	242 ± 2	239 ± 2	0.46	201 ± 2	200 ± 1	203 ± 1	0.44
Sugars	105 ± 2	107 ± 2	106 ± 1	0.71	101 ± 1.6	98.3 ± 1.4	99.8 ± 1.3	0.41
Polysaccharides	133 ± 2	134 ± 2	133 ± 1	0.83	99.5 ± 1.5	101.4 ± 1.4	102.6 ± 1.2	0.33
Fiber	15.7 ± 0.3	16.1 ± 0.3	16.8 ± 0.2	0.03	15.7 ± 0.3	16.0 ± 0.2	16.8 ± 0.2	<0.01
Total fats	81.6 ± 0.6	79.5 ± 0.8	82.0 ± 0.6	0.03	68.2 ± 0.6	69 ± 0.5	68.1 ± 0.5	0.40
SFA	30.6 ± 0.3	29.5 ± 0.4	30.7 ± 0.3	0.03	24.2 ± 0.3	24.3 ± 0.2	23.8 ± 0.2	0.25
MUFA	32.8 ± 0.3	31.9 ± 0.4	33.0 ± 0.3	0.06	28.2 ± 0.3	28.8 ± 0.3	28.6 ± 0.3	0.41
PUFA	11.6 ± 0.2	11.6 ± 0.2	11.5 ± 0.1	0.93	9.7 ± 0.1	9.8 ± 0.1	9.5 ± 0.1	0.17
Cholesterol (mg/d)	350 ± 5	355 ± 6	355 ± 4	0.65	290 ± 6	290 ± 6	298 ± 5	0.58
Micronutrients								
Calcium (mg/d)	1120 ± 18	1039 ± 22	1112 ± 16	<0.01	990 ± 16	976 ± 14	980 ± 13	0.79
Iron (mg/d)	11.7 ± 0.1	11.9 ± 0.1	11.9 ± 0.1	0.16	9.9 ± 0.1	9.9 ± 0.1	9.9 ± 0.1	0.68
Retinol (µg/d)	554 ± 20	521 ± 24	559 ± 17	0.42	488 ± 27	434 ± 24	452 ± 22	0.30
Carotene (µg/d)	3710 ± 105	3648 ± 125	3879 ± 90	0.31	4222 ± 158	4619 ± 141	4870 ± 128	<0.01
Vitamin D (µg/d)	2.6 ± 0.1	2.8 ± 0.1	3.1 ± 0.1	<0.001	2.7 ± 0.1	2.7 ± 0.1	2.9 ± 0.1	0.29

Nutriments selon revenus, Genève

Income level	Men				Women			
	Low	Medium	High	<i>p-value</i>	Low	Medium	High	<i>p-value</i>
TEI (kcal/d)	2105 ± 36	2142 ± 24	2116 ± 24	0.61	1715 ± 27	1736 ± 19	1745 ± 22	0.71
Macronutrients (g/d)								
Total proteins	80.9 ± 0.9	81.1 ± 0.6	84.0 ± 0.6	<0.01	67.1 ± 0.7	67.9 ± 0.5	68.9 ± 0.6	0.16
Animal protein	55.6 ± 1.0	56.4 ± 0.7	59.5 ± 0.7	<0.01	45.8 ± 0.8	46.7 ± 0.6	47.9 ± 0.7	0.13
Vegetal protein	25.4 ± 0.3	24.8 ± 0.2	24.6 ± 0.2	0.17	21.4 ± 0.3	21.2 ± 0.2	21.0 ± 0.2	0.55
Total carbohydrates	246 ± 2	242 ± 2	235 ± 2	<0.01	206 ± 2	202 ± 1	197 ± 1	<0.01
Sugars	108 ± 2	109 ± 1	103 ± 1	<0.01	103.6 ± 1.7	99.7 ± 1.2	96.8 ± 1.4	0.01
Polysaccharides	137 ± 2	132 ± 1	132 ± 1	0.16	102.4 ± 1.6	102 ± 1.2	100.1 ± 1.4	0.51
Fiber	16.7 ± 0.4	16.5 ± 0.2	16 ± 0.2	0.26	16.4 ± 0.3	16.3 ± 0.2	16.1 ± 0.2	0.65
Total fats	81 ± 0.9	80.6 ± 0.6	82.2 ± 0.6	0.14	67.2 ± 0.6	68.2 ± 0.5	69.5 ± 0.5	0.03
SFA	30.3 ± 0.4	30.0 ± 0.3	30.8 ± 0.3	0.18	23.5 ± 0.3	24.1 ± 0.2	24.4 ± 0.2	0.08
MUFA	32.2 ± 0.4	32.2 ± 0.3	33.3 ± 0.3	0.03	27.7 ± 0.4	28.5 ± 0.3	29.3 ± 0.3	<0.01
PUFA	11.7 ± 0.2	11.6 ± 0.1	11.4 ± 0.1	0.43	9.9 ± 0.1	9.5 ± 0.1	9.7 ± 0.1	0.16
Cholesterol (mg/d)	354 ± 6	350 ± 4	356 ± 4	0.56	297 ± 7	298 ± 5	286 ± 6	0.28
Micronutrients								
Calcium (mg/d)	1083 ± 24	1077 ± 16	1125 ± 16	0.10	972 ± 17	986 ± 12	981 ± 14	0.79
Iron (mg/d)	11.5 ± 0.1	11.8 ± 0.1	12.0 ± 0.1	<0.01	9.8 ± 0.1	9.9 ± 0.1	10 ± 0.1	0.15
Retinol (µg/d)	571 ± 27	551 ± 18	538 ± 18	0.63	474 ± 29	473 ± 20	422 ± 24	0.23
Carotene (µg/d)	3741 ± 140	3837 ± 92	3736 ± 91	0.70	4733 ± 170	4593 ± 121	4577 ± 141	0.76
Vitamin D (µg/d)	2.8 ± 0.1	2.8 ± 0.1	3.0 ± 0.1	0.19	2.8 ± 0.1	2.7 ± 0.1	2.8 ± 0.1	0.67

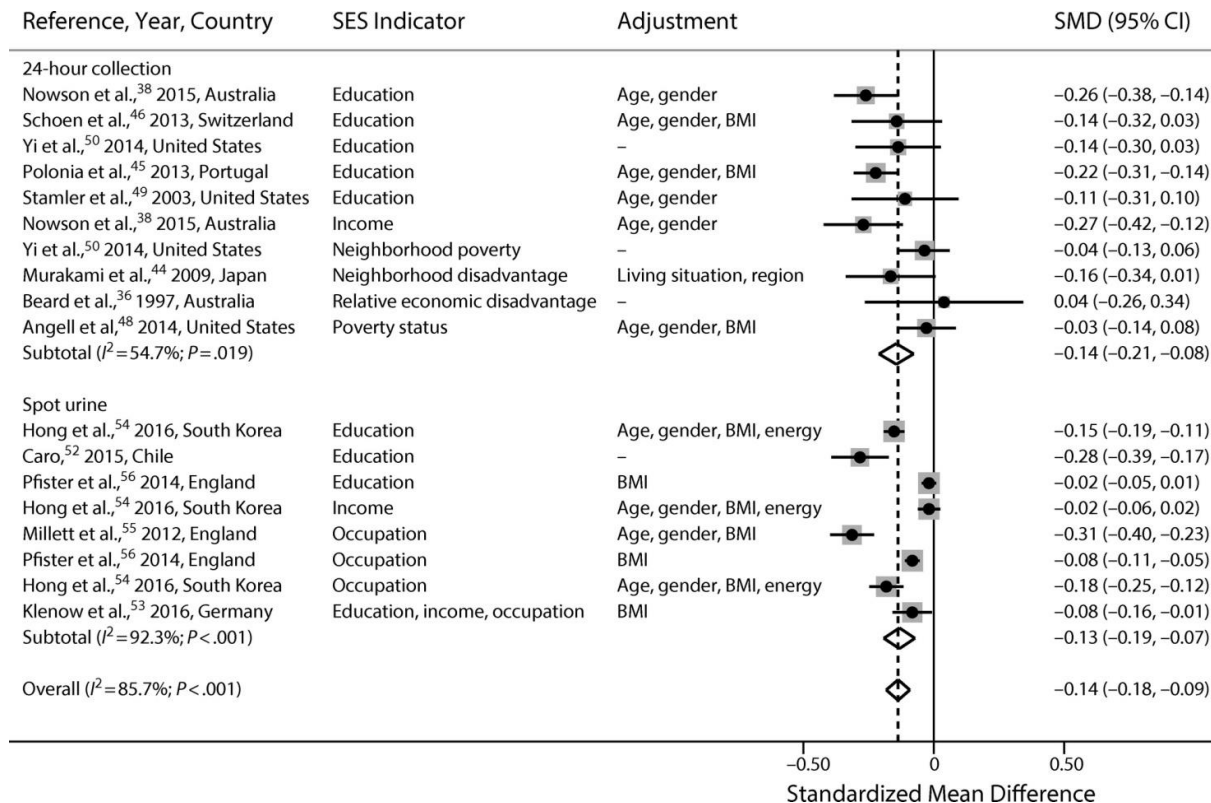
Income: low, <5000 CHF; medium, 5000 à 9499 CHF; high, ≥9500 CHF.

Nutriments selon le type de travail, Genève

	Men			Women		
Occupation	Low	High	<i>p-value</i>	Low	High	<i>p-value</i>
TEI (kcal/d)	2182 ± 30	2097 ± 19	0.03	1792 ± 27	1714 ± 15	0.01
Macronutrients (g/d)						
Total proteins	82.1 ± 0.7	82.5 ± 0.5	0.73	67.4 ± 0.7	68.3 ± 0.4	0.29
Animal protein	57.4 ± 0.8	57.7 ± 0.5	0.84	46.1 ± 0.8	47.2 ± 0.4	0.26
Vegetal protein	24.7 ± 0.3	24.8 ± 0.2	0.78	21.3 ± 0.3	21.1 ± 0.1	0.52
Total carbohydrates	240 ± 2	239 ± 1	0.69	206 ± 2	200 ± 1	<0.01
Sugars	106 ± 2	106 ± 1	0.83	102.5 ± 1.7	98.7 ± 0.9	0.05
Polysaccharides	134 ± 2	133 ± 1	0.55	103.5 ± 1.6	100.7 ± 0.9	0.14
Fiber	16.2 ± 0.3	16.3 ± 0.2	0.64	16.5 ± 0.3	16.2 ± 0.2	0.33
Total fats	80.6 ± 0.7	81.7 ± 0.4	0.24	67.1 ± 0.6	68.9 ± 0.4	0.02
SFA	30.0 ± 0.3	30.6 ± 0.2	0.18	23.0 ± 0.3	24.4 ± 0.2	<0.001
MUFA	32.4 ± 0.4	32.8 ± 0.2	0.38	28.1 ± 0.4	28.7 ± 0.2	0.14
PUFA	11.6 ± 0.2	11.5 ± 0.1	0.49	9.9 ± 0.1	9.6 ± 0.1	0.10
Cholesterol (mg/d)	346 ± 5	357 ± 3	0.10	282 ± 7	298 ± 4	<0.05
Micronutrients						
Calcium (mg/d)	1073 ± 20	1111 ± 12	0.13	935 ± 17	997 ± 10	<0.01
Iron (mg/d)	11.8 ± 0.1	11.8 ± 0.1	0.53	9.9 ± 0.1	9.9 ± 0.1	0.79
Retinol (µg/d)	566 ± 22	541 ± 14	0.38	472 ± 28	451 ± 16	0.52
Carotene (µg/d)	3711 ± 114	3805 ± 72	0.51	4690 ± 167	4596 ± 93	0.64
Vitamin D (µg/d)	2.9 ± 0.1	2.9 ± 0.1	0.57	2.5 ± 0.1	2.9 ± 0.1	<0.01

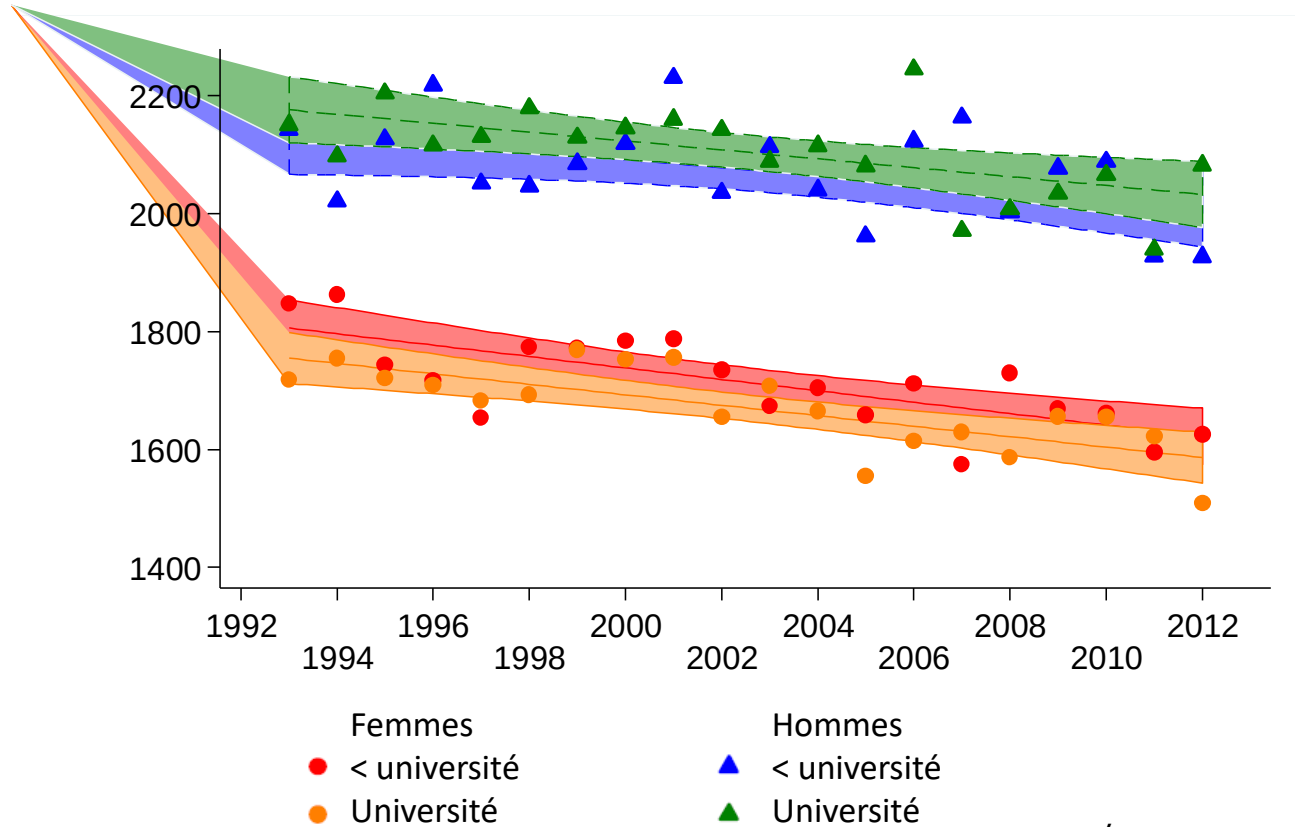
Low, blue collar; high, white collar.

Consommation de sodium / sel

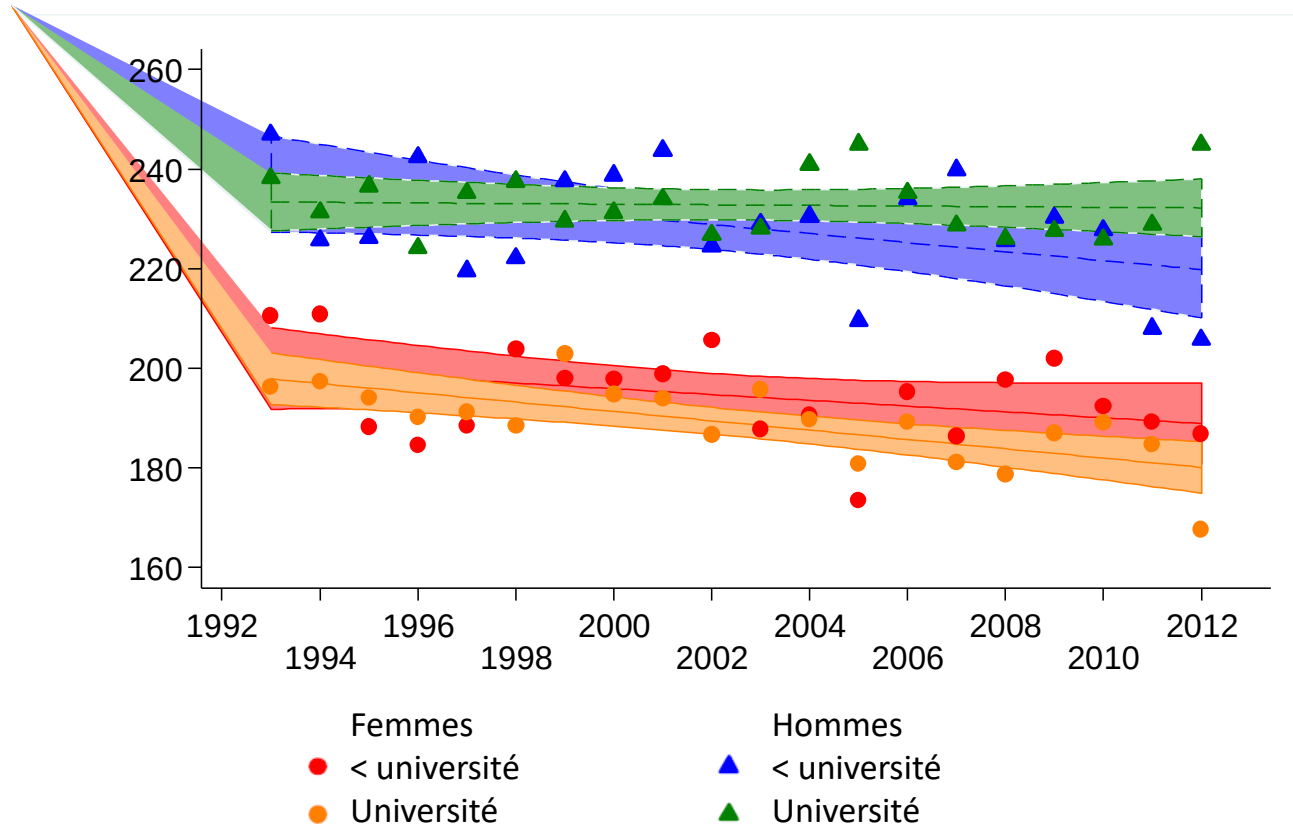


Equivalent à un excès de consommation de 503 mg de sodium (1.2 g sel) par jour chez les sujets de niveau SE bas

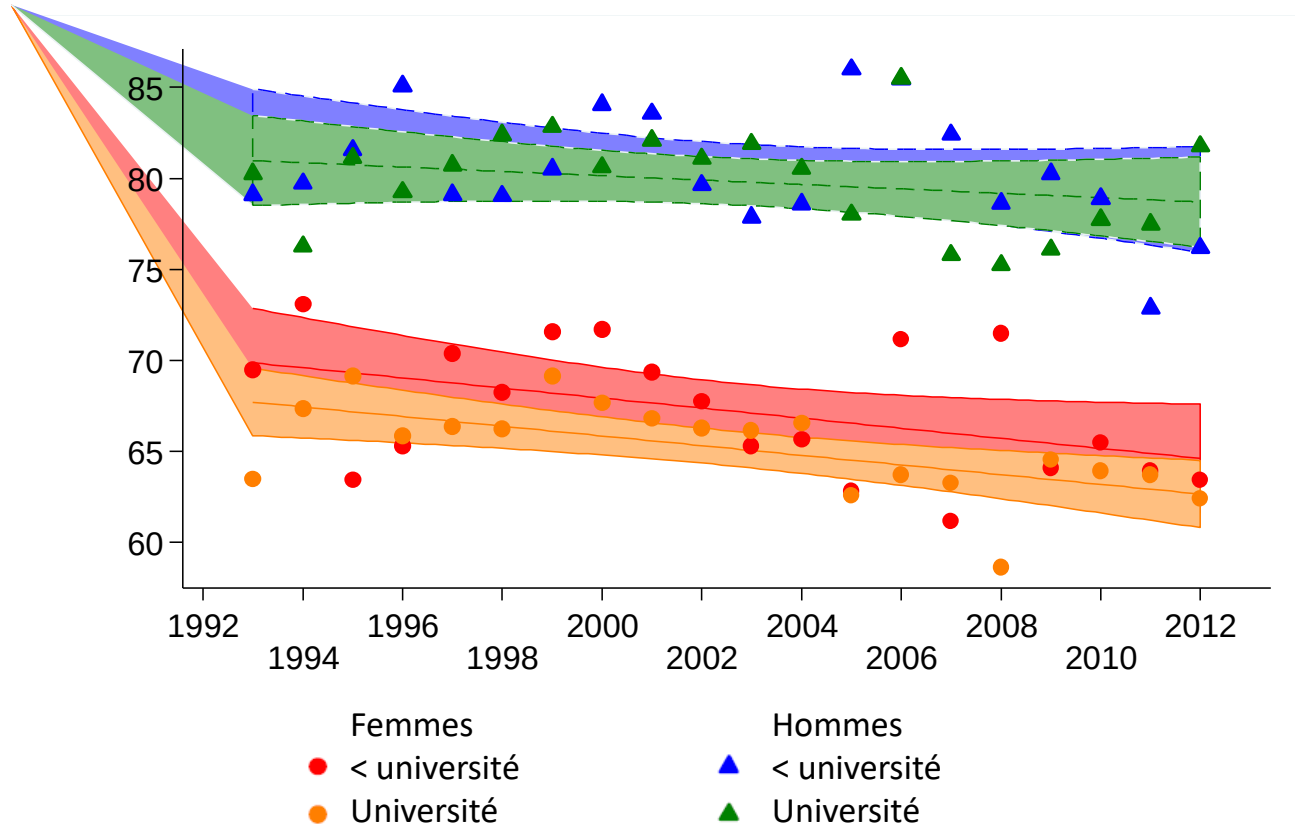
Calories / jour, Genève



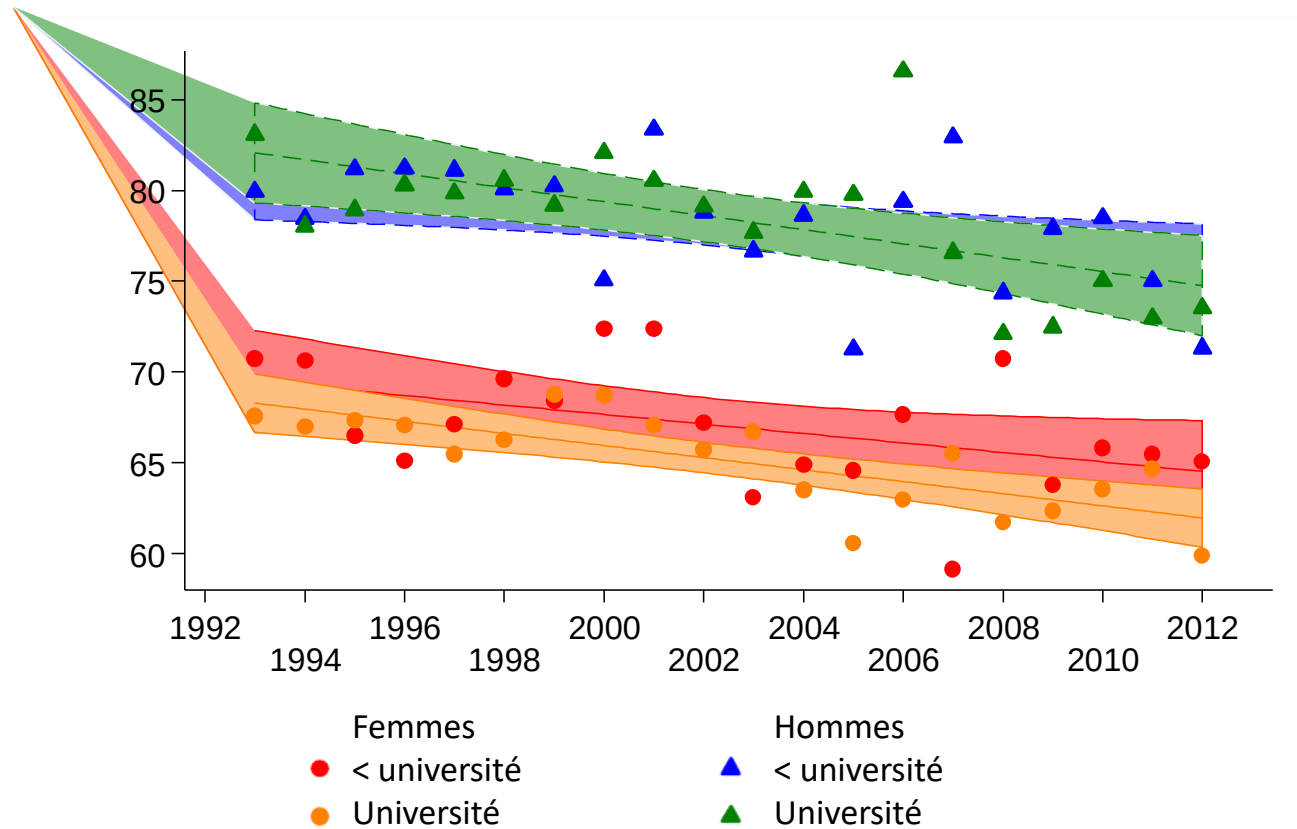
Hydrates de carbone (g/jour), Genève



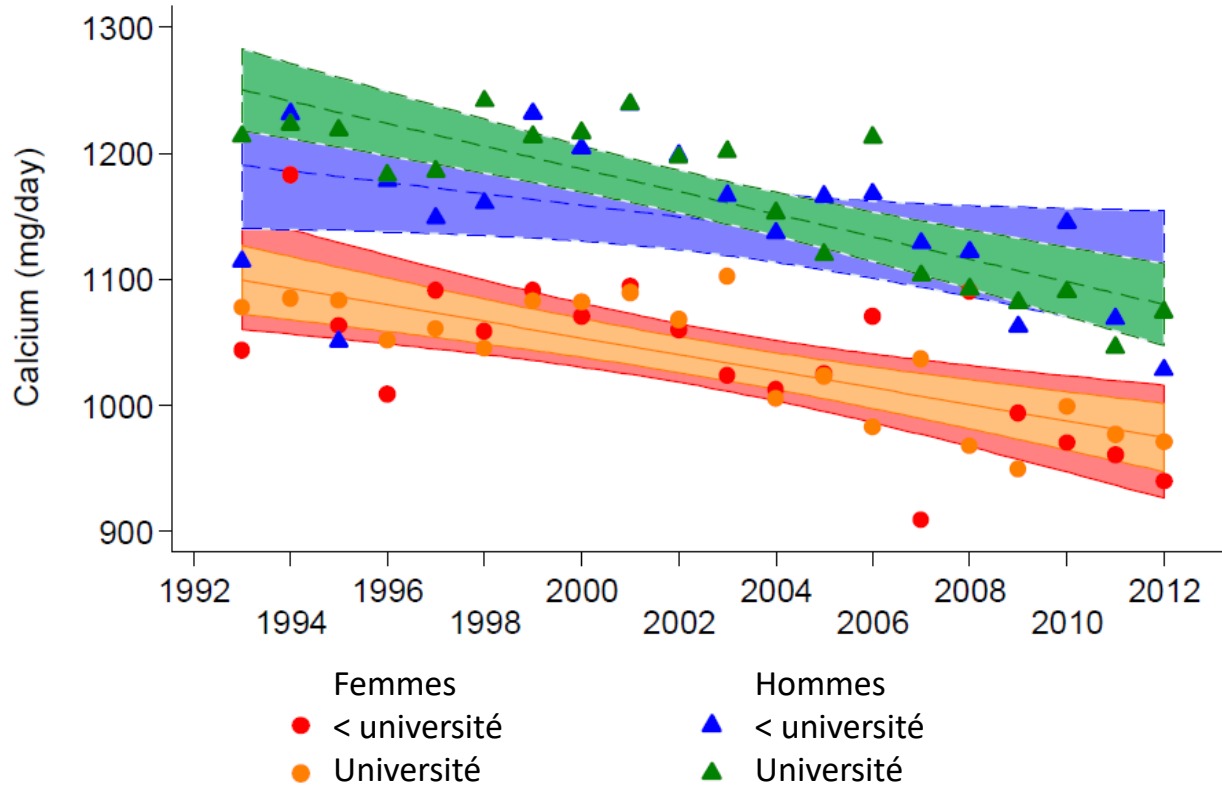
Protéines (g/jour), Genève



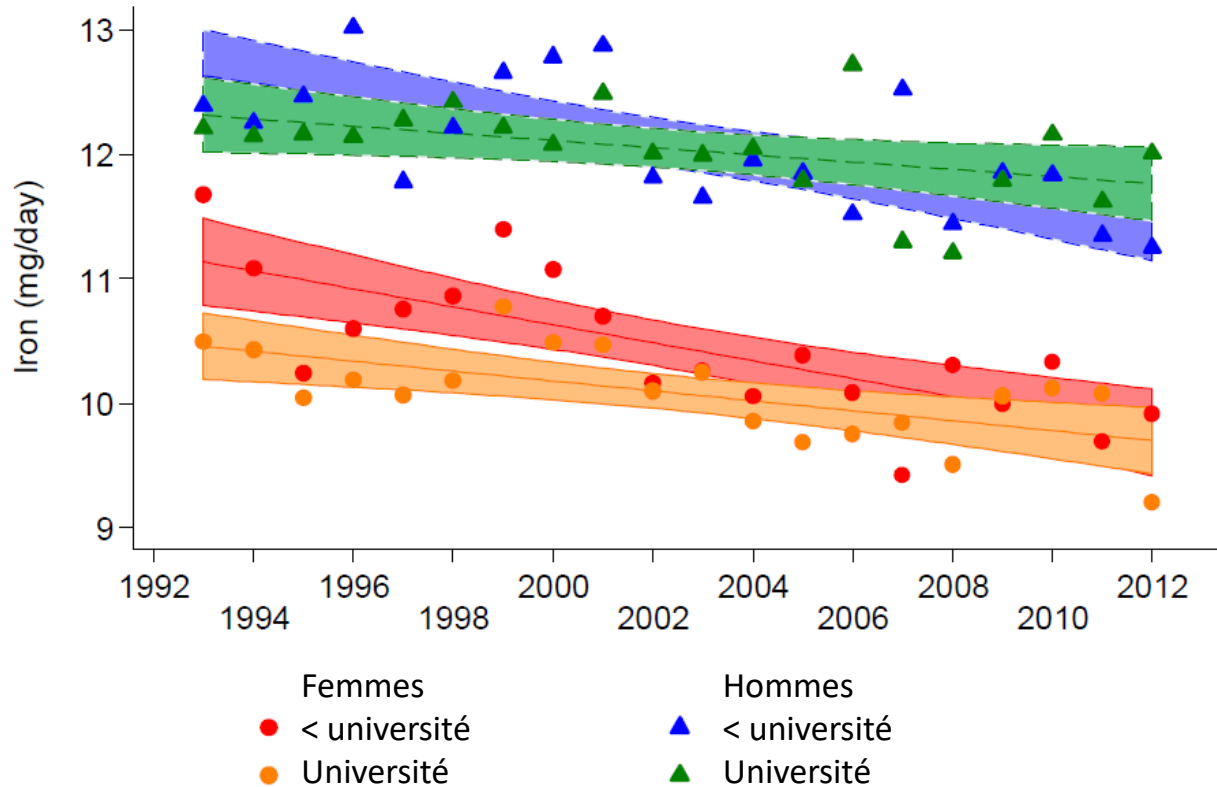
Graisse (g/jour), Genève



Calcium (mg/jour), Genève



Fer (mg/jour), Genève

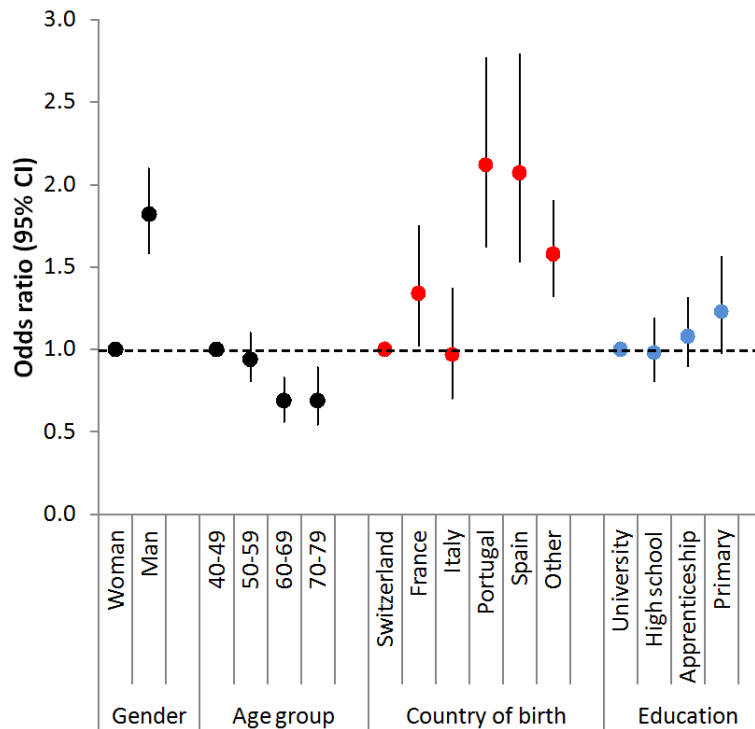


Scores alimentaires, Lausanne

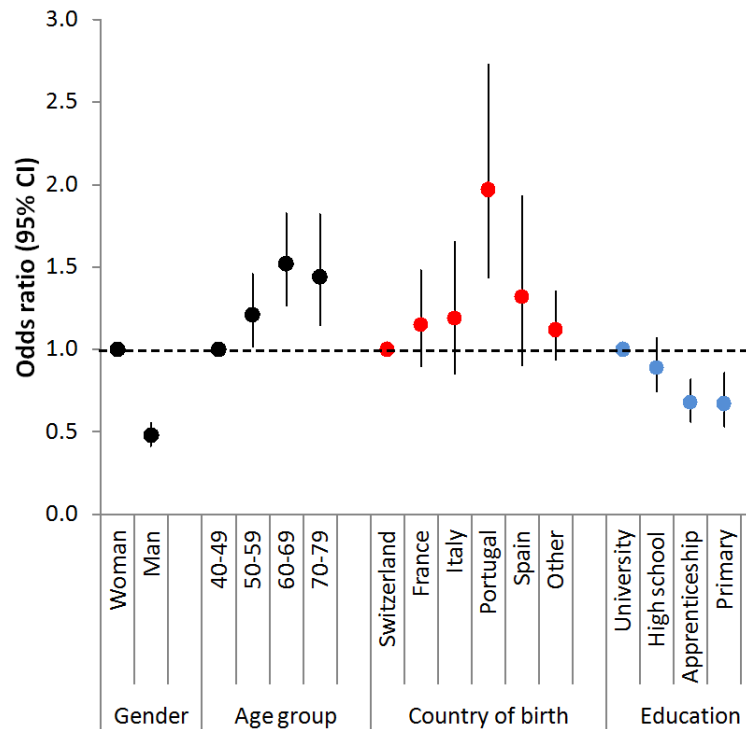
	Mediterranean score 1		Mediterranean score 2		AHEI	
	bivariable	multivariable	bivariable	multivariable	bivariable	multivariable
Marital status						
Alone	3.7±1.5	3.8±0.1	4.3±1.9	4.4±0.1	31.2±10.2	31.5±0.2
In a couple	4.1±1.5	4.1±0.1	4.9±1.9	4.9±0.1	32.3±10.0	32.4±0.2
p value	<0.001	<0.001	<0.001	<0.001	<0.001	0.003
Nationality						
Swiss	3.8±1.5	3.9±0.1	4.5±2.0	4.5±0.1	31.1±10.3	31.3±0.2
French	4.0±1.5	3.9±0.1	4.8±1.9	4.7±0.1	32.0±9.9	31.2±0.6
Italian	4.3±1.6	4.4±0.1	4.8±1.9	5.0±0.1	32.5±9.7	34.5±0.7
Portuguese	4.5±1.5	4.8±0.1	5.4±1.9	5.6±0.2	34.5±9.4	36.6±0.8
Spanish	4.4±1.3	4.5±0.1	5.2±1.7	5.2±0.2	33.2±8.6	34.0±0.9
Other	3.8±1.5	4.0±0.1	4.5±2.0	4.6±0.1	31.1±10.3	32.9±0.4
p value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Social help						
No	4.0±1.5	4.0±0.1	4.6±2.0	4.7±0.1	31.9±10	32.0±0.2
Yes	3.8±1.6	3.9±0.1	4.4±2.0	4.6±0.1	31±10.8	31.9±0.5
p value	0.007	0.26	0.006	0.50	0.04	0.79
Education						
University	4.2±1.5	4.2±0.1	4.9±1.9	5.0±0.1	33.5±10.1	33.7±0.3
High school	4.0±1.5	4.1±0.1	4.8±2.0	4.8±0.1	32.6±9.7	32.7±0.3
Apprenticeship	3.8±1.5	3.8±0.1	4.4±2.0	4.5±0.1	30.5±10.4	31.1±0.3
Primary	3.9±1.5	3.7±0.1	4.5±2.0	4.4±0.1	31.2±9.9	30.4±0.4
p value ^s	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Comportements alimentaires, Lausanne

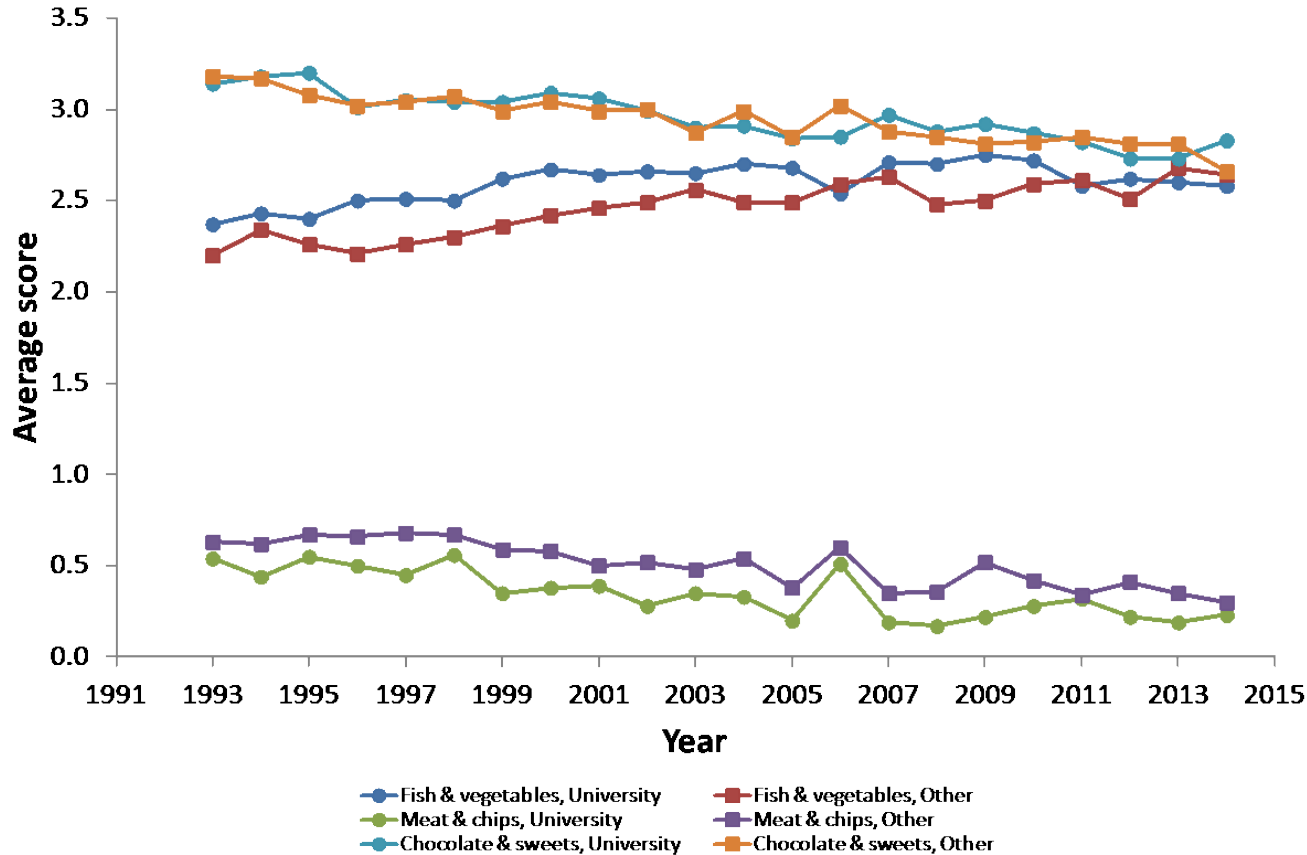
Viande et frites



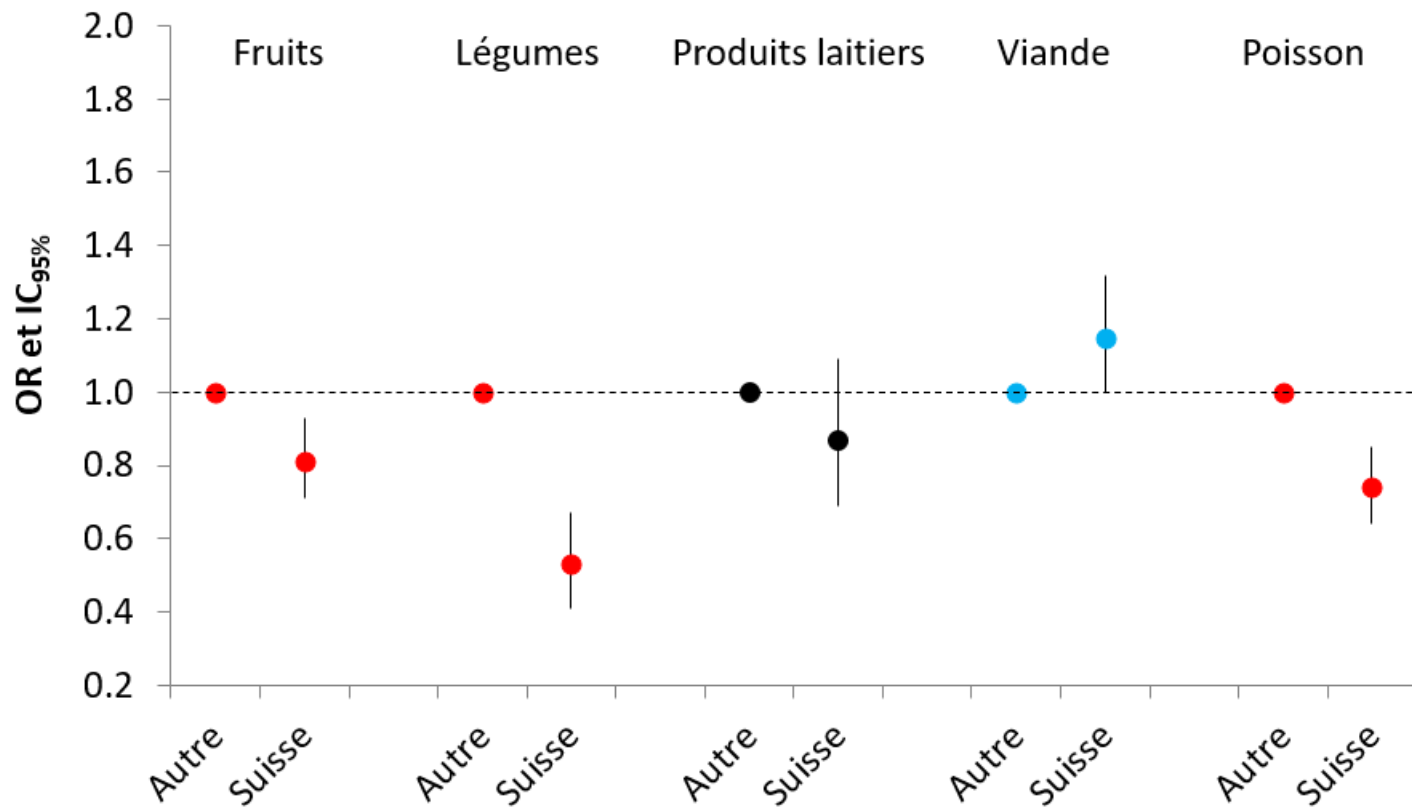
Fruits et légumes



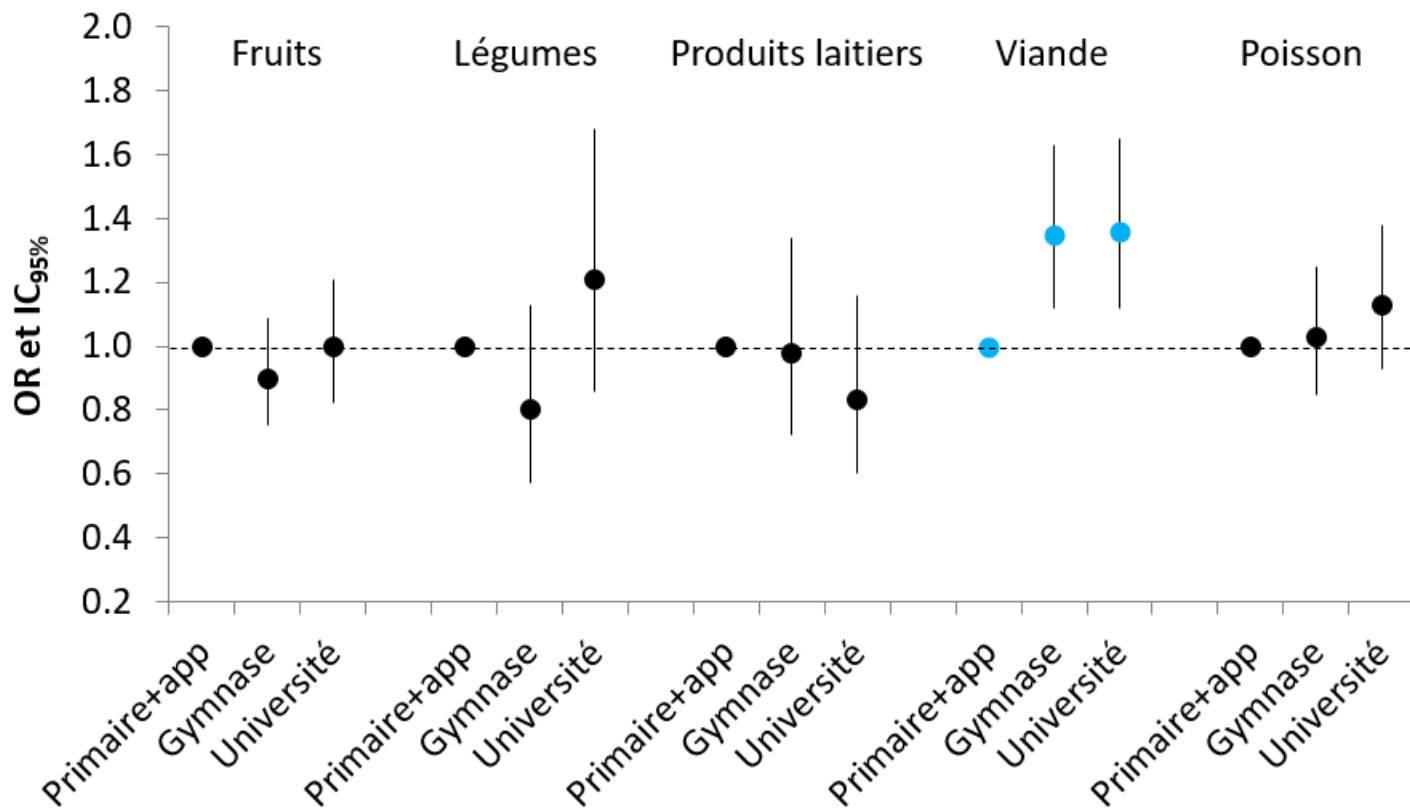
Comportements alimentaires, Genève



Suivi des recommandations



Suivi des recommandations



Evolution du suivi des recommandations

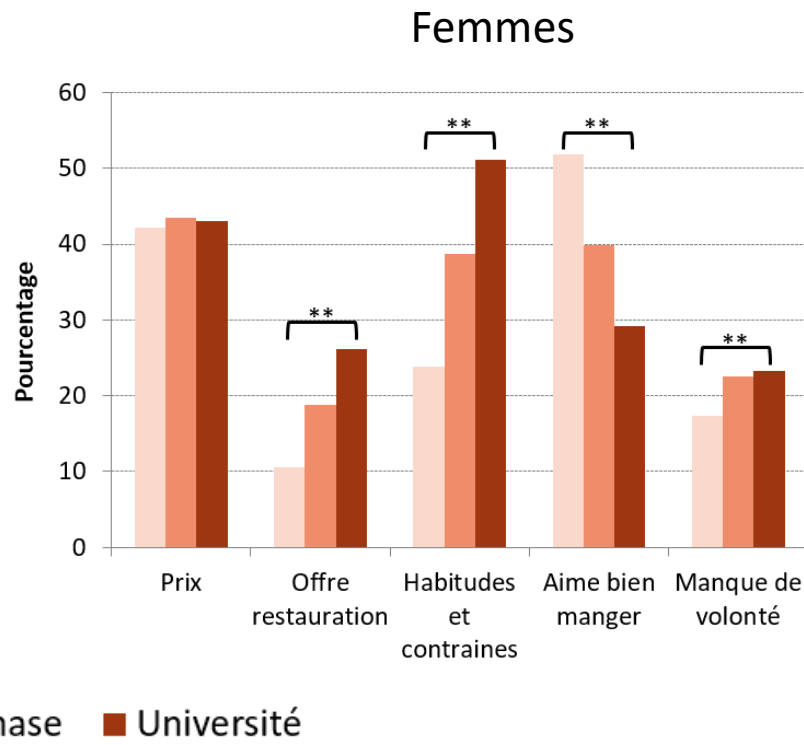
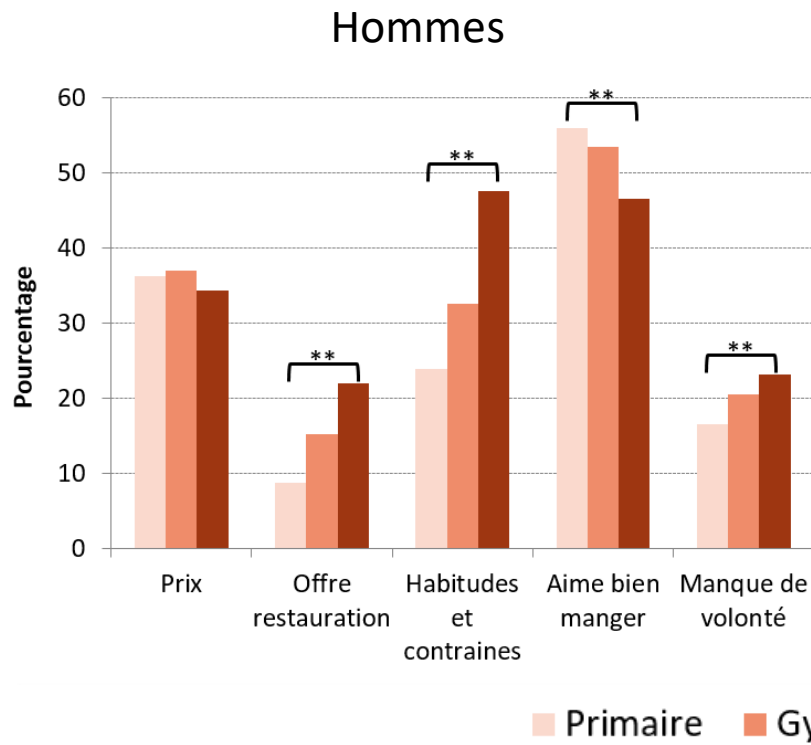
	No increase	Increase	p-Value	Multivariable
N	1251	1629		
Gender			< 0.001	
Male	500 (40.0)	790 (48.5)		1 (ref.)
Female	751 (60.0)	839 (51.5)		0.79 (0.67–0.93)
Marital status			0.170	
Alone	527 (42.1)	645 (39.6)		1 (ref.)
In couple	724 (57.9)	984 (60.4)		1.03 (0.89–1.21)
Country of birth			0.687	
Switzerland	849 (67.9)	1117 (68.6)		1 (ref.)
Other	402 (32.1)	512 (31.4)		1.07 (0.90–1.26)
Educational level			0.237	
University	322 (25.7)	374 (23.0)		1 (ref.)
High school	348 (27.8)	472 (29.0)		1.17 (0.95–1.44)
Apprenticeship	433 (34.6)	604 (37.0)		1.18 (0.96–1.45)
Obligatory	148 (11.8)	179 (11.0)		0.97 (0.74–1.28)

Accès à une alimentation équilibrée

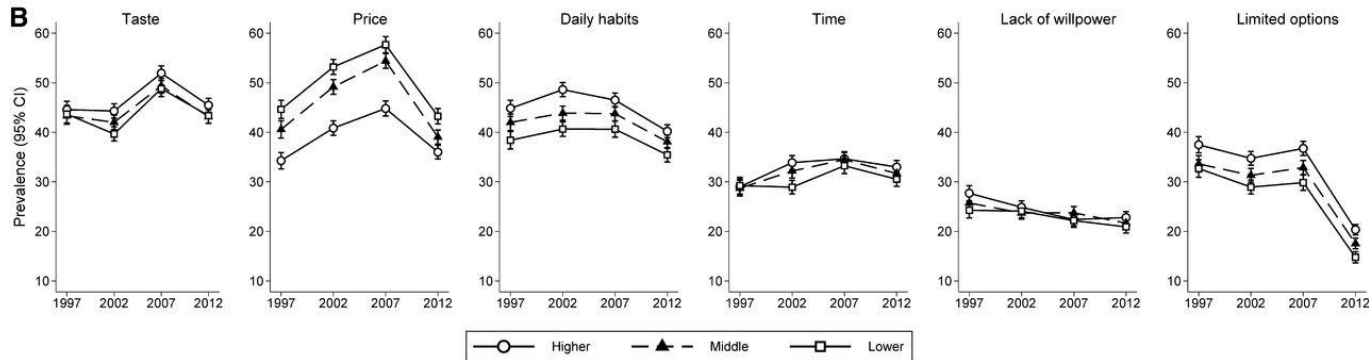
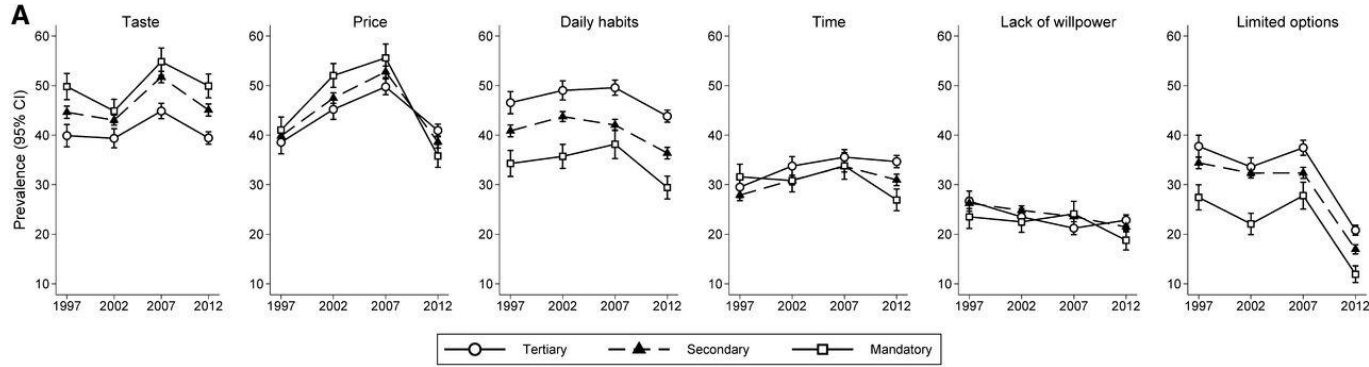
De nombreuses personnes, dont vous faites peut-être partie, estiment qu'il est important de se nourrir sainement. Voyez-vous des obstacles pour quelqu'un voulant se nourrir sainement? **Cochez tout ce qui convient!**

- | | |
|---|-----------------------------|
| Les achats et la préparation prennent beaucoup de temps | ☐ 1 |
| L'offre dans les magasins est trop restreinte | ☐ 2 |
| L'offre dans les restaurants, cantines, etc., est trop restreinte | ☐ 3 |
| Une alimentation saine est relativement chère | ☐ 4 |
| Le manque de soutien de la part de mon entourage | ☐ 5 |
| Mon entourage fait opposition | ☐ 6 |
| J'aime bien manger | ☐ 7 |
| J'aime beaucoup manger | ☐ 8 |
| Les habitudes et contraintes de la vie quotidienne | ☐ 9 |
| Le manque de volonté, pas convaincu(e) de l'efficacité | ☐ 10 |

Accès à une alimentation équilibrée, 2012

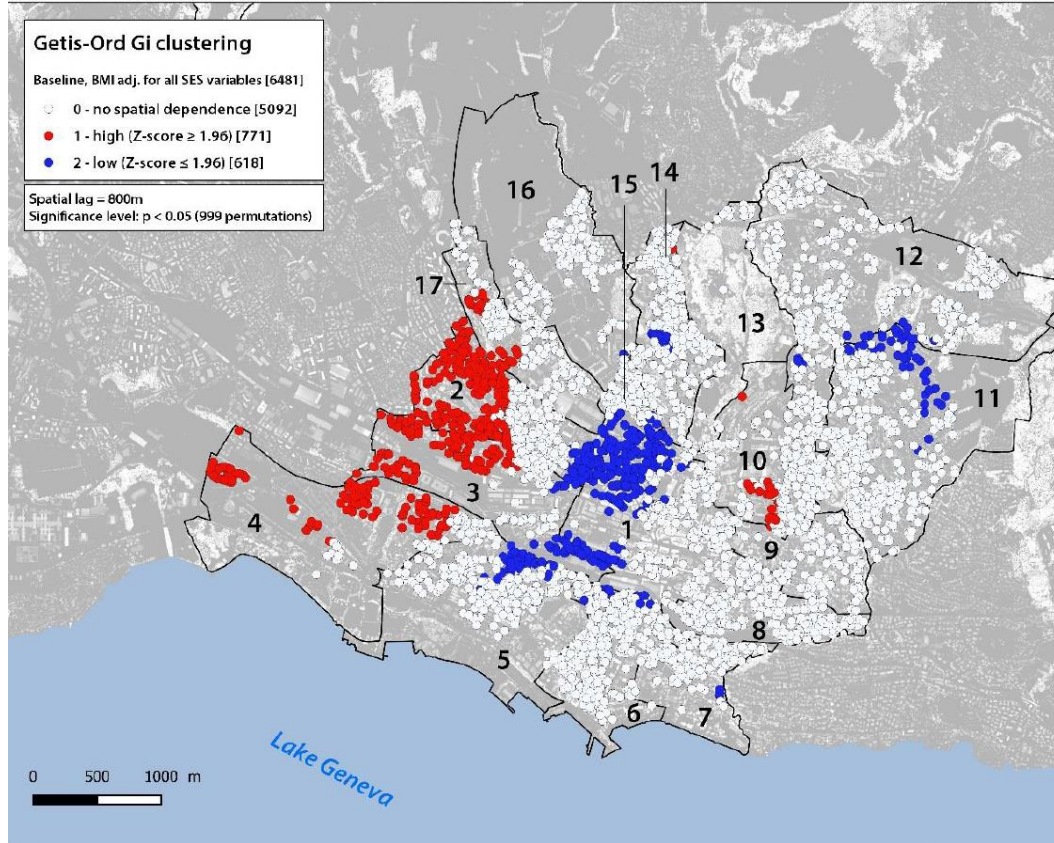


Evolution 1997-2012

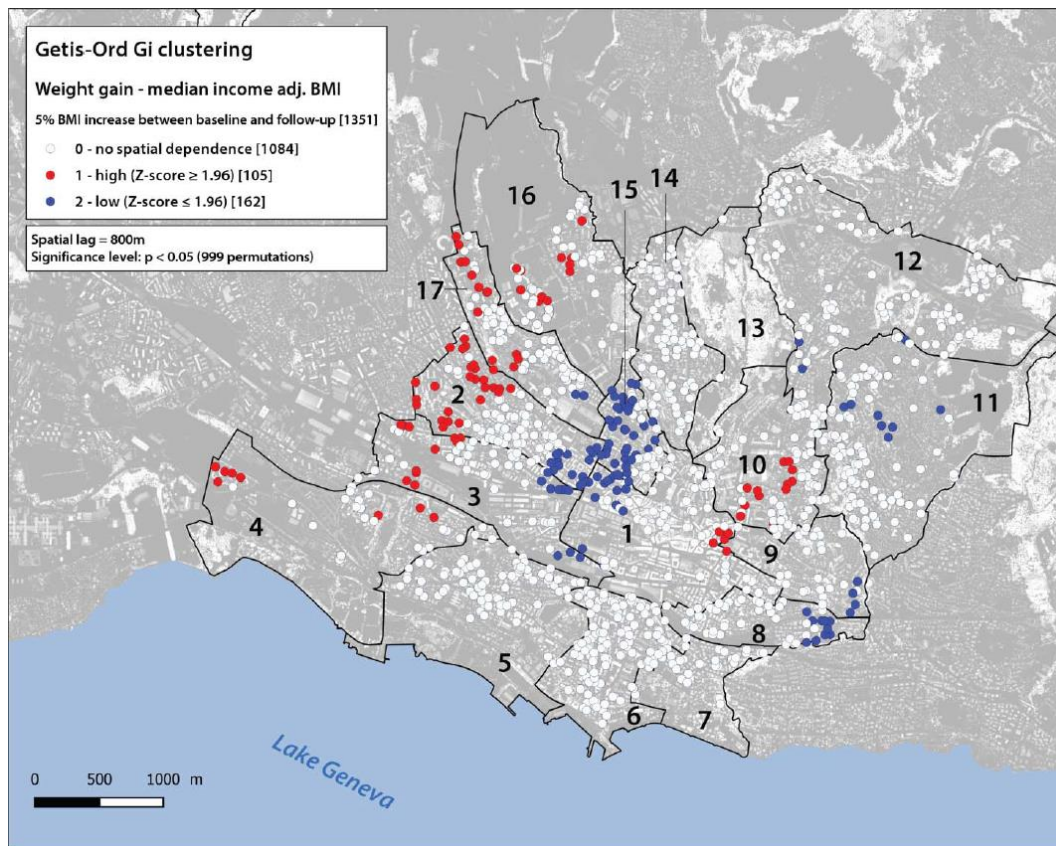


Selon le niveau d'éducation (A) et les revenus (B)

Lausanne, distribution de l'obésité



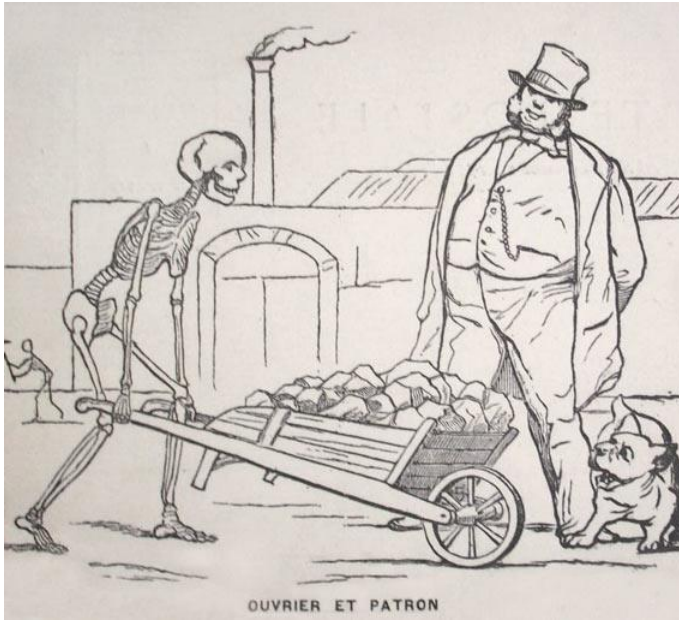
Lausanne, gain pondéral



	Weight gain (kg/year)			Gain ≥ 5 kg		
	Model 1	Model 2	Model 2	Model 1	Model 2	Model 2
Born in Switzerland						
No	0.32 $\pm$ 0.02	0.32 $\pm$ 0.02	-	1 (ref.)	1 (ref.)	-
Yes	0.30 $\pm$ 0.02	0.30 $\pm$ 0.02	-	0.97 (0.83 - 1.13)	1.04 (0.89 - 1.22)	-
p-value between groups	0.47	0.52	-	0.66	0.61	
Nationality						
Swiss	0.30 $\pm$ 0.02	-	0.30 $\pm$ 0.02	1 (ref.)	1 (ref.)	1 (ref.)
French	0.34 $\pm$ 0.05	-	0.33 $\pm$ 0.05	0.96 (0.70 - 1.32)	-	0.98 (0.71 - 1.34)
Italian	0.45 $\pm$ 0.06	-	0.45 $\pm$ 0.06	1.41 (1.02 - 1.93)	-	1.36 (0.98 - 1.88)
Portuguese	0.13 $\pm$ 0.06	-	0.12 $\pm$ 0.06	0.65 (0.45 - 0.95)	-	0.60 (0.41 - 0.88)
Spanish	0.35 $\pm$ 0.07	-	0.35 $\pm$ 0.07	1.12 (0.75 - 1.66)	-	1.10 (0.74 - 1.65)
Other	0.32 $\pm$ 0.03	-	0.31 $\pm$ 0.03	1.07 (0.88 - 1.31)	-	1.01 (0.82 - 1.25)
p-value between groups	0.006	-	0.005	-	-	-
Receiving social help						
No	0.30 $\pm$ 0.01	0.30 $\pm$ 0.01	0.30 $\pm$ 0.01	1 (ref.)	1 (ref.)	1 (ref.)
Yes	0.34 $\pm$ 0.04	0.33 $\pm$ 0.04	0.34 $\pm$ 0.04	1.43 (1.16 - 1.77)	1.28 (1.03 - 1.58)	1.32 (1.07 - 1.64)
p-value between groups	0.32	0.49	0.40	0.001	0.03	0.02
Marital status						
Living alone	0.36 $\pm$ 0.02	0.36 $\pm$ 0.02	0.35 $\pm$ 0.02	1 (ref.)	1 (ref.)	1 (ref.)
Living in couple	0.28 $\pm$ 0.02	0.29 $\pm$ 0.02	0.29 $\pm$ 0.02	0.73 (0.62 - 0.86)	0.76 (0.65 - 0.90)	0.77 (0.66 - 0.91)
p-value between groups	0.007	<0.05	<0.05	<0.001	0.001	0.002
Educational level						
Primary	0.32 $\pm$ 0.03			1 (ref.)	1 (ref.)	1 (ref.)
Apprenticeship	0.31 $\pm$ 0.02	-	-	1.05 (0.84 - 1.30)	-	-
Secondary school	0.30 $\pm$ 0.03	-	-	0.88 (0.70 - 1.11)	-	-
University	0.29 $\pm$ 0.03	-	-	0.81 (0.63 - 1.03)	-	-
p-value between groups	0.95	-	-	0.02 ^d		

Ouvrier et patron

1903



2015



Conclusion

La qualité de l'alimentation est moindre chez les sujets de faible niveau socio-économique

Les associations diffèrent selon la métrique utilisée

Cette moindre qualité expliquerait en partie la plus grande fréquence/incidence de maladies chroniques chez les sujets de faible niveau socio-économique