The first characterisation of meat consumption across sociodemographic, lifestyle and anthropometric groups in Switzerland: results from the National Nutrition Survey menuCH

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Introduction

What types of meat consume the residents of Switzerland?

- Based on annual sales data, consumption of all meat categories except white meat is decreasing[1].
- According to the Swiss Health Survey 2017, 53% of the population consumes meat more frequently than the recommended 3 times per week, however no statements can be made about compliance with the recommended consumption amount of 100 – 120 g/day.
- Consumption amounts were recently assessed by two 24-houers dietary recall interviews in the National Nutrition Survey menuCH representative for adults (18 – 75 years) living in the three main language regions of Switzerland.

References: 1 *Nahrungsmittelbilanz 2013 = Bilan alimentaire 2013.* Agristat, 2015.
2 *Schweizerische Gesundheitsbefragung 2017 : Übersicht.* BFS, 2018.

Method using the menuCH data

Quantification of all, processed, red and white meat consumption was performed applying weights for sex, age, major area of Switzerland, marital status, household size nationality, season and weekday.

Multiple linear regression was conducted on energy standardised and weighted consumption data (g/1,000 kcal) across sociodemographic, lifestyle and anthropometric variables for all, processed, red and white meat with the total population and sex specific. All regressions were adjusted for sex, language region, age, BMI, education, household status, income, physical activity, smoking, health status and dieting for weight loss. Significant results p-value < 0.05 in the table are presented in bold.

Quantification of meat consumption

The menuCH meat-category consumers
% of the population

All meat	89%
Processed meat	72%
Red meat	46%
White meat	35%

37 g/day

43 g/day

27 g/day

Meat category consumption [g/day]
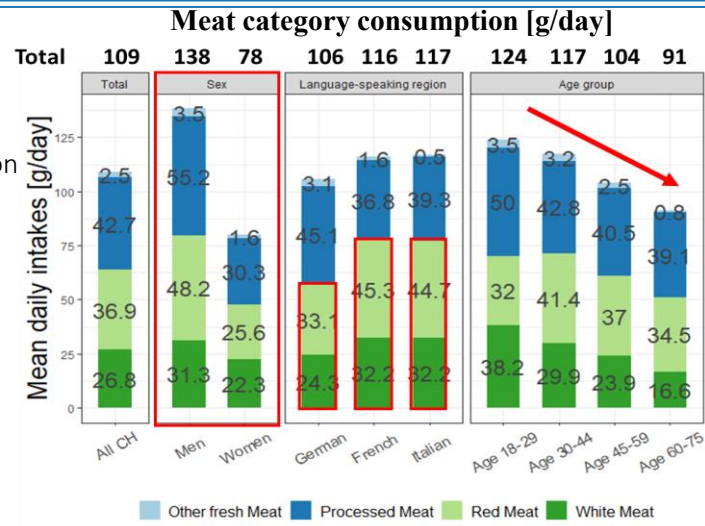
Regression Results

Multiple linear regression [g/1000 kcal]

	Total Populaiton n = 2057		Men n = 933		Women n = 1124	
	Coeff.	95% CI	Coeff.	95% CI	Coeff.	95% CI
All Meat						
Sex						
Men	0.0	ref.				
Women	**-10.1**	**[-13.6 ; -6.6]**				
Language regions						
German	0.0	ref.	0.0	ref.	0.0	ref.
French	**7.0**	**[3.1 ; 10.8]**	2.7	[-3.5 ; 8.9]	**10.1**	**[5.4 ; 14.8]**
Italian	**11.9**	**[4.7 ; 19.1]**	**11.8**	**[0.6 ; 23.1]**	**11.5**	**[2.5 ; 20.5]**
Age-groups						
18-29 years	**7.1**	**[1.4 ; 12.7]**	**15.3**	**[5.8 ; 24.8]**	2.7	[-3.9 ; 9.4]
30-44 years	0.0	ref.	0.0	ref.	0.0	ref.
45-59 years	**-4.6**	**[-9.0 ; -0.3]**	**-9.2**	**[-16.1 ; -2.4]**	-0.1	[-5.5 ; 5.3]
60-75 years	-5.3	[-10.6 ; 0.1]	**-19.0**	**[-27.2 ; -10.8]**	**9.7**	**[2.8 ; 16.5]**
Processed meat						
Language regions						
German	0.0	ref.	0.0	ref.	0.00	ref.
French	**-2.9**	**[-5.1 ; -0.7]**	**-5.7**	**[-9.4 ; -2.1]**	-0.6	[-3.4 ; 2.2]
Italian	0.2	[-4.0 ; 4.4]	0.8	[-5.9 ; 7.4]	-0.5	[-5.9 ; 4.8]
Red Meat						
Age-groups						
18-29 years	-2.8	[-6.7 ; 1.1]	-1.1	[-7.9 ; 5.8]	-3.4	[-7.9 ; 1.1]
30-44 years	0.0	ref.	0.0	ref.	0.0	ref.
45-59 years	-1.0	[-4.0 ; 2.0]	-2.6	[-7.5 ; 2.4]	0.4	[-3.3 ; 4.0]
60-75 years	-0.8	[-4.5 ; 2.9]	**-6.3**	**[-12.2 ; -0.3]**	**5.2**	**[0.5 ; 9.8]**
White Meat						
Sex						
Men	0.0	ref.				
Women	-0.8	[-3.0 ; 1.4]				
Age-groups						
18-29 years	**8.4**	**[4.8 ; 11.9]**	**13.9**	**[7.7 ; 20.1]**	**4.9**	**[0.8 ; 9.1]**
30-44 years	0.0	ref.	0.0	ref.	0.0	ref.
45-59 years	-1.5	[-4.3 ; 1.2]	-3.0	[-7.4 ; 1.5]	0.6	[-2.8 ; 3.9]
60-75 years	-2.1	[-5.5 ; 1.3]	**-5.5**	**[-10.8 ; -0.1]**	2.2	[-2.1 ; 6.4]

Further significant association p-value < 0.05

- Overweight and obesity was positively associated with consumption of all meat categories
- Participants with children consumed more all and white meat than participants living with a partner but without children
- Tertiary education was negatively associated with all, processed and red meat consumption, than lower education levels.

Discussion & Conclusion

Mean daily meat consumption of 109g consists of 37g red, 27g white, 43g processed and 2g unspecified meat.

Most prevalent differences in meat-category consumption were between the sexes except for white meat and the linguistic regions.

- Swiss residents of different demographic groups may face different benefits & risks from their meat consumption.
- Consumption of separate meat categories should be monitored.

Energy-standardized meat consumption of the oldest age group was not significantly associated with meat consumption although the absolute meat consumption decreased with age.

Regression analysis revealed significant associations for Age, BMI, Smoking, Household status, Education & Nationality for which further study is warranted.

Results of the sex-specific regression suggest the need for separate analysis of men and women.