

## The NuTWInd Project : Nutrition Transition in French West Indies

*The **NuTWInd** project is a research project funded by the French Research Agency. Its main objective is to elucidate the relationships between characteristics of local food supply and dietary behaviours of populations and to propose strategies to improve nutrition security in the French West Indies.*

*The **NuTWInd** consortium is composed of 5 highly-experienced research teams, a food technical institute and the French Ministry of Agriculture. The approach is multi-disciplinary, with experts in epidemiology, economics, nutrition, sensory sciences, sociology.*

**The goal of this newsletter is to present the work in progress.**

### Liking for fatty, salty and sweet sensations in 1787 habitants of Martinique (French West Indies)

The NutWind project includes studying drivers of eating behavior and among them sensory drivers were the subject of the work reported here. It aimed at measuring the preferences of the population of the French West Indies towards the sensations of fat, salty and sweet thanks to adaptations of tools developed for the French hexagonal population, during the project ANR EpiPref (<https://anr.fr/Projet-ANR-08-ALIA-0006>). We present here the results based on the adaptation of the PrefQuest questionnaire (Deglaire et al, 2012) which aims to measure these preferences in a self-declarative way without tasting.

The NutriParm survey deployed in Martinique by the PARM was completed on May 31, 2019. The data of 1787 subjects who responded to this survey were analyzed. The large number of respondents, which is well above the target, is due to a large-scale communication campaign orchestrated by the PARM.

For each of these subjects, a preference index for fat, salty-fat, sweet-fat, salty and sweet were calculated according to the methodology of the EpiPref project. The distributions of these five indices show a great variability and a quasi-Gaussian shape, which allows to observe many effects of several individual characteristics on preferences. The most important effect observed is that of age. The preferences for these five sensations decrease sharply with age; this effect seems to be greater than that observed in France during the EpiPref project. This difference could be due to a greater generational gap in diet caused by a more recent, but rapid, arrival of fast food type of alimentation in the West Indies. As in France, we then observe that men have higher preferences than women do for all these sensations, except salt. Figure 1 clearly shows the importance of the age and gender effect of the sweet sensation, as well as the lack of interaction between these two effects.

#### Content

Liking for fatty, salty and sweet sensations in 1787 habitants of Martinique (French West Indies)

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ALISS-INRA  
CSGA-INRA  
DAAF Guadeloupe  
DAAF Martinique  
PARM (Pole Agroalimentaire Région Martinique)  
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Unexpectedly by the project, the levels of preference indices in Martinique are not higher than those obtained in the hexagonal France during the EpiPref project. They are even significantly lower in men for all sensations, except the salt sensation for which there is no difference. In women, the preferences are of the same level, except for the sweet sensation for which that of the female Martinicans' is lower than that of the women living in the hexagon. In support of this result, we observe that life expectancy in Martinique is associated, in women only, with a decline in preference indices.

Additional analyzes remain to be carried out, notably by adding future data from Guadeloupe where the survey was deployed a little later and will be closed on July 31, 2019.

In addition, a number of respondents also participate in the Nutrinet-Santé study; thus, it should be possible to link their food consumption to their stated preferences. It is indeed important to establish whether preferences influence or not consumption and to what extent.

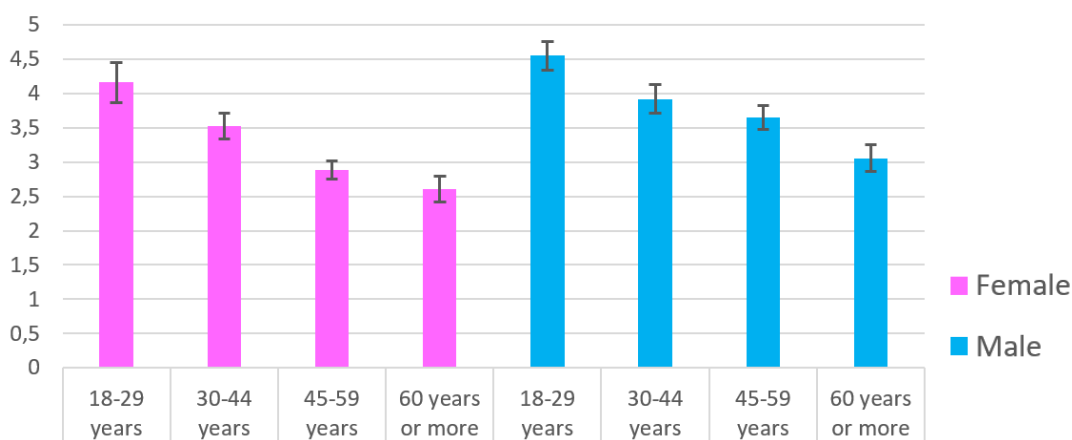
The PARM, with the methodological support of the CSGA and Actalia, is currently conducting the sensory analysis component of the project. It consists in measuring the preferences with respect to the sensations of fat, salty and sweet, no longer by a questionnaire, but by tastings of 24 food and beverage ranges, each consisting of 5 variants with a gradient in one of these three sensations.

These data should be available by the end of 2019; but they can only be collected from around 200 Martinicans. Comparing these data with the auto-declarative data from the PrefQuest will allow for estimate of potential questionnaire response biases.

### Reference

Deglaire, A., Méjean, C., Castetbon, K., Kesse-Guyot, E., Urbano, C., Hercberg, S., & Schlich, P. (2012). Development of a questionnaire to assay recalled liking for salt, sweet and fat. *Food Quality and Preference*, 23(2), 110-124.

Sweet index preference



**Figure 1** : Averages of adjusted sugar preference indices (by age and sex) of a sample of 1787 Martinicans adjusted by weighting (age and sex) with their 5 % confidence intervals