

Relevance of the nutrient profiling SENS* system in relation to the overall nutritional quality of observed diets.

*Système d'Etiquetage Nutritionnel Simplifié [Simplified nutritional labelling system]

Matthieu Maillot¹, Véronique Braesco² ; Nicole Darmon³

¹MS-Nutrition, Marseille, France; ²VAB-Nutrition, Clermont-Ferrand ; ³UMR NORT INRA/INSERM/AMU, Marseille, France.

INTRODUCTION

The SENS labelling system which distributes foods into four classes is based on an algorithm adapted from the SAIN, LIM initially proposed by the French Food Standard Agency (AFSSA) in 2008.

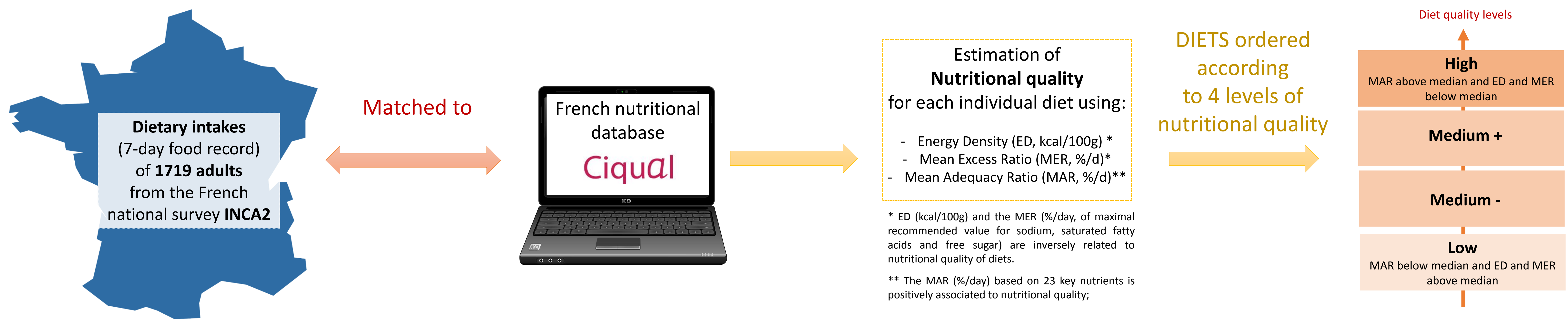
Its adaptation consisted in introducing European Daily Reference Intakes (DRIs) (EC No 1169/2011) into the SAIN and LIM scores, taking into account the specificity of some food categories and restructuring mapping to better order the four classes.

OBJECTIVE

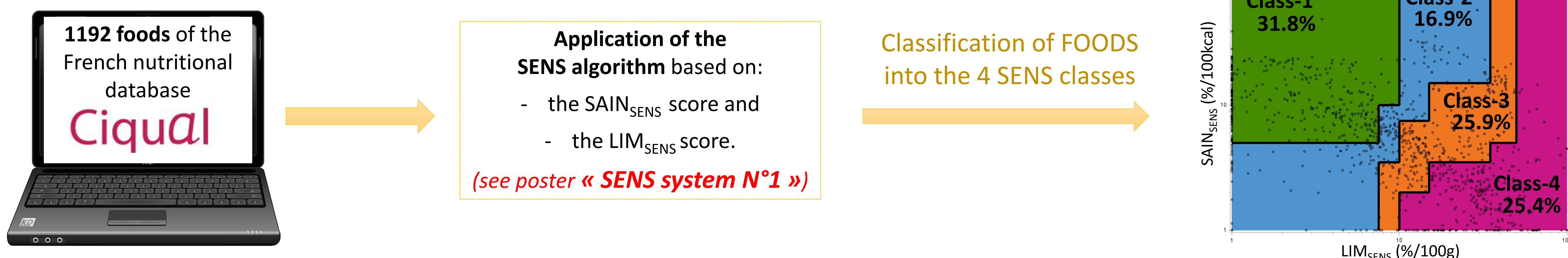
To assess the **relevance of the classification provided by the SENS system** in relation to the overall **nutritional quality** of diets consumed by French adults.

MATERIALS AND METHODS

1/ 1719 Individual French DIETS classified into 4 levels of nutritional quality



2/ 1192 FOODS of the French Ciqual database classified into 4 classes according to the nutrient profiling SENS system

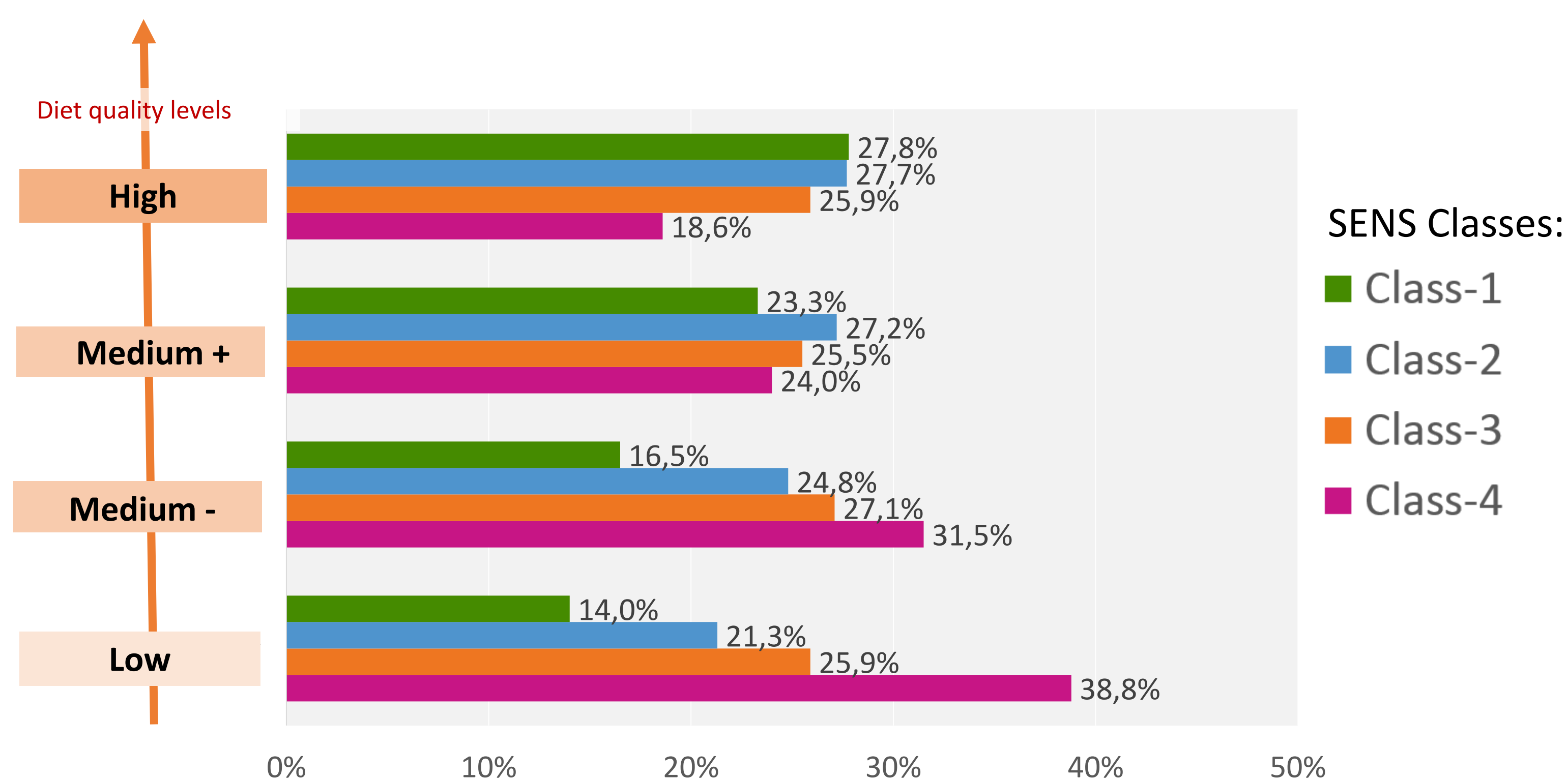


3/ Testing the hierarchy of the 4 SENS classes in relation to the overall nutritional quality of observed diets

- Average contributions of the four food classes to total energy and total weight of diets were estimated and statically compared between the four levels of overall nutritional quality of the diets.
- Hypothesis was that Class-1 (Class-4) foods contributed more to the energy and weight of diets of high (low) nutritional quality.
- All statistical tests were adjusted for total energy intake, age and gender.

RESULTS

Contribution of foods (in %) to diet energy by SENS classes and by diet quality levels



With increasing nutritional quality of the diets, energy contribution from:

- Class-1 foods significantly increased (14%, 16.5%, 23.3% and 27.8% in low, medium-, medium+ and high groups, respectively) ;
- Class-2 foods also increased significantly but to a lesser extent (from 21.3% to 27.7%);
- Class-3 foods stagnated around 26%;
- Class-4 foods significantly decreased (38.8%, 31.5%, 24% and 18.6%, respectively).

CONCLUSION

The SENS algorithm classifies foods in a hierarchical way, in accordance with their contributions to the overall nutritional quality of observed diets, suggesting that it could be useful in the context of simplified nutritional labelling in Europe.