

The 13th European Nutrition Conference, FENS 2019, was held at the Dublin Convention Centre, 15–18 October 2019

## Development and implementation of online tools for personalized dietary advice at home or in a clinical setting: Eetscore and NutriProfiel

Michiel Balvers<sup>1,2</sup>, Mariëlle De Rijk<sup>2</sup>, Anne Slotegraaf<sup>2,3</sup>, Jacqueline Klein Gunnewiek<sup>1</sup> and Jeanne De Vries<sup>2</sup>

<sup>1</sup>*Gelderse Vallei Hospital, Ede, Netherlands,*

<sup>2</sup>*Wageningen University & Research, Wageningen, Netherlands and*

<sup>3</sup>*Nutrition & Healthcare Alliance, Ede, Netherlands*

### Abstract

**Introduction:** It is known that significant proportions of the general public do not meet current recommendations. This may be explained by a lack of knowledge or perceived difficulty trying to adhere to the recommendations. In addition, health professionals, such as general physicians, lack solid education in nutrition, which hampers optimal care and prevention in diet-related disorders. In order to help people and health professionals to improve dietary habits, the Eetscore and NutriProfiel tools were developed and implemented.

**Methods:** The Eetscore tool assesses to what extent daily intake adheres to the 2015 Dutch Food Based Dietary Guidelines developed by the Dutch Health Council. The tool consists of a short online food frequency questionnaire (FFQ) which is scored with the Dutch Healthy Diet Index. The total Eetscore (including 16 subscores) ranges from zero to 160, with higher scores implying better adherence to the guidelines. Both FFQ and Index have been validated.

NutriProfiel is a specific application in which the Eetscore monitors micronutrients. Micronutrient deficiencies are common and diagnosed with blood tests. A deficiency may be explained by poor diet or pathophysiology, which requires different follow-up. Therefore, it is important to include information on dietary intake while interpreting micronutrient blood concentrations. For NutriProfiel, the clinical laboratory information system is coupled to the Eetscore questionnaire. Patients who undergo laboratory testing for vitamin B6, folate, B12 and/or D receive a link to the Eetscore questionnaire. Nutriprofiel combines blood values and dietary intake to generate a dietary advice. The advice contains practical hints to increase micronutrient intake and is reported electronically to the doctor.

**Results:** The Eetscore and NutriProfiel tools have been successfully developed and implemented in 2015, with an increasing number of (clinical) users. The Eetscore has been evaluated and applied for monitoring intake in research, and in medical practices as part of an ehealth platform in health professionals and patients.

The NutriProfiel tool has been positively evaluated by its users and is currently available for all requests for vitamin blood analyses coming from general physicians and selected medical specialists (e.g. gastrointestinal medicine, internal medicine).

**Discussion:** Both the Eetscore and NutriProfiel have been successfully developed and implemented for use in both home settings as well as clinical settings. Future perspectives include further implementation of the Eetscore for other clinical disciplines or specific patient populations. For NutriProfiel, future perspectives also include expanding the list of nutrient biomarkers for which a personalized dietary advice can be provided.

### Conflict of Interest

There is no conflict of interest.