

# Communication on personalised nutrition: individual-environment interaction

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## Unhealthy eating

The growing number of people with unhealthy lifestyles causes an increase of non-communicable diseases, thereby compromising quality of life of a large number of people. It is expected that mortality, morbidity and disability attributed to the major non-communicable diseases will rise to account for 73% of all deaths and 60% of the global burden of disease in 2020 [1]. Unhealthy eating is one of the important components of lifestyle that contributes to the development of diseases such as diabetes and cardiovascular diseases. Despite the large efforts, most nutrition interventions fail to effectively influence food choice. In most European countries, eating styles do not match with basic recommendations. Despite some improvements, diets still contain too much saturated fat, sugar and salt and insufficient vegetables, fruits and fish [2, 3].

## Personalisation

It is already acknowledged for a long time that individual variability affects individual dietary and nutrient requirements, nutritional status and hence health. Therefore, recommendations on nutrient intake vary according to age, gender and ethnicity [4]. Insights resulting from unravelling the human genome may extend nutrition interventions tailored to individual genetic make-up, the so-called innovative field of nutrigenomics based personalised nutrition (PN).

## Scientific communication

The European Nutrigenomics Organisation (NuGO) aims at a key-role in providing scientific-based information and facilitation of a platform for an open dialogue about nutrigenomics based PN. However, based on evidence from science and practice, the conclusion can be drawn that facilitating an open dialogue is a complex task that reaches far beyond “informing” [5, 6].

## Round table discussion

During the round table discussion at the NuGO conference, November 2005, perspectives of representatives from different scientific disciplines, industry and government were collected on who should be involved in a dialogue and what topics should be on the agenda. It was clear that although the discussion was very lively, its content remained scattered leaving many topics touched upon yet not discussed in-depth. Reactions of participants were limited to their own specific interest and the discussion did not further elaborate on specific topics. Before an extensive and fruitful dialogue can take place, more insight is needed on the individual and environmental level.

## Individual-environment

### Individual behaviour change

Research has shown that tailoring information to an individuals' situation is more effective in influencing health behaviour than general information [7–17]. For instance, advice on the risks of unhealthy eating adapted to an

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individuals' lifestyle (e.g. high intake of calories), physical (e.g. genetic background) and environmental circumstances (e.g. deskwork) can increase perceived personal vulnerability to nutrition-related diseases. High-perceived susceptibility is known to influence motivation for behaviour change. In the future, individuals are expected to be able to include information on their personal susceptibility to nutrition-related disease into their every day decisions about nutrition [18, 19]. The success of nutrigenomics based PN in terms of influencing food choice depends on whether and how it will be integrated in the process of behaviour change. Hardly any research has been conducted on this topic yet.

### Supportive environment

Next to individual motivation, the process of behaviour change is largely influenced by the social, physical and economic environment. The availability, accessibility and affordability of health assessments, advice and healthy food, social support of medical doctors and health educators, health education and promotion activities, scientific and popular articles and marketing advertising are environmental factors that influence access to personalised advice and capacity to act upon it. Actors in policy making, health care, health education and health promotion, the private commercial sector, media, civic groups and NGO's all play important roles in shaping those factors. To create a supportive environment, those actors have to be able to make an informed decision on how and under what conditions nutrigenomics based PN should be introduced in society. Therefore, they need a certain level of knowledge on the scientific background, the state of the art and the relevant legal, social and ethical issues related to nutrigenomics.

### Future

Following the results of the round table discussion, the perspectives of concerned actors on their interest and role in nutrigenomics and nutrigenomics based PN, their current knowledge, specific demands for message content and communication channels, and their willingness to collaborate will be mapped during 2006. The results will be used by NuGO to further create their strategic communication infrastructure. A complicating issue in trying to create a dialogue on PN is the lack of insight on how this innovation will evolve in the near future. At the NuGO Conference in Mallorca, several participants presented their own perspective on how PN is or will be introduced in society. However, reflections of other actors in society are not yet

known. This hinders further dialogue. In the coming years, the authors will work on the development of several "alternatives" for introduction of PN to create a basis for discussion. The alternatives, or prototypes, will reflect perspectives of actors in society. The prototypes can be used for further dialogues and will be adapted to new insights. At the department of Communication Science of Wageningen University, forthcoming research will focus on how end-users define their own personal eating style and factors that influence this eating style. The barriers and chances of the use of information about genetic background, as defined by end-users, will receive special attention.

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