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The 4th International Symposium of the Institut Paul Bocuse Research Center

31.05.2011



On May 31st, the Institut Paul Bocuse welcomed sixty international participants; students, researchers and industrials; on the topic of **Ageing and Eating**.

The Symposium aimed at discussing on how society can contribute to providing pleasurable meals and balanced diets to elderly; taking into account their physiological, psychological and socio-economical specificities.

Conferences permitted to participants to learn more about different aspects of seniors' food habits and feelings. Oral presentations dealt with perceptions and expectations for the design of retirements homes restaurants ambiances, or how food choices are made and how taste changes during the life. The participants also get an insight on the consequences of ageing on eating and nutrition, on food preferences of older people living in care homes or on the dependence of the elderly.

Guests also had the pleasure to attend a culinary demonstration of ***Verrine Raspberry Anis*** by the Chef **David FILLAT**. Some volunteers even put in to the test their culinary talents! This meeting was also an opportunity to network and forge links between Scientists.

The day finished with a cocktail in the best atmosphere!



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Marc BONNEFOY, INSERM / Lyon Sud Hospital –
What does ageing mean? Normal and pathological issues

In 2010, life expectancy was about 81 years old in France. With 9% of people aged over 75 and 20% aged 65 or more, this represents an important issue in our country and in the whole world. Globally, ageing is related to a decrease of the functional capacities, especially between 65 and 85 years old. Several parameters can be considered as specific to elderly people, depending on genetics and environment.

Firstly, frailty can be defined as a decrease of both resilience and physiological stocks, linked with vulnerability to stress. Around 10% of elderly people could be concerned; however, because of the similarities with physiological ageing, precise diagnostics are difficult. In fact, a frailty person is characterized by a loss of weight, a sedentary way of life, some slowness, along with a decrease of strength, and increase of tiredness.

Secondly, sarcopenia is an important issue as well. It is defined by a loss of muscular mass, followed by a decrease of performances. There are several causes, as an unhealthy diet, cellular problems, such as mitochondrial dysfunctions, hormones, decrease of motoneurons, decrease of myofibrils synthesis, problems in signaling pathways, or lack of physical activity. These parameters engender a decrease of endurance and organism stock, frailty, and dependency. A way to fight against sarcopenia is to increase the protein intake, and to supplement alimentation with essentials and branched amino acids, omega 3, and vitamin D. Moreover, some studies have already shown that physical activities potentiate the effect of supplementation.

Thirdly, undernourishment is linked with a loss of weight and of energy, and an impairment of protein transport. The consequences are an increase of morbidity, of infections, fractures, and sensitivity to medication toxicity. However, under nourishment must not be confused with cachexia, which is a decrease of energy intake, and an over activation of inflammatory system, increasing neoglucogenesis, lipolysis, and catabolism. Cachexia induces a chronic inflammatory response, modifications in body composition, and anorexia.

These specific pathologies will become an important issue in our societies, and a way to fight it is to define a specific diet for elderly people, and to help them eating in a healthy way, and with pleasure.



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**Emmanuelle KESSE, INSERM / Research Center in Human Nutrition –
*Impact of Nutritional recommendations on ageing:
Example of the cognitive performances***

Cognitive degenerations from elderly is a complex path physiology that there are no biological markers. Observational and RCT studies are useful to know the impact of nutrition on these declines in cognitive performance. Several hypotheses exist regarding the preventive effects of certain nutrients such as B vitamins, omega 3 and antioxidants, but research is still no consensus, although the Mediterranean diet has been highlighted.

The SU.VI.MAX, conducted from 1994 to 2002 on 13 000 individuals, was to evaluate the preventive effects of antioxidants (vitamins and minerals) at nutritional doses, on cancers and cardiovascular diseases.

The objective of KESSE's was to verified if individuals were following more precisely the recommendations from PNNS (French National Nutrition and Health Program); they retained their cognitive abilities more than those who consumed more distant from these recommendations.

Data of alimentary consumption of the study SU.VI.MAX; have been used and transcribed as a score giving an indication of compliance or recommendation from PNNS (PNNS guidelines score). Tests of cognitive performance by a neuropsychological assessment were performed on individuals now older.

It was noted that the part of the population consuming attentively regarding the PNNS recommendations are mostly women and senior citizens non-smokers and people with high education level.

They concluded that a diet in line with the recommendations of PNNS, improved cognitive performance through improved verbal memory, which is the first to be affected in cognitive decline.



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Adam DREWNOWSKI – University of Washington Taste and food choices in ageing

When we speak about food and elderly, we generally associate ageing with a decline of two important senses: taste and odor and an inevitable loss of weight. In his presentation, Adam DREWNOWSKI focused on these problems and tried to establish a link between food preferences and taste and odor functions in ageing.

Thanks to a physiological approach and the help of experimental trials, he explained that bitter is the principal taste touched by ageing. In this way, typical components, responsible of the bitter sensation, are judged less bitter in intensity and more enjoyable for over sixty year-old people than for the rest of the population. In consequence the preference of coffee, endive and Brussels sprouts- which are bitter products-, is acquired with age and the vegetable become more appreciated. In the case of odor sense, the identification and the memorization are also more difficult while ageing. A recent study explains that the capacity to recognize odors can be linked with the chances of survival/morbidity.

Even if older adults are more likely to be overweight, Adam DREWNOWSKI underlined that the energy intake and the volume of food consumes, for a same nutrient composition, decline with age.

The 2010 Dietary Guidelines propose for this kind of population; food with high macro and micro nutrients density, micronutrients are particularly helpful for older adults (minerals and vitamins). Finally, Adam DREWNOWSKI concluded his presentation with an important precision: other factors can influence the food choices in ageing: the generational factor was for example underlined.



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**Philippe CARDON, University Lille 3 / INRA ALISS –
Does eating get to be a problem when ageing?
Culinary practices and food sociability of elderly**

His researches concern the dietary behavior and the agriculture sociological through the sociology of the family, the type, the ageing and the public politics. His current works are the transformations of the food of the old persons as well as the impact of the public politics in food.

During his intervention *“Does eating get to be a problem when aging? Culinary practices and food sociability of elderly”*, Philippe Cardon exposed the impact of the age on the food and on the culinary practices. The biological, psychological and social factors transform the food and the culinary practices at the old persons. Philippe Cardon presents this evolution during various studies based on statistical then ethnographical data in France. The statistical data were resumed by previous three studies carried out between 2001 and 2010. Then, the ethnographical data were collected during semi-directives interviews with 80 couples between 2005 and 2009, in diverse French regions. These interviews were coupled with an observation of the material composition of the home, and more exactly the cooking, as well as the list of the meals taken by people interviewed. First, this study presents the impact of social factors, and more particularly the economic status, the type of housing environment and the region. Then it proposes a typology of consumers (Strong /Medium/Weak consumers). Secondly it presents the real impact of the modifications of life of the old persons on their food and culinary practices as far as it is advanced.

Essentially of in biological and physiological factors, these modifications of life echo on the modes of supply and preparation by a delegation of the purchase and the important preparation. A typology of consumers being in couple defined as well as the old persons complicate or simplify their meals according to social and occupational, biological and psychological determiners, in particular those of the woman.

The conclusion of this study presents the fact that the food activities on sociability of elderly depend of culinary dependence types of care.

The definition of the importance of the sociological and biological factors in the food structuring of the decision-making was the main point of Philippe Cardon's intervention.



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Laure SAULAIS, Institut Paul Bocuse Research Centre –
The effect of physical environment on nursing home residents' eating pleasure

Earlier presentations at the symposium highlighted physiological changes in ageing that present challenges and issues. Laure Saulais discussed her research on improving the physical eating environment for residents of long-term care homes; as an opportunity for health professionals to enhance the experiences of residents and perhaps address help some of the challenges related to eating.

Previous research has shown that mealtime, meal pleasure and the quality of food all affect resident food intake and satisfaction. The quality of the eating environment also needs to be addressed. Many participants in this study chose to eat in their rooms rather than in the facility restaurant, but when the ambiance was improved, more residents chose to eat in the restaurant. Social interaction is an important part of healthy ageing, and mealtime is a good way to encourage this.

Laure SAULAIS researched the ways in which the eating environment, in particular the dining room ambiance, can be improved. In order to understand the affects of ambiances on residents' desire to eat and pleasure of eating, four aspects were considered: lighting, sound/noise, room décor, and tabling setting/tableware.

This project was undertaken in two phases. Phase 1 looked at residents' perception of current ambiance in the long-term care homes and resident preferences for ambiance components (desire for a change, expectations for a new ambiance). Exploratory interviews were conducted at 3 sites in Rhône-Alpes, for all 4 ambiance components being studied, by medical staff right after lunch. Participants were autonomous or in need of limited or occasional assistance only.

Results of phase 1 showed that quality of food and relationship with personnel are the two most important parameters for residents. Ambiance was mentioned by over 48% of participants as an important parameter, and over half answered that their overall desire to eat in a restaurant would increase with a change in ambiance. There appeared to be two distinct segments of residents: the group that really enjoys the experience of eating, and the group that will always find it to be a burden.

Residents were most interested in the direct environment; décor on the table or noise close by, as opposed to wall color or service noises. Residents also expressed that a full change in ambiance would be necessary to have an affect, not just one aspect (not specific). Lastly, results showed that ambiance change would most affect those who have been residents for an intermediate length of time.

Phase 2 will include a larger sample, more sites and 3 ambiance scenarios implemented for a customized approach. Based on the results from phase 1, changes will be to all aspects of the environment, but will be focused on the direct environment as opposed to the outside. The goal of this broadened approach will empower residents to make their own choices to improve the eating environments in their homes.



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**Anne BABKINE, Elior Group Healthcare Division –
*Senior's dependence and food offers based on modified textures***

Anne Babkine, Elior's marketing director, presented new solutions to help people during normal and pathological aging to eat. These solutions are all developed in Elior, the third operator in Europe for contract catering and related services. It takes part in the care for hospitals, clinics, healthcare institutions, retirement homes and nursing homes.

Mealtime is a moment of enjoyment and represents more than 50% of the active period. However elderly people can't appreciate this enjoying moment because they have a poor appetite, chewing and swallowing difficulties and cognitive impairments. The role of the caterer is to create a moment of sharing and enjoyment whilst meeting the challenges of the elderly. Thus elderly people could get a sufficient food intake and avoid undernourishment and its consequences (increase risk of falling, fractures, infections ...).

To respond to the difficulties with chewing, swallowing and poor dental health, 4 different types of textures could be proposed to elderly persons (minced, mixed, semi-liquid or liquid). Everybody can eat "les faciles à manger" in all forms which avoid discriminating residents. These formats enable retirement home chefs to prepare special minced, pureed or mousse versions of the day's general menu enabling residents with eating difficulties to eat the same food as the others and rediscover a wide range of flavors. 30 different procedures have been developed to be able to supply any type of dish in mixed form.

With cognitive difficulties, like in Alzheimer disease, there is a loss in autonomy, coordination, concentration and the knowledge about how to use a knife and a fork.

These patients become dependent, and can not eat those "les faciles à manger" which need the use of cutlery. The solution is "bouchées saveurs" which are mixed food in small pieces and which can be eaten with fingers or a pre-cut in the kitchen just before being served. With these "bouchées saveurs" elderly persons rediscover the pleasure of eating in a relaxed environment with the minimum of help. It encourages autonomy and enjoyment of eating. People can eat at their own speed with a variety of forms.

Some persons need a real enriched and qualitative meals, so there is "nutri-saveurs" to help avoid malnutrition by providing 20% additional protein and calcium on top of the recommended daily nutritional requirements.

Thus elderly people can now eat alone even if they have poor dental health, chewing and swallowing difficulties and even if they can't use cutlery.



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Philomène BAYET-ROBERT,

Institut Paul Bocuse Research Centre / Relais & Châteaux / University of Lyon 3 –

***Meal experiences of Senior Customers at Grands Chefs Relais & Châteaux Restaurants:
a focus on food concerns***

Regarding the current evolution of global population ageing, potential food concerns for the specific segment of seniors (65 years old and more) becomes a raising issue. Eating out is a type of food consumption which may retain attention, either for the restaurant industry itself, but also for academics, interested in Consumer Behavior science. In the restaurants, several surveys show the importance of food offer for seniors, especially ingredients, environment, and quality/price ratio. Some companies already propose special offers dedicated to their older customers, such as Denny's in the USA (*Nation's Restaurant News, 2010*).

This issue of eating out for seniors exists also in a specific restaurant sector, gastronomy, where meal might be more considered as an experience rather than only a way of feeding oneself. An experience shall provide emotions and fantasy, driven by tangible, environmental and relational parameters, and can be captured thanks to its individual perceived meaning (*e.g., Filser, 2008, Roederer, 2008*). This research aims at understanding and identifying the main aspects of a gourmet meal experience for a population of Seniors, focusing on food concerns, thanks to questioning on memories of the most recent gourmet meal. According to the analysis of a double data collection (qualitative with interviews, and quantitative with 259 repliers of an on-line survey, both approaches conducted in French, English and German), results show some specificities in the 65 year old (and more) respondents.

First of all, in the survey, 'Cuisine and Wines' is the first ranked item mentioned in the recall of the last meal (33% of the sample). Concerning food aspects of the meal, 61% of seniors have quoted the taste, 47% the presentation of the dishes. Texture of the food, smell and wines are also mentioned in more of 20% of the cases, which implies the importance and memorization of sensory parameters for these customers. Qualitative data confirm those results, and go even further in two specific points: rational memories of food regarding quantity served and price paid, compared with more experiential behaviors, such as discovery of unusual ingredients and recipes, or importance of wine-pairing during the meal.

These results show a combination of rational and experiential behaviors from seniors regarding their memories of a gourmet meal. It might help to exceed prejudices, when one thinks that seniors eat rather food they already know, or do not drink much wine anymore. Extending this study to other cultures could also help to identify market levers. And then, even if this research is limited and still in progress, it provides operational perspectives to a specific offer dedicated to seniors, if they interpret their experiences in a significantly different way than other segments of consumers.



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Margaret LUMBERS, University of Surrey –
Food preferences of older people living in care homes

Margaret Lumbers closed the Symposium with a talk considering 2 projects within which she works. The first project - Food in Later Life, an European project – took place in 2003-05. To this project, 8 European Countries were involved: UK, DE, SE, DK, IT, ES, PT, and PL. The second project was a study of food preferences in care homes in the United Kingdom.

Looking at demographic evolutions, Margaret LUMBERS underlined as others speakers during the day, the importance to pay attention to eating preferences and behaviours of older people. In the United Kingdom, they estimate that in 2030 it will be 80'000 older people. So it is necessary to think about the food in this population. Public and private sectors will be more and more seeking in order to satisfy the needs of elderly persons. They need a particular attention because of the strong relationship between their health and their specific life situations. Nutrition and eating practices seem to be a central issue of the possibility to improve their quality of life.

In introduction, Margaret LUMBERS highlighted how beliefs and eating behaviours evolve during life cycle and how food culture in the UK has quickly evolved during last decades, with an increase of convenient food and fast-food consumption. It is important to study food and eating behaviours in this specific age group and to consider differences between diverse generations of seniors.

Differences concerning the childhood memories observed in the countries; involved in the study, have been underlined for the first project. For example, older people talked about the memory of pleasure in Poland, the perception of important changes in food culture in Spain and differences of food habits between daily and special occasions in Portugal. Another point that Margaret LUMBERS treated was the diversity of perceptions and beliefs about health food in the countries; involved in the project.

After a short introduction of the second project, the speaker showed the main results collected through interviews and focus groups with residents and staff in care homes in UK, such as eating routines, food satisfaction, and ambience in meal room, relationships with other people, etc.

In conclusion, she underlined that older people living in care homes are strictly dependent to other people for their food choice. Moreover, they are quite critic about food they have to eat in care homes. For example, they would prefer to eat home made food than food delivered hot. Meal is an occasion to interact with other residents. It is crucial to consider that food and meals are central daily time; within, it is possible to prevent social isolation.



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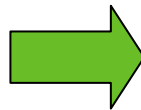
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The culinary demonstration



The participants were dumb in front of so much talent!



Then the day finished with a cocktail in the best atmosphere!

