SENECA

RESEARCH INTO ACTION

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Written for SENECA by

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This publication is based on:

- EURONUT-SENECA, Nutrition and the Elderly in Europe (eds. Lisette CPGM de Groot, Wija A van Staveren, Joseph GAJ Hautvast). Eur J Clin Nutr 1991; 45 (suppl.3):1-196.
- Louise Davies. Easy Cooking for One or Two. (Penguin Books, Revised Edition 1988).*
- Louise Davies. Easy Cooking in Retirement. (Penguin Books, 1993).*

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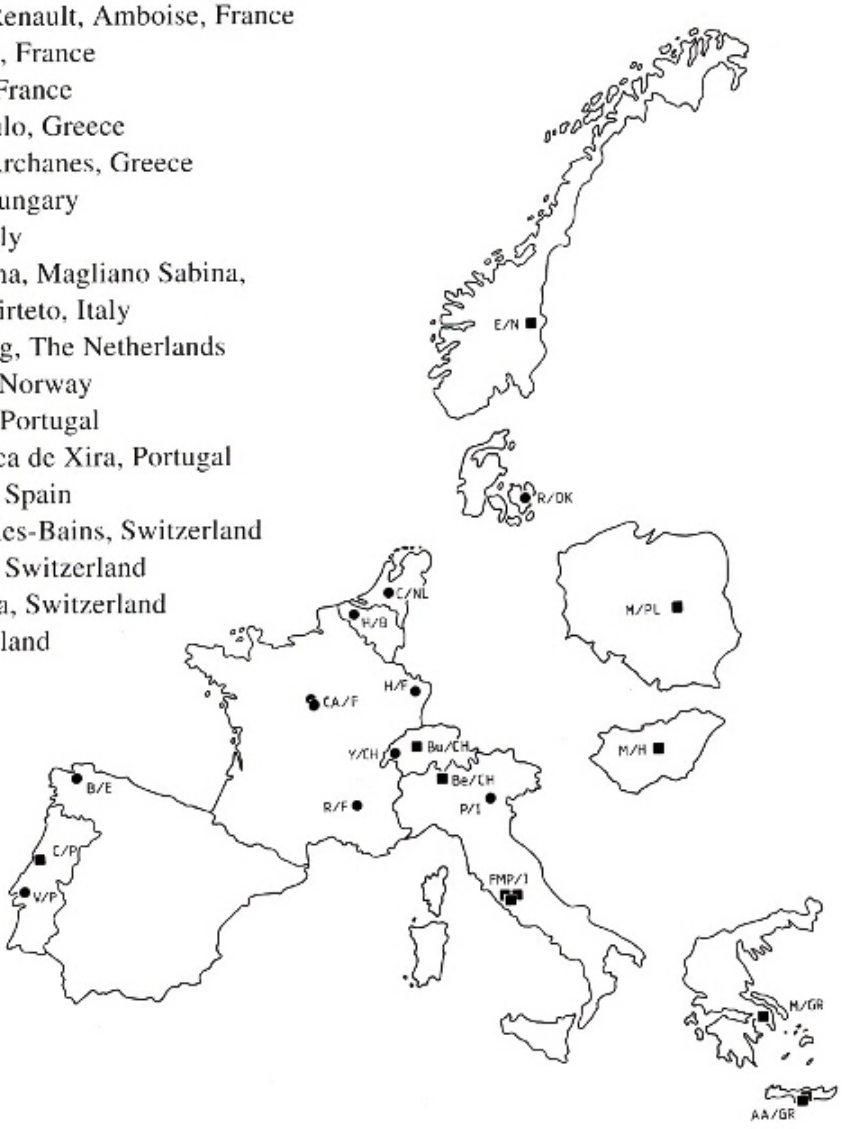
1 Introduction

This booklet is written for those who care for elderly people: family, neighbours and friends as well as professional health workers. It summarizes the results of the SENECA surveys and attempts to bridge the gap between research findings and practical action. The SENECA participants have demonstrated that old age can be reached with a wide variety of diets. Therefore, when offering advice to elderly individuals, introduce dietary changes with care and in close consultation with the elderly person.

H/B = Hamme, Belgium
R/DK = Roskilde, Denmark
CA/F = Chateau Renault, Amboise, France
H/F = Haguenau, France
R/F = Romans, France
M/GR = Markopoulo, Greece
AA/GR = Anogia, Archanes, Greece
M/H = Monor, Hungary
P/I = Padua, Italy
FMP/I = Fara Sabina, Magliano Sabina, Poggio Mirteto, Italy
C/NL = Culemborg, The Netherlands
E/N = Elverum, Norway
C/P = Coimbra, Portugal
V/P = Vila Franca de Xira, Portugal
B/E = Betanzos, Spain
Y/CH = Yverdon-les-Bains, Switzerland
Bu/CH = Burgdorf, Switzerland
Be/CH = Bellinzona, Switzerland
M/PL = Marki, Poland



■ What are the SENECA surveys?

In 1988 a major European multi-centre study, named SENECA was initiated. SENECA stands for **S**urvey in **E**urope on **N**utrition and the **E**lderly: A **C**oncerted **A**ction. Appropriately, SENECA was also the name of a philosopher whose work reflects wisdom. The aim of SENECA is to study cross-cultural differences in nutritional issues and life-style factors affecting health and performance of elderly people in Europe. In the surveys, 2,586 elderly subjects – born between 1913 and 1918 –were studied in 19 towns across Europe (see map). Data regarding nutrients and food intakes, diet habits, diet awareness, nutritional status, health, and life-style factors were collected.

■ How did the SENECA participants judge their health?

Despite the high prevalence of chronic diseases (59-92%) throughout the survey population, most people perceived their health to be good. This may appear to be contradictory, but it shows that elderly people can continue to function normally in their daily activities and live happily even with one or more chronic diseases.

2 Meal patterns across Europe

The wide variation found in meal patterns emphasises that food choice is largely influenced by the culture in which we live. Among these men and women, born in 1913-1918, their meal patterns probably represent a continuation of their former meal routines and food habits. We do not know how they differ from those of the younger generation of the towns, especially concerning the practice of eating soup in the evening.

■ What did the SENECA participants have for breakfast?

- *A meal based on bread or biscuits*
  This was the choice in the Mediterranean survey towns.

- *A wide variety of foods – including cheese, cold meats, eggs*
  This was the choice in the Belgian, Dutch and Norwegian towns.

- *What about fruit juices or cereals?*
  This was not routine in any of the survey towns, although it is a typical breakfast choice in English speaking countries.

■ What did they have for mid-day meal?

• *A bread-based meal or a combination of bread-based and cooked meal*
These were the rule only in the survey towns in Denmark and The Netherlands.

• *A cooked meal*
Cooked mid-day meals were eaten in all the other survey towns. They usually consisted of more than 1 course. The most often cited entrées were soup, salads, vegetables, pasta or rice; main courses nearly always included meat or fish; these were often followed by fruit or milk-based desserts.

■ What did they have for an evening meal?

• *Soup*
This was the main constituent in 8 of the 9 'Latin' survey towns.

• *Bread-based meals*
These were served mainly in the North.

• *Left-over or freshly cooked meals*
All the survey towns served these as variations to their usual evening meal.

Probably the best method to encourage adequate nutrient intake is to advise a varied diet in terms of the locally popular foods and recipes, and to make them readily available in quantities suitable for those elderly people who are catering for one or two. However, many elderly people might welcome new healthy ideas introduced from younger generations and from the rest of Europe. You may be able to tempt them to enjoy a nourishing diet by introducing easy, economical recipes, matched to their physical and mental capabilities.

3 Over what period did they eat?

In most of the research towns meals were eaten over a ten-hour period, from 7-8 a.m. through to 6-7 p.m. In some of the Southern towns this was prolonged to a twelve or thirteen-hour period.

4 How frequently did they eat?

The frequency of meals varied considerably between the survey towns. In the Eastern sites, in Hungary and Poland, the majority ate 3 times a day or less, whereas in the Dutch and the German-speaking Swiss towns, more than 50% of participants consumed food on 6 or more occasions daily, a few eating 8 times a day.

It would be of interest to study the influence of nibbling. In the paragraph on obesity we point to the possible value of frequent small structured meals during the day to maintain weight. Long gaps in the day without food or beverages (i.e. missing out meals or snacks) may be a sign of low nutritional status and poor health (or merely a sign of satiety after a good meal !).

Thus questions about the frequency as well as the content of meals are important: they may help you to uncover poor health, or social, psychological or budgeting problems.

5 Where did they eat?

In most of the survey towns the great majority of participants always ate at home and preferred to do so. In the Swiss towns, 10-30% ate regularly at restaurants; a similar proportion of the elderly people in the Greek and Polish survey towns regularly ate at the homes of their children. Fast-food restaurants were obviously not very popular amongst the elderly people in these 'traditional' survey towns. Meals on wheels and meals offered by organisations for the elderly were reported only exceptionally, and may not be available in several of the survey towns. The possible local need for them could be investigated.

6 Are there links between shopping, budgeting and social contacts?

Shopping was not a great problem in the SENECA studies, because the investigations took place in small towns with nearby shops. Where shopping problems existed, they were mainly linked to low income and lack of social contacts.

In three towns (the sites in Hungary, Portugal and Poland) social contacts were distinctly less frequent than in all other towns, and participation in community activities were virtually non-existent. These were the same towns in which substantial groups reported food budgeting problems.

Social contact with elderly people may be important to uncover their need for extra nourishment. Are they avoiding nourishing food because of price? illness or convalescence? chewing difficulties? medication? constipation? incapacity? bereavement,

depression or loneliness? or merely because they cannot be bothered to cook just for themselves?

Social contact – perhaps including eating with friends – may help them to enjoy meals and to budget for nourishing foods.

7 When can living alone affect dietary intakes?

Acute nutritional deficiencies are to be expected if elderly people living alone become ill and cannot rely on help. Long-term deficiencies can result if they do not know neighbours who might help with shopping when the weather is too hot, or when the roads are icy, or when they feel too tired to carry home a full load. In Southern towns most elderly participants lived with their families; the number of subjects living alone was high in Northern towns, but only a small minority was isolated in the sense of knowing no neighbours or having no social contacts. It was strongly recommended that the dietary intake and health of isolated people should be investigated.

8 What about drinking?

We need at least 1½ litres of non-alcoholic fluid a day for optimum health, even if incontinent or taking diuretics. Fluids can come from beverages and foods, so the daily 1½-2 litres recorded for most subjects in the SENECA survey were more than adequate. However in old age the sense of thirst sometimes diminishes so it is extremely important to check that sufficient drinks are being taken throughout the day.

Unfortunately alcohol – although it may have some advantages – increases dehydration and this can cause headaches and confusional states. In the majority of the survey towns there were elderly people – especially the men – who were drinking alcohol most days, sometimes with friends, sometimes on their own. It is notoriously difficult to advise on the acceptable level of alcohol intake for individuals, as there is no such thing as a safe amount of alcohol.

It is generally agreed that smoking and drinking represent risk factors, to be evaluated with other risk factors (e.g. low physical activity, obesity, diabetes and some nutritional disorders). The data collected in the SENECA study has made it possible to identify subjects who drank regularly but in small quantities. There is a possible beneficial effect of this habit, in the absence of other risk factors.

9 Where they overweight/ underweight?

Among the participants in SENECA we found both extremes: the very heavy and the very thin, but in all the research towns there were variations between these two extremes. Longitudinally (1988-1992) there were a few changes, but not in one direction: some lost weight and others gained.

There was a prevalence of *extreme thinness* in the elderly participants in Norway (men), Hungary (men), Poland (men) and on Crete (men and women). The research sites at which *obesity* was prevalent (for both men and women) were Poland, Spain, central Italy and the mainland of Greece.

Extreme thinness can indicate low body reserves and possibly malnutrition. It may be a sign of emotional or environmental problems or of an ongoing and as yet undiagnosed disease.

Obesity can pose a serious health risk. It may be medically necessary to lose weight if it is interfering with mobility or impending surgery, or if excess weight is exacerbating conditions such as diabetes, arthritis, high blood pressure or coronary heart disease. Advice that could be given: do not cut out meals; eat frequent but small meals (try using smaller plates); cut down high-fat items, high-sugar foods and alcohol.

Mild overweight in elderly people can be a sign of good health. It is not generally a health hazard and if metabolism has slowed down with age, the effort of dieting may not be worth the results obtained.

In old age it may be more important to maintain one's normal weight, rather than to attempt drastic alterations. However, if there has been an unintended weight change it should not be dismissed as 'just old age': it needs to be observed, reported and investigated.

10 What is nutrient density?

Elderly people with a small food intake are the most vulnerable to nutrient deficiency. For those with small appetites it is especially essential to choose nourishing foods because even if they need fewer calories they still need the same amounts of vitamins and minerals, i.e. foods with a high nutrient density. In the SENECA study,

the diets of the elderly participants in most sites did not meet the nutrient densities recommended by Nordic countries. In general men were eating more food than women, but – except for iron – the women in most of the survey sites had a higher nutrient density than the men, due to a wiser selection of foods. This has also been noted in other studies.

■ Nutrients at risk

Notably low values of vitamin B_2 and calcium were found in countries where less milk is consumed e.g. Belgium, France, Hungary and Italy. Rather than attempting to change in-built cultural practices it could be more effective to point out that 'there is no food that you must have'. There are always alternatives, and for calcium these could be fish consumed with their bones (e.g. canned sardines and very small fishes eaten whole) vegetables and nuts. Where milk might not be popular, other dairy foods, such as cheese or yogurt may be more acceptable.

Low values were found for all the B-complex vitamins, especially vitamin B_6, in most of the countries studied. Vitamin B_6 is spread through many foods so why these values are low is not yet well understood. Those who are not eating much food would be particularly vulnerable to B_6 deficiency. Therefore the best advice that can be given is 'keep up an interest in food'; 'eat something of everything but not too much of any one thing'.

The problem of low values of vitamin B_{12} is somewhat different. This is a vitamin available only from animal products such as milk, fish and meat and may therefore not be readily available in the diet of vegetarians. Vegans – who avoid all animal products, including milk – essentially need vitamin B_{12} supplementation.

■ Calcium, vitamin D and sunlight

Calcium intakes below the lowest European recommendations were found, for men, in the survey towns in Hungary, Belgium and France; in women similarly low intakes were found in some of the survey towns in Greece, Portugal and France. To replace the calcium that is constantly lost from the bones, it is prudent to keep up the intake of calcium rich foods (see previous page). It is still being argued whether supplements of calcium can be effective in preventing significant bone loss (osteoporosis) in old age. Vitamin D, as well as calcium and physical activity, is needed for bone strength. There are a few good food sources (such as fatty fish) but the main source is the action of sunlight on the skin.

Surprisingly the lowest blood values for

vitamin D were observed in the sunny survey towns in Greece, Italy and Spain. Those elderly subjects in the Northern European countries, who used vitamin D supplements and sun-ray lamps, and who regularly spent their holidays in sunny places, had on average higher vitamin D levels than the remaining elderly people. These results suggest somewhat different attitudes towards sunlight: elderly people living in the Southern European countries more often tried to avoid sunshine. Obviously, with current concerns about risk of skin cancer versus risk of osteoporosis, the message is again one of moderation: don't overdo the sun bathing but do enjoy sufficient sunlight.

■ The nutrient supplement paradox

There was large variability in supplementation practices between the different research sites, even within a country. In the Northern research towns, supplements were used more than in the Southern towns.

Paradoxically those who were not at risk of nutrient deficiency due to their diet were the very people who were taking most supplements ! There seemed to be no nutritional basis for their choice. For instance in the towns with the highest dietary intake of vitamin A (in Denmark and Norway) this nutrient was used as a supplement just as much as vitamin C of which dietary intake was relatively low. Conversely, in some towns in Hungary, Greece and France where many elderly people had vitamin or mineral intakes below the standards, the use of supplements was low or nil.

Women did not take more supplements than men, contrary to the usual reports. Some nutritional supplements were taken by both men and women in large quantities, with a risk of toxicity if used for a long time. Quite apart from the health hazards, supplements can be expensive. If elderly people think that they need them (in the absence of medical advice) they should be assured that all the vitamins and minerals are available in easily prepared foods. For instance vegetables are a rich source of ß-carotene and vitamin C and other important nutritional components. A diet rich in vegetables, as in some countries in the South, need not be supplemented with vitamins A and C. Elderly individuals may therefore need to be led into discussions about what could be wrong with their food choice and meal patterns (or with their lifestyle, including exposure to sunlight), and how it could be put right.

11 Fat and heart disease

The highest consumption of olive oil and of polyunsaturated fats was found in the Mediterranean survey towns. The participants in these towns had, on average, lower serum cholesterol levels.

Cholesterol is a normal constituent of body tissues, with many essential functions.

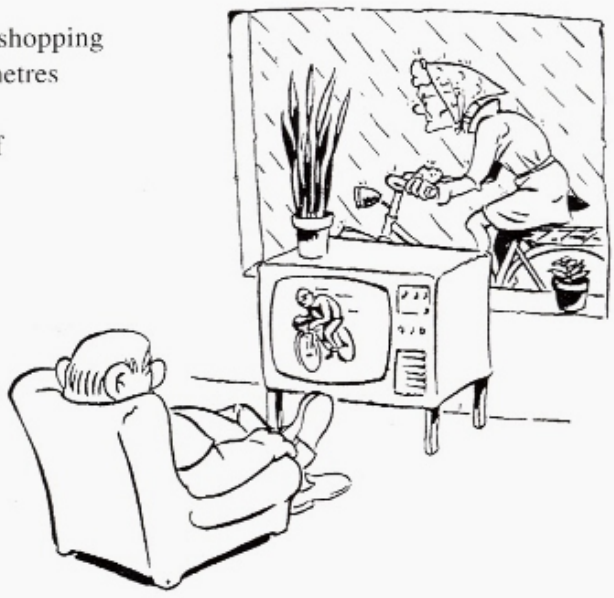
But too much can narrow the blood vessels and damage the heart. Polyunsaturated fats, fish oils and olive oil, have all been recommended for prevention of coronary heart disease. But the advice is: do not over-indulge in any of them – moderation is the key.

12 Physical activity and activities of daily living

As might be expected, large variation in both levels of physical activity and activities of daily living existed among the research towns. In general, women spent more hours per day on physically active tasks than men, including more time on housework and on leisure time activities.

To assess activities of daily living, a number of items were used in the SENECA questionnaire. These could equally well be used by health workers: they might be useful when checking on the functional ability of elderly people. Where appropriate, ask them if they can perform the following activities:

1. Move outdoors
2. Walk between rooms
3. Use stairs
4. Walk at least 400 m
5 Carry a heavy object, e.g. a shopping bag of 5 kg, for a hundred metres
6. Use the toilet
7. Wash, or wash/bath yourself
8. Dress and undress
9. Get in and out of bed
10. Cut toe-nails
11. Use the telephone
12. Take own medication
13. Manage finances
14. Feed yourself
15. Do light housework (wash dishes, sweep floors)
16. Do heavy housework (wash windows and floors, general house cleaning)



In addition, it might be important to ask whether they need extra help with food shopping, preparation or cooking.

Functional capacity was rated as good in most of the elderly SENECA participants, but especially so in the men and the younger elderly born in 1917 or 1918.

■ Work activity

In some survey towns, a high percentage of participants who – it should be remembered -were aged 70-75 years, were still undertaking work activity. More men than women still had a job, either full-time or part-time.

■ Sports activity

Participation in sports varied from 0% to 43%. Those engaged in sports (more men than women) did this for 0.5-4.6 hours/week, with light or moderate intensity. The sports most commonly enjoyed were cricket, golf, gymnastics and swimming.

■ Gardening

Gardening was very frequent in most centres. As well as being an important physical activity, gardening was used as an economical and enjoyable means of supplementing supplies of vegetables and fruits.

For all elderly people physical activity should be encouraged. Even the chairbound can be taught suitable exercises. It seems likely that physical activity is an important indicator for wellbeing in old age.

For detailed information the reader is referred to:

EURONUT-SENECA, Nutrition and the Elderly in Europe
(eds. Lisette CPGM de Groot, Wija A van Staveren, Joseph GAJ Hautvast).
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