# FOOD FOR OLD PEOPLE*

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## HISTORICAL BACKGROUND

An interest in the special nutritional problems of the aged is as old as the art of medicine. The fourteenth aphorism of the Hippocratic collection[1] (about 430 B.C.E.) includes the observation that:

> 'Old men have little warmth and they need little food which produces warmth; too much only extinguishes the warmth they have.'

During the second century of the Christian Era, Galen — after Hippocrates the greatest figure in classical medicine — wrote about the dietetics of old age. In his book *On Hygiene*[2] he records with approval this account of the eating habits of one of his elderly colleagues:

> '... It is safer to give weak old men small amounts three times a day, as Antiochus the physician dieted himself, for when he was more than eighty years old, he went out every day into the forum to the place where the council of citizens was, and sometimes went a long way for the purpose of visiting the sick. But he walked on foot from his home to the forum, a distance of about three stadia, and thus he also saw the sick nearby. But if he was ever obliged to journey farther, he was sometimes carried in a chair or driven in a chariot. And he had in his home a chamber warmed from a fireplace in winter, and in summer having fresh air without the fire. Here he spent his mornings and was massaged winter and summer, after his toilet. And in his place in the forum, about the third hour or at the latest about the fourth hour, he used to eat bread with Attic honey, generally toasted, but more rarely raw. And after this, sometimes conversing with others, and sometimes reading by himself, he continued until the seventh hour, after which he was massaged in the public bath and performed the exercises proper for an old man, about the kind of which we will speak a little later.
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> 'Then having bathed, he lunched temperately, taking first laxative foods, and then chiefly fish, both rock-bass and deep-sea fish. And then again, at dinner, he refrained from eating fish, but he used to take something soft, well-mixed, and not prone to ferment, such as barley with honey-wine, or some game-bird with a simple sauce. So, caring for himself in this way, Antiochus continued until the last, unimpared in all his senses and with all his members intact.'

Like all his other opinions, Galen's views on dietetics were taught religiously throughout the middle ages both in Europe and in the Arabic world. Avicenna, the prince of Arabic physicians, wrote a *Poem on Medicine*[3] early in the eleventh century and expressed the Galenic doctrine in these words:

> 'Old people see their strength declining and their condition deteriorating from day to day. They are advised to take strong foods in small amounts only — so as not unduly to weigh down their organs.'

Unfortunately, this doctrine was more widely preached than practised. There are many accounts left to us from mediaeval and also from renaissance Europe of the gastronomic excesses of those who could afford it. Thomas Elyot,[4] an intellectual dilletante at the court of King Henry VIII, may have had his corpulent monarch in mind when he wrote:

> 'Always remember that aged man should eate often, and but litel at every time; for it fareth by them as it doth by a lampe, the lyght whereof is almost extincte, which by

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pouring oyle and litel is long kept bourninge; and with much oyle poured in at once it is clene put out.'

Of all the renaissance writers on nutrition for the aged, the most influential was neither a physician nor a philosopher, but a wealthy businessman of Padua, Luigi Cornaro (1467 - 1565).[5] He was a patron of the arts (one of his villas was decorated by Raphael) and he enjoyed to the full all the sensual pleasures which were available to him. However, when he was about 35 years old, his health failed:

'I fell into several distempers, such as pains in the stomach, the cholick, and the gout. I had a lingering fever and an intolerable thirst continually hanging upon me.'

The physicians feared for his life and warned him that only by drastically changing his way of life, would he have any hope of recovery. He took their advice very seriously and established for himself an orderly and temperate routine of living. In particular, he adopted an extremely frugal diet consisting, daily, of 4 ounces of bread, 4 ounces of panado (a broth containing an egg) and 4 ounces of meat (either veal, or lamb or chicken), together with 14 ounces of new wine. This provided a little less than 1,000 calories daily, but from then on his health improved, and for many years he was able to attend to his business and domestic affairs and to his many intellectual pursuits. When he was 70 years old he met with a serious accident — his coach horses bolted and he was thrown about to such an extent, that

'they took me out of the coach, with my head broken, a leg and an arm out of joint, and, in a word, in a very lamentable condition.'

The physicians who were summoned did not expect him to live for more than three days, but his powerful constitution helped him to pull through with no residual ill-effects.

The virtue of his regimen was again demonstrated when he was 78 years old. His friends and doctors persuaded him to increase his diet; reluctantly, he increased his intake of solids from 12 to 14 oz. and his consumption of wine to 16 oz. This had a disastrous effect:

'At twelve days end, I was taken with a violent fit of the cholick, and that followed by a continual fever, which tormented me five and thirty days together, and for the first fifteen days put me into such an agony, that it was quite impossible for me to take a quarter of an hour's sleep at a time.'

He returned to his original regimen and was soon well again. When he was 83 years old he published his first *Discourse on the Temperate Life*, and at the ages of 86, 91 and 95 he published further discourses. Eventually, having achieved 98 years, he died very peacefully in his sleep.

Cornaro's discourses were widely read and frequently republished. More than 50 editions are known and they were being quoted and commended until late in the 19th century. The development of modern scientific nutrition rendered the discourses obsolete. Yet Cornaro's views, like those of Hippocrates and Galen many centuries before him, were fundamentally sound and are still the basis of geriatric nutritional practice today.

## NUTRITIONAL PRINCIPLES

### *Calories*

Few obese persons survive to old age, and as far as caloric requirements are concerned undernutrition is the more usual problem. The basal metabolic rate of elderly folk is about 10 - 12% less than that of younger adults. Their basal caloric requirement is therefore proportionately less. The activity of simply being 'up and about' increases the caloric requirement by about one-third, but usually no further allowance need be made for the energy used in working. The average daily caloric requirements of middle aged and elderly persons is as follows:

| | | *Middle age* | *Old age* |
|---|---|---|---|
| Men: | Basal | 1,680 | 1,500 |
| | Up and about | 2,240 | 2,000 |
| | Working | 3,000 | — |
| Women: | Basal | 1,350 | 1,200 |
| | Up and about | 1,800 | 1,600 |
| | Working | 2,500 | — |

The reduced caloric requirement after the retiring age is sometimes forgotten, and some people who have successfully avoided obesity in middle age may put on weight if they do not alter their eating habits. On the other hand, elderly folk who cannot care for themselves and are neglected may be starved to a state of advanced debility if this limited caloric requirement is not fulfilled.

### *Protein*

Although the rate of tissue growth is slower in old age than at any other period, replacement of worn-out tissues, particularly connective tissues, continues unabated and the demand for protein does not decrease with advancing years. One of the factors in the pathogenesis of senile osteoporosis — a very common disease of old age — is dietary protein lack. Many of the common complaints of elderly patients — backache, stiffness, 'neuritis', etc. — are the consequence of osteoporosis, in which the basic lesion is a deficiency in the protein matrix of bone. There are many factors in the pathogenesis of this disease, including endocrine deficiency, inadequate exercise and insufficient calcium; but protein lack undoubtedly plays a part.

The minimum daily protein requirement for an old person is about 60 G., but the *optimal* intake should be nearer to 100 G. Protein-rich foods are usually regarded as expensive and beyond the means of an old-age pensioner. This is not true; there are many cheap forms of meat — liver for example — which are full of good protein. Fish is another excellent and inexpensive source, and among the dairy products, the nutritive value of skim-milk and skim-milk cheese is seldom appreciated by old folk. The best protein comes from these animal sources, but vegetable protein should not be neglected; of these, peas and beans are most useful.

### *Fat*

The dietary fat almost certainly plays an important part in the pathogenesis of atherosclerosis, another of the very common diseases of old age. Prudent patients are advised to restrict their fat consumption — and this is good advice. However, it must be remembered that fats

are a major source of calories and the only natural vehicle for vitamins A and D (the 'fat-soluble' vitamins). Moreover, there is considerable evidence that certain fats — the highly unsaturated or liquid fats — reduce the serum-cholesterol level and may actually protect the consumer from atherosclerosis. These unsaturated fats (oils) are mainly of marine and vegetable origin, and there is no need for a restriction of these except in cases of advanced obesity.

A suitable diet for old persons will provide about 25% of the calories from fat. Thus a 2,000-calorie diet will include about 55 G. of fat. As much of this as possible should be 'unsaturated' — vegetable oils for frying and for salad dressings, and lots of fish. Fatty meats such as mutton and pork should be avoided, but lean meats such as liver, veal, breast of chicken, and lean cuts of beef may be eaten freely. Artificially hardened ('hydrogenated') fats should not be used for cooking. Dairy products are rich in saturated fats, but provide many valuable nutriments; therefore only their *excessive* use should be restricted. As far as the elderly person is concerned, skim-milk and its products retain all the advantages of whole milk and are free from fat.

To summarize at this stage, the basic composition of a suitable diet for an old man may be set out in this fashion:

| | | | |
|---|---|---|---|
| Protein | 100 G. | = | 400 calories |
| Fat | 55 G. | = | 500 calories |
| Carbohydrate | 275 G. | = | 1,100 calories |
| | Total | | 2,000 calories |

We must now consider the less weighty but not less important ingredients of a sound diet.

*Calcium*

Dietary calcium deficiency may contribute to the development of senile osteoporosis; a suitable intake of this mineral must therefore be maintained. About 1·0 G. daily is all that is required, and this is readily achieved from dairy sources. A pint of milk will provide about 700 mg. of calcium and, in this respect, skim-milk is not inferior to whole milk. Many elderly folk will not drink plain milk, but they will take a great deal in tea and coffee, in porridge, and in puddings. Cheese is an equally good source of calcium, and elderly folk usually prefer it to milk. In the same way that wine is the adult form of grapes, so is cheese the grown-up version of milk, and it plays a very important part in the nutrition of the aged.

*Iron*

Anaemia from iron deficiency is another of the very common diseases of old age. In the general population about 12% of the women and 5% of the men over the age of 65 years suffer from anaemia of this sort. The deficiency may be due to inadequate intake, impaired absorption, or excessive loss. Even in the absence of a chronic bleeding lesion in the gastro-intestinal tract, considerable blood (and iron) may be lost from the acute gastric erosions which result from the frequent use of salicylate drugs. But a dietary deficiency is perhaps the most important factor, and most (but not all) of the iron-deficiency anaemias of old age can be corrected by increasing the iron intake. It has been suggested that the replacement of iron cooking pots by modern vessels of stainless steel and aluminium has contributed to the high incidence of this disease today.

The old folk need not return to iron pots, but they should ensure that their diet is not lacking in this element. The best sources are green vegetables — cabbage and brussels sprouts—and peas, beans, and lentils. Contrary to popular belief, spinach, because of its high oxalate content, is not a useful source of iron. Marrow, pumpkin and tomato contain very little iron, but certain fruits, particularly figs and prunes, provide a good deal.

*Vitamins*

A diet containing a wide range of the foods already mentioned is not likely to be deficient in any of the vitamins. In the absence of a general dietary deficiency, specific vitamin deficiencies only occur in food faddists — and these are common among old people. Special attention should be paid to vitamins A and C, because a relative lack of these may partly account for the increased susceptibility of many old persons to respiratory infections. Liver, dairy foods, carrots and tomatoes are the best sources of vitamin A. Citrus fruits, guavas and tomatoes are readily available sources of vitamin C, but some elderly folk think that these foods give them 'wind' and 'acidity' and avoid them. They are then in danger of developing vitamin-C deficiency, and unless they can be persuaded to correct their diet, they may require supplements of ascorbic acid.

*Roughage*

Constipation is a very common complaint among old people. In this age group it is often 'dyschezic' — the result of bad bowel habits and the habitual use of purgatives. It is also very often 'atonic', and in these cases a lack of roughage in the diet may be a causal factor. Too great an emphasis on a 'smooth diet' for old people — particularly those without teeth — may produce this deficiency. It can be avoided if the diet includes such things as mealie-meal, oatmeal, whole-meal bread, green vegetables, pumpkin, squash, prunes, figs and apples.

*Salt*

Old people should avoid the excessive use of salt and very salty foods; but unless there is an obvious clinical indication, such as heart failure or hypertensive disease, an average salt intake is quite in order. Nowadays, the proper use of thiazide and related diuretics makes the strict limitation of salt unnecessary even in the presence of heart failure or hypertensive disease.

*Alcohol*

The moderate consumption of alcoholic beverages by old people is to be encouraged rather than deplored. Beer is a good diuretic and a useful source of calories. A small glass of dry sherry before a meal or a glass of wine during the meal often contributes to a good appetite and hence to good digestion. At night, a glass of port or a small brandy may ensure a good night's rest without recourse to hypnotic drugs. The traditional use of fine old brandy in the management of ischaemic heart disease need not be discredited.

## DIETETICS

The scientific principles on which the nutrition of the elderly is based have to be applied to the practical dietetics of individuals. Apart from the specific dietetic requirements of patients with heart disease, osteoporosis, diabetes, bowel disorder or any other common illness of old age, there are special personal problems associated with ageing which require individual dietetic attention.

A common problem is that of the elderly widow living alone. She may have been a good housewife before, but now there is no incentive for her to prepare elaborate meals. She may live for a long time on little more than occasional sandwiches and frequent cups of tea until she is laid low by the specific or general effects of malnutrition. For such persons, companionship is essential. If at all possible, she should live with her family, and if she has the proper temperament she may become a useful member of the family unit. It is often remarkable how granny's appetite improves when she begins to take her meals with her children — and particularly with her grandchildren. If such an arrangement is not possible, she should be encouraged to share her home with another old lady in similar circumstances, or she should be advised to enter an institution for old people. An elderly man who is suddenly left alone is in an even worse predicament. He has never had to cook before, and now all there is between him and starvation are boiled eggs, warmed-up dollops of canned food and probably more beer than is good for him. Unless his family will take him into their home, he should enter an old peoples' institution without delay.

The daily diet requires a little thought. As Hippocrates pointed out, big meals should be avoided and the day's rations should be spread over several small meals. In particular, a large evening meal is not good for an old person and may disturb his sleep. In institutions where meals have to be prepared in bulk, the commonest complaint of the residents is about the food. While fancy dishes and highly spiced foods are generally not suitable for the elderly, there is no need to go to the opposite extreme and to feed them monotonously with tasteless stodge. The jaded appetites of old people need to be stimulated by interesting food, pleasantly presented, and this aspect of their diet is no less important than its biochemical composition.

It is often difficult for the doctor to persuade an elderly patient to change his or her eating habits. Habits which have been developed over many years are seldom easy to change, and elderly folk are not usually very receptive to new ideas. Many of them have very rigid views about which foods are good or bad for them, and once an old person has got it into his head that 'carrots give him wind' or that 'fish keeps him awake at night', there is no rational argument with which to make him change his mind. Up to a point it may be better to pander to his prejudices, but if the patient's health is at stake, he must be dealt with very firmly.

Another major problem is the patient with a disability which interferes with his eating. The commonest is the absence of teeth which limits the sorts of food which the patient can eat and which produces indigestion when inadequately chewed food is swallowed. Under no circumstances should the patient be left toothless; arrangements must be made at once to provide artificial dentures, and then it must be ensured that they are used. A sloppy diet of mashed and minced foods should only be prescribed as an interim measure until the dentures are available. More serious is the case of the old person with a paralysed arm or with such a gross tremor that he cannot feed himself. Unless adequate arrangements can be made to feed such a patient at home, admission to an institution is essential. There are not enough suitable institutions in South Africa to cope with this problem. If any doctor is practising in an area where no such institution exists, it is his urgent duty to advise, to entreat and to provoke the local citizens and civic authorities to get one built.

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