Practical Aspects of Nutrition of the Elderly in Institutions

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Although most studies of elderly populations living at home in countries like Sweden show on average acceptable dietary habits compared to the rest of the population, at least up to the age of 80 years, even though variation may be considerable (1-5), the situation may be quite different when the elderly come to institutions and are forced to live there for medical and/or social reasons. There are many reasons for this, most relating to the fact that such elderly people are older, more frail, and suffering from a variety of often serious diseases. However, factors relating to the hospital or nursing home environment are also relevant.

Even before admission to institutions, risk factors and practical aspects relating to nutrition at home, as reviewed, for example, by Davies (6), are of obvious relevance to the institutional nutritional situation. Low intakes of energy and nutrients have been reported from institutions in several countries, such as Denmark (7), Sweden (8,9), the United Kingdom (10), and the United States (11). Some of these patients have been said to suffer from "hospital malnutrition" (12). It has been clearly shown that the undernourished do worse than the well nourished in regard to serious complications and mortality (13,14).

There are many possible causes of malnutrition in institutions (Table 1). For a review, see ref. 15. Some of these will be dealt with below.

DISEASE PER SE

Obstacles to proper feeding in institutionalized elderly people include poor appetite, anorexia, and vomiting due to disease. Physical and mental handicap, such

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as stroke, parkinsonism, rheumatoid arthritis, depression, confusion, and dementia may all interfere with eating. In certain groups, such as demented and psychotic patients (16) and somatic long-term care patients (17), the prevalence of "hospital malnutrition" can be very high—20% to 35%, and 15% to 25%, respectively.

A practical problem in giving patients nutritional advice is presented by different degrees of hearing loss. In one study in elderly nursing home patients (18), all patients tested had considerably impaired hearing. Mean hearing loss in the speech area was 51 dB, indicating that the majority of the patients needed hearing aids. However, only 1 patient in 10 had one, and technical devices for amplification in the wards were scarce. It was evident that impaired hearing among these patients was an underestimated and rather neglected problem.

As mentioned, severe nutritional problems may result from confusional states and dementia. In depression, loss of appetite and malnutrition are often diagnostic and at the same time are a difficult therapeutic problem. Indeed, one of the most difficult situations in geriatric medicine is to decide if food refusal is due to curable depression or a voluntary desire to give up in a mentally healthy individual.

DEHYDRATION

Water is of course essential for all biological functions in the body. Since water is lost in many common conditions in institutions, such as diarrhea, fever, and renal diseases, the risk of dehydration in such elderly patients is obvious (19). It has also been shown that elderly people seem to experience less thirst than younger people in water deficit (20), and renal concentrating ability is also less (21). The risk may be further aggravated by frequent treatment with diuretic drugs. It has also been shown that the decrease of body weight during the eighth decade of life is mostly related to a decreasing amount of body water, especially extracellular water (22). In certain institutionalized elderly people at risk it may for these reasons be practical to prescribe water as a drug—"one large glass of water four times daily."

ORAL HEALTH

Despite the fact that the population of elderly people at large seem to have better oral health now than just a few decades ago, at least in countries like Sweden (23), this is not true to the same degree regarding elderly patients in institutions. Data concerning the relation between dental state and dietary intake are not conclusive. There are also many confounding factors (24), such as socioeconomic and psychological factors, and the use or misuse of alcohol or tobacco. There are no clear-cut data to support the hypothesis that natural dentition is necessary for elderly people to maintain a satisfactory nutritional state. However, there seems to be a relation between poor dental state and difficulties of ingesting certain food items, such as meat and hard foods (25). Easily chewed food items may also predispose to dryness of the mouth, which may be enhanced by drug treatment. Several oral and dental
conditions, such as angular stomatitis, denture stomatitis, glossitis, and bone resorption may be related to poor eating habits or inadequate diet, and atrophy of the oral mucosa may also be caused by poor oral hygiene and faulty dentures.

**DRUG TREATMENT**

Drug treatment may give rise to poor appetite and/or vomiting, the best known example being digitalis treatment. The commonly used treatment with diuretic drugs enhances the danger of dehydration, and treatment with diuretic or psychotropic drugs may also cause dryness of the mouth, which makes chewing and eating still more difficult.

**PHYSICAL ACTIVITY**

Many institutionalized elderly patients are physically inactive, which gives rise to low needs for energy and therefore difficulties in maintaining a sufficient intake of essential nutrients. Furthermore, physical inactivity enhances bone mineral losses from the skeleton, and several studies have shown that exercise can prevent or reverse some of the limiting changes in cardiovascular function and work capacity and be able to improve glucose tolerance (for review, see ref. 26).

**MEAL ENVIRONMENT**

An unsuitable meal environment is an important negative factor in institutional nutrition. In one study an improved meal environment in a nursing home was studied (17). The dining room of the nursing home was changed from a very sterile environment to an environment typical of the 1940s when these patients had their most active period. Prior to the change the measured average energy intake was very low, and, as an example of nutrients, the average intake of vitamin D was only 2.8 Mg. The dietary intake improved significantly during the experimental period, and the intakes of energy and protein increased by 25%. Physical activity increased as well, and the psychological evaluation showed improvements in conversation, facial expression, and social interest.

**MEAL DISTRIBUTION THROUGH THE DAY**

An improper distribution of meals may be disadvantageous. The recommendations in Sweden suggest three major meals and two in-between snacks during the day in hospitals and nursing homes. However, this is not always the case, and sometimes three or four meals can be served during about 8 hours followed by as much as 16 hours of overnight starvation. It is obvious that the appetite may be very poor during
these meals when they are so close. For a review of these problems and details of studies concerning meal distribution, see ref. 27.

KNOWLEDGE AND UNDERSTANDING AMONG THE STAFF

Insufficient knowledge and understanding of nutritional problems among the hospital or nursing home staff, including doctors, are important causes of insufficient nutrition. The need for education and training is obvious. One method for improvement is the appointment of one nurse in every ward to be responsible for the nutrition in that particular ward, and thus be a link between the ward, the physicians, the dietitians, and the hospital kitchen.

NUTRITIONAL SUPPLEMENT POLICY

Doctors and nurses may sometimes not be aware of the improvements that may be achieved by use of dietary supplements. As an example can be mentioned a study in a somatic nursing home, where three different kinds of dietary supplements were given during an experimental period (28). Before the study the energy intakes were low, on average 1,247 kcal. During the experimental period the intake of energy increased by 25%. The decrease in appetite at the main meals caused by the supplementation was very low, whereas the intakes of less valuable in-between meals decreased from 20% to 11% of the energy intake.

TERMINAL PHASE OF LIFE

Nutrition is a prominent problem among the many ethical and medical problems in the terminal phase of life. Ethicists are discussing these problems in terms of the concept of sanctity of life as opposed to quality of life (29,30), there being a general trend for the former gradually to be replaced by the latter. These problems have also been discussed from a religious point of view, for example, in relation to Judaism (31) and to Catholicism (32).

Indications for fluid therapy as well the subject of thirst sensation in the last phase of life have been extensively discussed (for a review, see ref. 33). However, no clear-cut recommendations can be established from currently available publications.

CONCLUSION

In this chapter some possible causes of "hospital malnutrition" have been described. Some may be dealt with, others not. The most important thing is to be aware of the problems. After that, solutions are often possible in hospitals and nursing homes.
REFERENCES


**DISCUSSION**

*Dr. Hodkinson*: A nursing colleague looked at institutional starvation in our own facility in the long stay wards. She found some interesting things. One of the real problems about adequate feeding of these patients is pressure of time. The feeding of helpless old people occupies an enormous amount of nursing effort, yet institutional rules limit time quite severely because of the rigidity of the routines. One of the particular markers of poor nutrition in patients who eat slowly is a rigid kitchen routine. The other thing she found was that the nursing staff were not very good at recognizing which patients were at greatest nutritional risk. The ones they identified as being at risk were often the ones with strange dietary habits, but measurements showed that their intakes were generally quite high. Other patients about whom the staff were not so worried were the slow eaters and these often had very poor intakes. There is thus a need for better education of the nursing staff and a need to develop strategies to encourage old people to eat, and even to eat more quickly.

*Dr. Steen*: A crucial problem is to make all medical staff aware of the fact that nutrition is a very important part of medicine, as important as drug therapy, surgery, or physiotherapy. What we started to do 15 years ago was to ensure that on every geriatric ward there is a nurse who has special responsibility for nutrition. These nurses are given a 30-hour course on basic nutrition. They have responsibility for being the link between the kitchens, the doctors, the ward, and the patients.

*Dr. Hodkinson*: Another difficulty is the nutrient density. This is particularly the case when patients with feeding difficulties are given pureed foods. The nutrient density of such foods is often extremely low. It could easily be increased by the addition of complex polysaccharides without altering the taste too much. I think this simple practice has been neglected. It would be very easy to do.

*Dr. Steen*: I agree completely. In some patients the need is for energy rather than for protein or other nutrients. Professor Munro has shown that at very low energy intakes, energy is more important than protein in obtaining a positive nitrogen balance.

*Dr. Davies*: I recognize that in the elderly with disease states, the provision of supplements is often necessary, but I wonder whether sometimes it is done just for convenience. It is easier to give a vitamin C pill than to provide a nice fruit salad and wait for it to be eaten, for example. There is often a danger that the convenience of staff is placed first to the detriment of the resident old people. We always tell our staff: you know your slow eaters so why don’t you serve them first and clear their table last. This makes quite a difference in time and is just common sense.

*Dr. Steen*: I agree this is the ideal. However, I think that dietary supplements, and I don’t mean vitamins but nutritional supplements, are of value in institutions and in elderly people’s own homes. In a study in which we gave 500 kcal by supplement, the energy intake increased by 25%, with practically no decrease in appetite for the main meals.

*Dr. Edwardson*: People who administer institutions caring for the elderly must be more
flexible. The vast majority of institutions that I know of discourage families and visitors at meal times, whereas in terms of support meal times would be very suitable visiting times, since relatives could give valuable assistance with feeding.

Dr. Vellas: One problem is that it is very difficult to feed sick elderly patients with anorexia who don't want to eat.

Dr. Doyle: One of the strategies that we are using to help solve this feeding problem is to recruit and train retired nurses living in a retirement community. Dietitians and nurses together train these people on the methodology of correct feeding and it seems to be working. We also encourage family members to come in and some have been trained as well.