Editorial

Food intake methods in clinical practice

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The way people eat is important in its own right for health. When the nutritional status of patients is under consideration, presumed surrogates for intake are often used, like weight and height, haemoglobin and blood film, serum lipoproteins, glycaemic status, serum levels of micro nutrients or bone densities. These measures are, in reality, determined by a number of factors which determine nutrient flux, and any one is only a partial statement of the food/nutritional status relationship, let alone of measures of health outcomes. Thus food intake itself, in all its complexity, is worthy of consideration, and often essential to understand clinical problems.

And it is not just the food intake, but the circumstances of eating ie how the food is obtained and prepared, how affordable it is, what function (social, family or personal) eating serves, what religious or cultural beliefs about food apply, which are often worth establishing at the time of consultation. Increasingly, food choice is based on knowledge and skills not previously required, such as the ability to appreciate changes in food technology and to read and interpret food labelling. Patients may need to be encouraged to bring food labels with them to the consultation for clarification of eating practices. It may well be that even traditional cooking, has been neglected and now limits food choice. Family structure, whether it be single, single-parent, traditional parent-child unit, with or without grandparents; mobile or permanent places of abode; proximity to fresh food markets, supermarkets, take away food outlets, street or hawker stalls, or restaurants; availability and use of motor vehicle or public transport; work patterns – these and many more factors may impinge on health through food. They therefore have implications for food intake methodology in clinical practice.

Against this background, systematic enquiry into food intake is helpful. There are broadly three practical ways of eliciting food intake information in clinical practice.

1 Key Questions
Setting the scene
Where do you see the problems with your eating, if any?
Have you made/are you intending to make changes in the way you eat?
How is your appetite?

Identifying the food pattern
Do you eat out?
Who does the cooking?
Do you have breakfast?
Do you snack?

Food specific
What about fatty foods, fried foods, cooking in oil, fat spreads?
Do you eat fish?
Do you eat fruit? What sorts? How much?
Do you eat sweets, sweet biscuits, confectionery, chocolate?
How many cups of coffee, tea, glasses of fruit juice a day?

Disease specific eg osteoporosis
What do you have in the way of dairy products? (for calcium) Are they low fat? Do you add salt, cook with salt, soya sauce, MSG, bicarb soda? (for sodium) Do you use caffeinated beverages? Do you use tolu, nuts, sprouts, carrots, green leafy vegetables? (for phytoestrogens)

2 Food diary
The patient is encouraged to keep a record of food and beverage intake, in accordance with time of day, usually for seven days, allowing for variations from day to day, especially from week day to weekend day. This can then be reviewed at a subsequent consultation and key points that relate to the patient’s particular health problem highlighted for attention. A copy of the food diary can be made in the doctor’s record and can become part of the patient’s personal record. A particular advantage of a food diary is that it begins the process of insight development, assumption of responsibility and behavioural change in relation to eating.

3 Usual food intake by history
Annotations can be made about the usual way each episode of eating is handled and what food and beverages are eaten. The period of enquiry can be defined. For example it may be suggested to patients that the last week is of interest and/or it may be of interest to enquire about the pattern prior to an illness or a change in food habits. A search for food patterns at different times in a patient’s
life, albeit usually coloured by the present, can be of assistance in understanding the pathogenesis of problems like obesity, hyperlipidaemia and hypertension.

Medical record annotations can be simplified by use of abbreviations for particular foods and for noting how many times a week, month or year as a fraction of the number of days of the relevant period. The evaluation of this information is often best achieved by a few food indices like:

(a) degree of food cultural adherence
(b) food variety
(c) use of fatty food
(d) quality of fat used
(e) sources and amounts of sodium used, in its various forms
(f) number of standard drinks of alcohol
(g) use of good sources of key nutrients: eg folacin, iron, calcium, protein
(h) factors determining bioavailability of nutrients: use of iron containing foods with vitamin C containing foods, like breakfast foods and citrus fruits together

zinc from leavened products where phytase is operative
(i) amounts of carbohydrate – containing foods eaten on the one occasion and their distribution through the day in someone with diabetes
(j) use of caffeinated foods and beverages in relation to risk of osteoporosis or in the analysis of the problem of palpations.

Use of food sources of non-nutrients of biological value such as those that are good sources of weakly oestrogenic compounds or of salicylates.

Opportunities for food and beverage change require identification as a prelude to planning nutritional strategies and long term programs. Documentation of baseline and follow-up food intake helps establish it as a useful clinical endpoint. More effort needs to go into the use of smaller personal computers like the current notebooks to handle, present and use this information for counselling. The information in the hands of patients enhances involvement and commitment and it provides opportunities for 'shared-care' amongst the several attendant health care practitioners involved.

One of the common failures in clinical nutrition practice is for food and beverage intake not to be reviewed and the need for change to be reinforced by the management team. Where there is a food-related problem it is unusual for review not to be required at least six or twelve monthly.

With practice, repertoire of clinical nutritional assessment will emerge for particular problems and the appropriate food and beverage approach made. Examples would be:

(i) Ischaemic heart disease: encourage use of cardio-protective foods if inadequately used, namely: 'low fat' fish two or three times a week; plentiful and varied plant-derived foods, especially in regard to a range of colour and fibre type: low sodium.
(ii) Diabetes: first ensure the use of a nutritionally adequate food pattern where nutrient dense foods and a wide variety are in evidence; then the use of foods which will minimize the development of diabetic complications like cardioprotective foods; then, optimize glycemic status by the use of refined carbohydrate and low fat (using oils which are monounsaturated like olive or Canola) based foods, but with serving sizes so that not too much carbohydrate is presented at once.
(iii) Wasting disorders: when appetite and oral route allow, foods which are nutrient and moderately energy dense, like nuts, dried fruits, liver, fish, lean meat, low fat dairy products and eggs or nutritionally complete formula feeds or nutrient supplement to food.

It is rarely necessary to calculate energy or nutrient intake to be useful in assisting with food intake from a health point of view. Knowing the baseline measures of food and health in an individual, the required direction of change, and the nature of useful change are what is required.

References

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**Nutrition and HIV infection**

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Nutritional status may have an impact at all stages of HIV disease. Many of the clinical features of HIV infection cause nutritional problems and may also be exacerbated by the presence of malabsorption. Inadequate food intake, due to a wide variety of side effects, malabsorption and altered metabolism, may all contribute to malnutrition. Additionally, factors in food, including micronutrients, can modulate immune function. Reduced micronutrient levels are documented at all stages of HIV infection although the significance of these findings and how they may relate to HIV disease severity and prognosis are still unclear. Body composition changes in adults include loss of weight with proportionately greater loss of lean mass. Paediatric HIV infection has received far less research attention, but growth failure is a significant nutritional complication seen clinically.

Clinical experience suggests that early nutritional intervention may improve prognosis as well as quality of life. Nutritional management in HIV disease depends on the clinical state of the patient. Definition of the benefits of particular food factors and diets, as well as the most appropriate nutrition support modalities, would allow rational nutritional counselling. Better definition of the contribution food makes to health through its social role, and the opportunities this provides in patient care, would complement the biomedical research effort.

**Introduction**

Nutritional abnormalities are a frequent and characteristic feature of infection with human immunodeficiency virus (HIV) and represent a major determinant of survival. Nutritional status may have an impact at all stages of HIV disease from initial acquisition of infection, clinical manifestations, progression of the disease and palliation of advanced disease. Factors such as dietary intake, metabolic changes and absorptive capacity may all contribute to nutritional problems, as can factors such as psychological state, social supports and ethnicity.

**HIV infection: an overview**

HIV is a retrovirus that targets cell-mediated immunity by destroying a subset of T-lymphocytes with a CD4 molecule on the cell surface. HIV is transmitted by contact with infected body fluids which may occur by unprotected sexual contact, sharing contaminated injecting equipment, transfusion of contaminated blood or blood products or occupational exposure such as a needle-stick injury. Vertical transmission may occur from mother to child during pregnancy, childbirth or breast-feeding.

Following infection, progressive decline in immune function leads to the development of the manifestations of acquired immune deficiency syndrome (AIDS). The Centers for Disease Control have defined a staging system for the classification of HIV infection in adults (Table 1).

**Table 1. Classification of HIV infection**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>Group I</td>
<td>Acute infection</td>
</tr>
<tr>
<td>Group II</td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>Group III</td>
<td>Persistent generalized lymphadenopathy</td>
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<tr>
<td>Group IV</td>
<td>Subgroup A – constitutional disease</td>
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<tr>
<td></td>
<td>Subgroup B – neurological disease</td>
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<tr>
<td></td>
<td>Subgroup C – secondary infectious diseases</td>
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<td></td>
<td>Subgroup D – secondary cancers</td>
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<tr>
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<td>Subgroup E – other conditions</td>
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</tbody>
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Source: Centers for Disease Control, USA 1987

*Group IVA is also referred to as AIDS-Related Complex (ARC) and Group IVB, C, D, E may be referred to as Acquired Immune Deficiency Syndrome (AIDS).

It is currently unclear how many people infected with HIV will eventually develop AIDS. The San Francisco Clinic Cohort Study suggested that 48% of those infected with HIV would develop AIDS within 10 years. Since that study was published, the widespread use of anti-retroviral medications and more effective prophylactic regimes has probably lengthened that time span considerably. Cohort factors that influence the progression of asymptomatic HIV infection to development of AIDS are poorly understood. Cofactors that have been suggested include co-infection with cytomegalovirus or other sexually transmitted diseases (particularly ulcerative...