A collation of data on the efficacy and cost effectiveness of dietetic intervention and treatment in Health Care Systems with special emphasis on Ireland.

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INTRODUCTION
Quality health care can be defined to include all services meeting the preventive, therapeutic, and rehabilitative health care needs of all segments of the population.

Nutrition is relevant to almost all aspects of medical care. Many of the diseases necessitating medical care have a nutritional component in that they are caused by, or their course can be influenced by diet.

The dietetic profession has an important role in the present day team approach to patient care, as doctors generally have received no formal training for a consultant role in clinical nutrition.

Nutrition services of screening, assessment, education, counselling and treatment are an integral part of health care for those at nutritional risk in primary care, acute care, outpatients care, home care, mothers and children, the elderly and in preventative care.

Dietetic services may prevent the need for more costly medical or surgical treatments and reduce costly complications associated with disease progression. There are economic benefits in having good dietetic services.

ACUTE CARE
Malnutrition can occur in up to 50% of hospitalised patients. The correlation between malnutrition and disease complications is high. Early detection and appropriate nutrition treatment are effective in decreasing morbidity, the patient recovers more quickly, and the number of days required in hospital is reduced. Dietitians can control costs by ensuring judicious use of costly high-tech nutrition therapies, including parenteral nutrition. Substantial savings can be made when enteral feeding is substituted for parenteral nutrition. It is the qualified dietitian that has the expertise and knowledge to precipitate these decisions.
OUTPATIENT SERVICES
When patients are discharged from hospital, maintenance of a diet plan eg. Diabetic, gluten free from coeliac disease can be critical to the stabilization of the health of the patients and prevention of readmission. Regular dietetic follow-up is cost-effective and essential in keeping patients healthy by giving them the knowledge and encouragement required to follow lifelong dietary patterns.

PREVENTIVE CARE
The main goals of preventive care are to keep people healthy in their communities, to reduce the incidence and severity of preventable diseases, to improve health and quality of life, and to reduce total medical costs, particularly costs for medication, hospitalization and extended care.

A direct relationship clearly exists between nutrition risk factors and certain key diseases including coronary heart disease, stroke, cancer, diabetes mellitus and obesity.

Nutrition programs and services can prevent, postpone or mitigate the onset or progression of these diseases and thus save money. Health promotion and prevention of disease processes are good opportunities to reduce resources spent treating preventable diseases and functional impairment.

MATERNAL AND CHILD HEALTH
The prenatal period may be the starting time for good health or the beginning of a lifetime of illness. Early nutrition intervention can improve pregnancy outcome. Assessment of nutritional status is an integral part of care at the beginning of pregnancy, periodically throughout pregnancy and infant feeding to provide continued monitoring and appropriate intervention.

Children need good nutrition during childhood for adequate growth, development, and maintenance of health to decrease the cost of health care later in life.
ELDERLY

The percentage of the Irish population over the age of 65 has increased since the beginning of the century and is steadily rising. Decline in nutritional status is not an inevitable part of the aging process but frequently results from inattention to risk factors that can be improved by dietetic screening, assessment, education, counselling, and treatment. Adequately nourished individuals have decreased morbidity and mortality and fewer secondary medical complications and diseases.

AIM OF THIS FILE

The purpose of this resource file is to have a compilation of the data available demonstrating cost-effectiveness of dietetic services in Ireland. The Irish articles included demonstrate where and why there is need for nutritional therapies, and evaluate various studies carried out to determine effectiveness of dietetic support. There is an obvious lack of Irish intervention studies on this topic so various non-Irish articles have been included as large studies on dietetic cost effectiveness have been carried out abroad.

At present various intervention studies evaluating dietetic treatment are being carried out by nutritionist/dietitians throughout Ireland. These are mainly in their preliminary stages and results are expected within 6 months. Current research areas include nutrition in pregnancy, diabetes, cancer and orthopaedic patients. More research needs to be carried out on the efficacy and cost effectiveness of dietetic and nutritional therapies in Ireland. Dietitians need to be involved in auditing their work which presently is very difficult due to poor staffing levels.

There is need for further funding so that more structured cost-effectiveness programs can be carried out in Ireland.
REFERENCES


Recent reports have suggested that malnutrition is markedly prevalent among hospitalised patients, and especially in those patients with cancer, critical illness or gastrointestinal disease. Malnourished patients have an increased morbidity and mortality rate when compared with normally nourished individuals with the same diagnosis.

Patients that should be considered for interventional nutritional support include:–

(a) Patients with severe clinical malnutrition as manifested by a weight loss of more than 10% in the previous month, a serum albumin of less than 30 g/l and muscle wasting with or without peripheral hypoproteinaemic oedema.

(b) Patients who are moderately malnourished and who have had reduced dietary intake for the preceding two to four weeks.

(c) Those who may on initial examination be normally or near-normally nourished but who may be expected to develop protein calorie malnutrition because of their underlying pathology in absence of nutritional support.

If a patient is unable to consume adequate food orally then nutritional support in the form of enteral or parenteral nutrition should be supplied. Enteral nutrition should be considered for all patients with a functioning, accessible gastrointestinal tract. Total parenteral nutrition should only be considered for patients with non-functioning or non-accessible gut e.g. multi-organ failure, pancreatitis, I B D and hypermetabolic states. The groups most commonly requiring TPN are post-operative surgical, intensive therapy patients and burns patients.

The Dietitian/Clinical Nutritionist plays a significant role in providing nutritional support in that they have the expertise in assessing patients nutritional requirements and prescribing enteral feeds and parenteral feeding regimes in conjunction with medical staff suitable to each patients specific needs. They also play an important role in the period of weaning from enteral / parenteral feeding.to oral diet in prescribing supplemental drinks and encouraging meals that patients feels capable of eating.
Surgical Patients


This project involved the evaluation of the incidence of malnutrition in surgical patients is associated with poor clinical outcome. For this study factors which predict malnutrition were investigated on 40 hospitalized patients in two surgical wards.

The results showed a 50% level of malnutrition among these patients from a broad range of disease categories and socioeconomic groups. Of these only 50% had been referred for dietetic support.

Ms Gorman concluded that a larger follow up study is required to link base-line nutritional state to post surgical outcomes such as sepsis, length of hospital stay and mortality.
NUTRITION AND SHORT BOWEL SYNDROME.


This is a general review article describing the pathophysiology of the Short Bowel Syndrome and its metabolic consequences. Dietary treatment is a major component of treatment and the dietitian plays an important role here. The development of home parenteral nutrition though expensive has meant an improvement in the quality of life for many and needs to be constantly monitored to avoid complications. For most patients, the idea is to gradually reduce their Home Parenteral Nutrition as they rely more on their oral diet to maintain their weight.
NUTRITION AND THE CRITICALLY ILL


This is a general review article on the importance of nutrition in the critically ill. Artificial nutrition has become an established facet of everyday critical care support. Dietitians who are interested in active patient care and are knowledgeable in special oral and enteral dietary formulas are essential to the nutrition support team. The dietitian should be responsible for continued monitoring of each patient's nutritional status, whether on enteral or parenteral nutrition, to ensure that changing metabolic needs are recognised and met.

Nutritional care of the critically ill patient is an important therapeutic option. For maximum benefit in this setting, early introduction of a simple regime with careful monitoring is often the key to successful outcome for patients who might otherwise succumb to malnutrition.
NUTRITIONAL SUPPORT IN SURGERY, BURNS AND THE CRITICALLY ILL.

BRITISH AND AMERICAN ARTICLES


Preoperative malnutrition is often associated with poor post operative outcome, yet there is no consensus about whether perioperative nutritional support reduces post operative complications to the level occurring in well nourished patients undergoing similar procedures. This is partly because reports evaluating effect of perioperative nutritional support on post operative vary widely in number of patients studied, primary diagnosis, and duration and quality of perioperative nutritional support.

Analysis of published reports suggests that when Total Parenteral Nutrition (TPN) is given to malnourished patients in adequate amounts preoperatively, significant improvements in both nutritional status and post operative clinical outcome are likely to occur. Preoperative Total Enteral Nutrition (TEN) is as effective as TPN in improving post operative clinical outcome. Potential candidates for surgery for whom prompt initiation of pre operative TPN or TEN may reduce operative morbidity and mortality, irrespective of nutritional status can be identified on admission, treated by nutritional support team of which dietitian plays an important part in.


This paper also deals with the importance of nutritional support teams in hospitals. A multidisciplinary nutrition support team can improve the quality of nutritional support, reduce inappropriate feeding, reduce the complications associated with enteral and parenteral nutrition, and so improve clinical outcome and reduce hospitalisation. A national survey in Britain in 1988
revealed that only about a quarter of the hospitals had a multidisciplinary nutrition team to organize and advise on issues related to nutritional support.

It has been estimated that if the hospital stay of 10% of the U.K. hospital patients is reduced in medical and surgical wards by five days as a result of nutritional intervention, the cost saving in the U.K. is £226 million per year. (Huge savings could be made in Irish hospitals similarly). The financial implications for home nutritional support are also large. The Kings Fund Report published by a committee comprising of practising clinicians, nurses, dietitians, health managers and members of various organizations interested in nutritional support in 1992, draw attention to the need to improve the care of patients requiring nutritional support through education, the use of simple routine methods for assessing nutritional status, institution of appropriate care plans and better organization of support services in hospital and in the community.


This paper reviews studies that were carried out to explore the clinical value and cost of nutritional support in comparison to drug treatment. These studies included a prospective, randomized controlled trial of supplemental tube feeding after fracture, a prospective randomized, double blind controlled trial of elective parenteral nutritional support after major surgery and an audit of the effectiveness, morbidity, mortality and cost of 5 years parenteral nutrition in a British Hospital. Data from these studies support the effectiveness of nutrition in the management of hospitalized critically ill patients.


The authors of this article believe that a nutrition support team can be effective in controlling hospital costs. The paper describes a retrospective review of the effect of their nutrition
team on hospital costs was conducted for a 12 month period. Nutrition support team action saved money when recommendations they made were needed. The team conclude that nutrition support team approval before TPN is initiated would achieve cost savings.
ACUTE ILLNESSES, BURNS AND SURGERY


Patients in hypermetabolic stress, such as that which occurs with burns and surgery, undergo major physiological changes that effect their nutritional status. These physiological changes have important implications for nutrition intervention and provide a metabolic rationale for nutrition support. Studies have shown greater survival rates, fewer complications, less weight loss, and shorter length of hospital stay when patients with greater than 50% total body surface area burns were given high protein supplemental nutrition in addition to the medical treatment. Other studies have shown that in patients undergoing major surgery there are lower post surgery complications in the group of patients who received at lease 7 days of high protein / high calorie IV nutrition compared to the control group of patients who received only the regular hospital diet prior to surgery. Studies also suggest that early recognition and aggressive treatment may lead to a decrease in the length of stay, thereby reducing hospital costs. Nutrition support given in accordance with the recommendation of the nutrition support team may be an important factor in reducing the cost of hospitalization of severely injured patients. Effectiveness and cost studies justify aggressive nutrition intervention for patients in those hypermetabolic states.
Protein Energy Malnutrition (PEM) or the possibility of developing PEM occurs in 30% - 50% of hospitalized patients.

The condition exists independently of other medical conditions and results from preadmission or postadmission failure to meet nutrient requirements resulting in weight loss and impaired immunity. It can also occur in patients with a chronic condition when a superimposed acute metabolic stress leads to accelerated nutrient depletion.

PEM increases morbidity and mortality and may be associated with complications such as pneumonia, sepsis, operative site infection and delayed wound healing.

The authors of this article suggest that malnutrition in hospital patients can be systematically identified and that its identification can be combined to the implementation of a structured timely plan for nutrition support.

They suggest that a workable hospital system for nutrition screening should have the following characteristics:

1) Screening and assessment within 24 hours of admission to the hospital.
2) A system of notification designed to effect timely provision of nutritional support.
3) Early intervention facilitated by an educational programme with ongoing consultation between dietitians and physicians.

The cost benefits of allocating resources to this plan are small compared with the costs of failure to do so. Studies have shown that malnutrition is often undetected and that, when identified, it is associated with increased direct variable costs to hospitals and increased length of stay.

The authors conclude that a proper analysis of the financial implications of late or untreated PEM versus nutrition support must take into account not only the costs of implications or extended length of stay due to the delay or failure to provide nutrition support but also the costs associated with this intervention itself.
Crohn's disease is a chronic inflammatory condition that may affect any part of the GI Tract from the mouth to the anus. The incidence of Crohn's Disease varies from country to country but is approximately 5-6 per 100,000 with a prevalence of 50-60 per 100,000. Complications of Crohn's disease include small bowel obstruction, tissue formation, perforation, haemorrhage and carcinoma.

The management of the disease varies greatly depending upon the Clinical Status of the individual. Nutritional support is one component of the management. Nutritional deficiencies are frequent and complex. Diarrhoea can result in excessive losses of vitamins as well as dehydration.

Therefore an adequate supply of fluid electrolytes and trace minerals in addition to protein and energy is vital in order to preserve body cell mass and the lost defence mechanisms. Nutritional problems may be further complicated by surgical therapy as the absorbative surface is decreased and this may be sufficient to reduce substantially the absorption of multiple nutrients.

During acute attacks of Crohn's disease elemental diets and Total Parenteral Nutrition have been shown to induce remissions by improving nutritional status and allowing the bowel to rest. During recovery and remission a high protein / high calorie diet should be advised especially for those who have lost weight.

Dietetic/Nutritional input is therefore of major importance at all stages of the disease and improved nutritional status can improve lifestyle of patients suffering from Crohn's Disease.
INFLAMMATORY BOWEL DISEASE

ULCERATIVE COLITIS

Ulcerative Colitis is a chronic inflammatory disease of the large bowel. The disease may begin at any age, but most first attacks occur in young adults. The cause of the disease is still unknown.

Treatment includes drug therapy and fluid replacement during acute attacks. If complications occur surgery may be necessary. The main dietary aims are to ensure that nutrition is adequate and to correct malnutrition which is often present. Patients are at risk of developing malnutrition due to anorexia, inadequate energy intake, vomiting, diarrhoea and dehydration.

Dietary input from a Dietitian/Clinical Nutritionist is thus important at all stages of the disease.
NUTRITION AND INFLAMMATORY BOWEL DISEASE

The author of this article Prof. John F. Fielding, B.Sc, M.D.,F.R.C.P.I.,F.R.C.P.,F.A.C.G., is a Consultant in the Department of Medicine and Gastroenterology, Beaumont Hospital. In this article he outlines the main components of treatment of Crohn’s Disease. He believes that the main aim of medical treatment is to convert active disease to remission. These objectives should be attained with the minimum of side effects, in an acceptable manner as possible to the patient, and at as low a cost as is compatible with efficacy. As part of these objectives he believes that nutritional support is a very important component of the treatment. Malnutrition is present in the large majority of patients at presentation. Nutritional restoration is vital and enteral nutrition is recommended in a large number of cases especially in prepubertal patients requiring growth restoration. It has been shown that patients following a strict elemental dietary regime (type of enteral feed) have as great a chance of conversion of active to quiescent disease (85%) as that attained with oral corticosteroid therapy. Many patients also require vitamin and mineral supplements.

This article describes a study carried out in St. James’s Hospital, Dublin, the main aim of which was to perform a comprehensive analysis of the nutritional status of patients with Chronic Inflammatory Bowel Disease in remission as this condition is associated with malnutrition as a result of reduced intake and absorption and increased utilization and intestinal loss of essential nutrients. The results indicated that patients with CIBD in remission are not significantly malnourished relative to normal controls suggesting that nutritional therapy of patients in the acute phases is of prime importance and minimalizes the developments of chronic malnutrition.
Archives of Disease in Childhood. 1983. 53: 44-47.

Failure to gain weight and short stature are difficult to correct in children with Crohn’s Disease. Management of acute Crohn’s Disease may include corticosteroid therapy, suphasalazine, or surgery. Corticosteroids may cause stunting of growth or vertebral collapse. Nutritional treatment in the form of TPN or special diets or a combination of both has been effective in some children. This paper reviews a study of 14 young patients with Crohn’s Disease treated with an elemental diet which was given initially to induce and later as a nutritional supplement. The results indicated that elemental diet appears to play a major role in inducing clinical remission. The acute symptoms were controlled, growth improved and puberty occurred.

One of the main advantages of the diet is unpalatability but most of the patients were able to tolerate it with constant encouragement and monitoring by the dietetic staff.

This paper describes a study in which patients with acute exacerbations of Crohns Disease were treated for four weeks with an elemental diet. The findings of the study confirmed that an elemental diet is an extremely useful method for inducing remission in acute Crohns Disease although it did not, in this study, appear to protect against long term relapse.

O’Morain et al. Elemental Diet as Primary Treatment of Acute Crohns Disease: a Controlled Trial.

This paper describes a controlled trial in which 21 patients acutely ill with exacerbations of Crohns Disease were randomized to receive either prednisolone or potentially more toxic immunosuppressive drugs or by surgery.

Assessment of the study group at four and twelve weeks showed that the patients treated with the elemental diet had improved as much and by some criteria more than the steroid treated group. The authors believe that elemental dietary treatment offers a therapeutically non toxic alternative to conventional surgery and drugs and should merit serious consideration as the treatment of choice of acute Crohns Disease.
NUTRITION AND INFLAMMATORY BOWEL DISEASE

NON IRISH STUDIES


This paper again describes a study carried to assess whether intermittent courses of an elemental diet could reestablish growth. Growth failure often complicates Crohns Disease in paediatric patients and is principally due to inadequate caloric intake. It is reported in 15% - 40% of patients. The study demonstrated that chronic intermittent elemental diet effectively reverses growth arrest, while decreasing prednisolone (drug) requirement and Crohns Disease activity index in paediatric Crohns Disease patients prior to puberty.

This paper describes a study in which six patients with an acute inflammatory attack of Crohn’s Disease were randomly assigned to receive steroids or elemental diet for 7 days. The results indicated that both forms of therapy were associated with clinical improvement, increases in protein turnover and evidence of reduced inflammatory activity. However, the beneficial effects of steroid regimen must be balanced against the deleterious effects on body protein stores, steroids and bowel rest without nutritional support should be avoided in malnourished patients.
DIETITIANS AND RENAL DISEASE.

There are no available articles on the effectiveness of dietary intervention in Renal Disease in Ireland but as dietary modification plays such an important role in the treatment of disease, I have included British, American and Australian reviews of this area. The basic principles of treatment apply in Ireland.

1. Williams AJ et al. - Alteration of the Course of Chronic Renal Failure by Dietary Protein Restriction.
Dietary protein restriction in the management of Chronic Renal Failure has been shown to reduce aemic symptoms in patients with poor renal function. It is also thought that a low protein diet on prolong progression to End stage Renal Failure. In this study the role of dietary protein restriction in the progression of chronic renal failure was investigated in 47 patients suffering with moderate and severe renal impairment in Leicester, England.

The results show that a protein restricted diet favourably altered the decline in renal function in the majority of patients thereby enabling the initiation of renal replacement therapy to be deferred. No adverse nutritional effects within the parameters examined was found. The renal dietitian plays a vital role in the prescribing and monitoring of the renal diet.

2. Ihle B. et al. - The Effect of Protein Restriction on the Progression of Renal Insufficiency.
This paper describes an 18 month prospective, randomised, controlled study of moderate protein restriction in 64 patients with moderate - to - severe protein insufficiency in which serum creatinine values and isotopic measurements of the glomerulus filtration rate were used to determine the rate of progression of the disease. The patients were randomly assigned to follow either a regular diet or a protein-restricted diet.
The results showed that end stage renal failure developed in 27% of the patients following the regular diet and 6% who followed the protein-restricted diet.

The authors conclude that unlimited protein intake is no larger appropriate for most patients with chronic renal failure. They believe that moderately severe protein restriction with adequate calorie supplementation from carbohydrates and fats can delay the progression of intrinsic renal disease without leading to overt nutritional deficiencies. They believe frequent assessment of the patient by a dietitian/nutritionist with a renal disease is essential and that simple reviews by the dietitian is an accurate way to assess patients compliance.


This study examined the effect of a low protein diet as the progression of serial disease in 19 insulin dependant diabetic patients with persistent clinical protein via over an average period of 33 months. The results indicated that a low protein diet with its reduction in protein and possibly other dietary components such as phosphate and fat as assessed by the dietitian, seem to retard the rate of decline of glomerular filtration rate in diabetic nephropathy independently of blood pressure changes and glycaemia control.


The purpose of this paper is to illustrate the complexity of the metabolic and clinical manifestations in ESDR and the significant inter relationships between these disorders and nutrition.
Many of the complications have serious clinical consequences and require highly skilled dietary intervention. Maintenance dialysis therapy and renal transplantation must be augmented with nutritional management if the patient is to be maintained in optimal health. Nutritional management serves to improve the results of ESRD therapy, but it also adds to the complexity of care and increases the level of scientific and professional expertise required within the medical team. Renal dietitians believe that the qualified renal dietitian is a cost-effective member of the renal care team who provides invaluable expertise.
Severe head injury leading to chronic neurophysiological and cognitive defects has important implications for long-term nutritional wellbeing.

In the acutely ill head-injured patient nutritional support is very important in mimimising catabolic effects of the stress response, mimimising risk of infection and to aid wound healing and also to avoid feeding complications. The nutritional plan implemented is dependant on the key of swallowing dysfunction, the potential risk of aspiration and the current nutritional status. The dieticians role is in assessing the current nutritional status and assessing nutritional requirements which are greatly increased in acute stages, and in prescribing appropriate tube feeds and monitoring progress.

Those patients who have suffered a severe brain stem injury and are likely to have permanent loss of swallowing function will require long term artificial feeding via a percutaneous endoscopic gastrostomy (PEG). PEG is the route of choice for these individuals. Dietetic input is essential in all stages of management of neurosurgical patients.
NUTRITION AND NEUROSURGICAL PATIENTS

BRITISH AND AMERICAN ARTICLES

1. Young B. et al. The Effect of Nutritional Support on Outcome from Severe Head Injury.

This article reports the results of a prospective randomised study to determine the effect of nutritional support on neurological outcome of severely head-injured patients. Fifty one brain injured patients were prospectively randomly assigned to receive total parental (TPN) or enteral (EN) nutrition. The study showed that neurological recovery from head injury occurs more rapidly in patients with better early nutritional support of which the dietitian is part of the team.

2. Rapp R. et al. The Favourable Effect of Early Parenteral Feeding on Survival in Head-Injured Patients.

This article describes a prospective randomised clinical trial comparing the effects of early parenteral nutrition and traditional delayed enteral nutrition upon the outcome of head injured patients. The outcome for the groups was quite different with 8 out of the 18 SEN patients dying within 18 days of injury, whereas no patients in the TPN group died within this period. The basis for the improved survival in the TPN patient appears to be improved nutrition. The data from this study strongly supports the favourable effect of early TPN on survival from head injury.
Previous studies have shown that head-injured patients are hypermetabolic/hypercatabolic and difficult to support by IV total Parenteral Nutrition or gastric enteral feedings. To determine the efficiency of early jejunal hyperalimentation as nutritional support in the head-injured patient, 32 head injured patients were studied for the first 7 days after injury. The study group received nutritional support equal to this measured resting energy expenditure within 3 hours of injury while the control group were fed gastrically when bowel sounds returned. The study group showed increased calorie and nitrogen intake and improved nitrogen retention markedly reducing infections and days of stay in the intensive care unit. Thus the dietitian must play an important role in nutritional support from the early stages of treatment.
NUTRITION CARE IN HIV DISEASE

As outlined in the articles below Nutritional Support is of major importance in the treatment of patients with HIV Disease.


This article written by a Senior Dietitian specialising in the nutritional management of HIV antibody positive patients in St. James's Hospital Dublin describes the importance of nutrition intervention in all stages of HIV disease. In 1993 1,368 HIV antibody positive patients had been detected in Ireland of which 694 are IV drug users and 341 seropositive patients have been diagnosed with AIDS. Malnutrition is a common component of HIV disease and as it has been shown that malnutrition decreases resistance to infection then if malnutrition is controlled during the early stages of HIV infection when the immune system which is suppressed in the presence of HIV, may function better. During the asymptomatic stage of HIV infection, the goal of nutrition counselling is to promote an adequate balanced diet for maintenance of weight and prevention of malnutrition. The dietitians role is to help the patient to adjust his/her eating habits to meet nutritional goals.

When patients become symptomatic they are highly susceptible to nutritional problems such as weight loss, malabsorption, nausea, diarrhoea etc. These patients require professional dietetic advice so that they can cope with these nutritional problems. Sarah Dowling believes that it is of paramount importance that nutritional education be a component of total health care provided for HIV positive patients. Possible benefits include increased strength, reduced secondary infections, and augmented response to drug treatment. Therefore all seropositive patients should receive the full benefit of existing nutritional knowledge.

While there have been a number of cross sectional studies on the prevailing nutritional status of AIDS patients this study was one of the first to examine the efficacy of dietetic treatment in an AIDS Clinic. In this study 17 asymptomatic (CDCII) and 17 symptomatic (CDClV) patients participated in a 12 week evaluation of out-patient dietetic advice in St. James’s Hospital, Dublin. On their initial visit to the dietitian each patient underwent anthropometric examinations and had their diet evaluated. A general social medical questionnaire was completed. All patients received individualised nutrition counselling and diet prescription. Food allowances from the Department of Social Welfare and prescriptions for high energy feeds and a vitamin and mineral supplement were arranged. After 4 weeks of dietary allowances, the patients were re-examined to check weight and adherence to dietary advice. On week 12, all patients were examined anthropometrically and underwent a diet history.

The results showed significant increases in the intakes of most nutrients, the greatest effect seen with the symptomatic CDC IV group. The authors conclude that it is clear that dietetic counselling is very effective in this group. Although the authors agree that dietetic counselling leading to substantial increases in nutrient intake would not necessarily abate the nutritional problems of HIV disease possible benefits include improved quality of life, more effective use of therapy and reduced incidence of nutritional deficiencies which could affect the disease. Therefore the conclusion is that the sooner patients diagnosed as HIV antibody positive are referred to Dietetic Clinic the more useful will be the dietetic input into treatment.
NUTRITION CARE IN HIV DISEASE

AMERICAN ARTICLES


This American Committee believe that nutritional therapy is as important as drug therapy in the management of HIV disease. Without adequate lean body mass stores, medical therapies are less effective and may fail. Nutritional support must be considered as an integral part of the care planning process and not as alternative or adjunctive therapies. This article describes nutritional intervention criteria and symptomatic management strategies to maintain and improve nutrient intake for which the dietitian must be a important component of. The research explored at the First International Symposium on Nutrition and HIV/AIDS in Amsterdam put forward that early intervention will be the key to providing effective therapies and demonstrate cost benefit and cost effectiveness. Education of patients on the integration of medical, psychosocial and nutritional therapies may yield the best results. The dietitian must be involved in this important therapeutic area.


Aids presents a challenge for dietitians. Changes in the Immune System have a potentially detrimental effect on nutritional status as a result of conditions such as anorexia, infection, diarrhoea and drug side effects. Conversely poor nutrition status may adversely alter the immune system. Current medical literature indicates that good nutrition may prevent some symptomatology of AIDS and may prevent against further exacerbation.
While the present prognosis for AIDS remains grim, nutrition care can improve the quality of patients' lives by assisting them in actively participating in their own care and promoting their maintenance in the event that a cure is discovered. The American Dietetic Association believe that dietitians are uniquely qualified to intervene being able to translate current scientific information into individualised, practical and safe dietary habits. AIDS patients may be overwhelmed by the confusing array of nutrition information available. It is imperative that a person with knowledge and expertise in the area be available to assist them in determining what is appropriate.
DIABETES MELLITUS

Diabetes is a common condition with a prevalence of about 2% in the population. The figure is higher in the older age groups and over the age of 65 is more than 4%.

Diet therapy is an integral part of the medical treatment of diabetes and for some diabetics, it may be the only treatment necessary. Other diabetics will require insulin injections or oral hypoglycaemic therapy but this will be in addition to the diet. Treatment of diabetes aims to keep the blood glucose level as near normal as possible in order to prevent short term problems e.g. hypoglycaemia and long term complications e.g. heart disease, renal disease and retinopathy. Because the diagnosis of diabetes carries an increased morbidity and mortality risk it is essential that the dietary management is as up to date as possible and geared to the patient’s way of life so they are given the best possible chance of achieving the dietary goals advocated by the British Diabetic Association.

Dietary compliance among diabetics has in the past often been poor and as people are often resistant to dietary change it is vital that dietary advice given by a qualified dietitian is tailored to individual needs. Patients should be able to understand the reasons for each component of the dietary treatment and proper education of a diabetic patient cannot be achieved in a simple consultation - adequate following is essential to re-enforce teaching and to answer specific queries of patients.

This article deals with a study carried out in the Cork Regional Hospital examining the dietary intake of 122 patients with Insulin Dependent Diabetes to establish whether current dietary recommendations for diabetics were being met. The subjects were selected randomly from patients attending a diabetic clinic and stratified for age, sex, and duration of diabetes. Dietary intake was assessed using G 3-day recorded food diary. The results obtained were compared to the nutritional guidelines proposed by the European Association for the Study of Diabetes and to the results of a recent Irish population dietary survey.

All the 122 patients in the study had received individual advice from a dietitian on first referral to clinic. However only 21% had seen a dietitian in the 2 years prior to the study, 26% last saw a dietitian 2-5 years previously and 53% had not seen a dietitian for more than 5 years. The results show that the present dietary targets for diabetic patients were not being fully achieved in that dietary intake of protein and fat was significantly higher than advised, and total intake of carbohydrate was significantly less than recommended. Compliance to the diabetic diet is difficult but the poor rate of attendance for dietary review similar to that found in other studies might reflect an underfunding of dietetic services and a lack of awareness among doctors of the need for dietary reinforcement.
Nutrition affects the outcome of diabetes mellitus directly through control of blood glucose and lipids and indirectly through therapeutic effects on high blood pressure and obesity. The prevalence of microvascular and macrovascular diabetes related complications have been associated with increased glycosylated haemoglobin levels, elevated plasma cholesterol, decreased HDL - cholesterol and elevated blood pressure. The principal goal of nutritional therapy in diabetes is to promote normal blood levels of glucose and lipids.

The diabetic diet can be complex and may become further so as the disease progresses. As members of the diabetes team, dietitians can assist patients in improving glycemic control, hypertension, and improving lipid levels. These changes can slow the progression of certain diabetes complications and may reduce risk for other diseases.
INTRODUCTION ON NUTRITION IN CYSTIC FIBROSIS

CYSTIC FIBROSIS

Cystic fibrosis is the most common potentially lethal genetic disease in caucasians. It is an autosomal recessive gene which is carried by one in 20 - 25 of the caucasian population and its incidence is about 1 in 1000 - 2500 live births. The outlook for patients with Cystic Fibrosis has improved and average survival is now about 30 years.

As the disease advances most patients find difficulty in maintaining adequate body weight. The reasons for this decline in weight are multifactorial including increased requirements due to chronic sepsis, increased work of breathing, pancreatic insufficiency and decreased intake due to anorexia.

Nutritional support includes dietary advice on high protein, high calorie intake, multivitamin, pancreatic replacement therapy and multiple nutritional supplements.

Even with this level of nutritional support weight loss can continue and the recognition of a relationship between improved nutritional status and improved survival has prompted many trials of aggressive nutritional support including enteral and parenteral feeding, nocturnal nasogastric feeding and gastrostomy feeding.
This article is a general review of the present numbers and treatments of Cystic Fibrosis patients in the main Cystic Fibrosis Clinic in Ireland. Cystic Fibrosis is an autosomal recessive condition characterised by abnormal exocrine secretions and elevated sweat sodium. The life expectancy has improved and the prevalence of Cystic Fibrosis among adults is increasing worldwide leading to the development of specialised adult Cystic Fibrosis Centres with experienced multidisciplinary teams to care for those patients. The Cystic Fibrosis Clinic was opened in St. Vincent’s Hospital in 1977. Treatment of Cystic Fibrosis includes intensive antibiotic drug and physiotherapy. Nutritional support includes dietary advice on high protein, high calorie intake, multivitamin, pancreatic replacement therapy and multiple nutritional supplements. The range of nutritional status in adolescents and older patients varies widely. The British Paediatric Association has specified that the minimum staffing levels required to run a Cystic Fibrosis Centre should include a consultant physician, junior medical staff, a nurse, two physiotherapists, laboratory technician, part time dietitian, social worker and secretary per 50 patients. These standards are not being met at this Cystic Fibrosis Clinic and as it is anticipated that the number of Irish adult Cystic Fibrosis patients will continue to increase the area of future specialised services will need to be examined.

2. J. Dowsett. Nutritional Assessment In Cystic Fibrosis. A Dissertation Submitted To Trinity College, Dublin For the Degree Of Master of Science. Oct 1993. This study was carried out to provide information on the nutritional status of Irish adults with Cystic Fibrosis. As described in the previous article nutritional therapy is an important part of the medical treatment of Cystic Fibrosis and maintaining optimal nutritional status in the out-patient
population may reduce the number of hospital admissions. Julie Dowsett is a dietitian working with Cystic Fibrosis patients in St. Vincent's Hospital where nearly 200 adolescents and adults attend. At present there are only limited out-patient dietetic services available to these patients.

The study involved 18 adult patients given detailed personalised nutritional advice plus vitamin supplementation. Nutritional status was assessed 4 months later and the majority had increased their energy intake significantly and gained weight. There was also an improvement in vitamin status.

The study emphasises the importance of nutritional counselling and the role of the experienced Cystic Fibrosis Dietitian in the Cystic Fibrosis Out-Patient Clinic in order to improve the wellbeing of Cystic Fibrosis adults.


Previous studies have shown a close inverse correlation between the degree of malnutrition and survival of children and adolescents with Cystic Fibrosis. Success in improving the clinical course of Cystic Fibrosis has been demonstrated using nutritional rehabilitation techniques. For this study a group of Cystic Fibrosis patients with body weights below the 10th percentile for age and sex received nocturnal nasogastric supplementation. The results showed that body weight and mid arm circumference increased significantly after supplementation showing that nocturnal nutritional supplementation of which a dietitian would play the role in prescribing and monitoring, while allowing ad lib oral intake during the day may be an effective means of improving nutritional status.
CYSTIC FIBROSIS


This paper describes a study that was carried out to examine the effects of nocturnal nasogastric feeding on a group of adult Cystic Fibrosis patients. The results showed that while lung function remained stable during the period of feeding, a significant correlation between improvement in lung function and weight gain was demonstrated.
INTRODUCTION TO NUTRITION IN ELDERLY

Although frank malnutrition has been largely eliminated from most sections of the population it is still occasionally found amongst the elderly. Malnutrition in the elderly is brought about by changes in economic circumstances and way of life which often occurs on retirement and by the increasing incidence of disease and disabilities which lead to alterations in dietary intake, absorption and metabolism of nutrients.

A significant proportion of older people have low dietary intakes below recommended nutrient intakes. The significance of sub clinical malnutrition and the extent to which the health of old people would benefit from increased dietary intakes are unknown. However it is important to raise the levels of nutrients in order to make individuals more resistant to the effects of stress due to non nutritional diseases which become increasingly common with advancing years.

The most satisfactory means of promoting good nutrition is by improving the quality and in some cases the quantity of the diet. Dietetic intervention has an important role in helping to decrease the morbidity and mortality of the elderly population.
NUTRITION FOR THE ELDERLY


This paper discusses a study carried out in Galway assessing the nutritional status of a selected sample of 46 rural and 24 urban elderly people living at home. The nutritional concerns of the elderly are becoming increasingly more important and relevant as the population numbers over 65 years of age increases. To assess the nutritional status of the sample a trial of dietary intake assessment, laboratory blood analysis and anthropometric measurements were used. Based on the results of those measurements it was found that nutritional inadequacy exists in both the rural and urban subjects. Both groups, but in particular the rural elderly were discovered to have deficient intake of many nutrients when compared to 80% of the Irish recommended dietary allowances. The authors believe that better dietary education should be conducted. This could be carried out by community dietitians. Also more extensive and representative surveys are needed to assess the nutritional status of the elderly population as a whole as this study does suggest that both elderly rural and urban subjects may be inadequately nourished.


This article is a general review on the factors affecting the nutritional status of the elderly in Ireland and how nutritional problems are tackled. As the percentage of the population over the age of 65 has increased since the beginning of the century and is steadily rising with projections of a 7% increase between the years 1981 and 2006 the author feels that its important that the problem of poor nutritional status should be tackled. The author describes the various physical and mental conditions, drug nutrient interactions and social circumstances that can lead to impaired nutritional status in the elderly. The author feels
that it is important that a multi team approach in clinics, hospitals and communities be used to tackle the problem. Information on weight, from regular weighing, pharmacological regimens and disease status should be reviewed regularly. Patients with low weight, continued weight loss, fatigue, delayed wound healing should have a dietary assessment by a dietitian. If a deficiency is found in one or more nutrients treatment should include dietary advice and if necessary the introduction of fortified foods or nutrient supplement. As the study by Fogarty et al showed there is evidence to show that quite a large segment of the elderly population are undernourished so the benefits to be gained from improving the nutrition standards in the elderly include not only the financial savings made from the reduced use of health services for acute care but also improvement of the quality of life for the elderly population.
NUTRITION AND THE ELDERLY.

SWISS ARTICLE

Delmi et al. Dietary Supplementation in Elderly Patients with Fractured Neck of the Femur.
The Lancet. 1990: 335: 1013-16

This paper describes a prospective randomised study aimed at assessing the clinical benefits of a simple oral dietary supplement in elderly patients after fracture of the proximal femur. Malnutrition may be an important determinant of both the incidence and complications of hip fractures in the elderly. Malnutrition occurs frequently in the elderly and patients with fractured proximal femur seem especially undernourished. Nutritional deficiencies can lead to an increase in complications and a higher mortality rate. In this study 27 patients received an oral nutrition supplement daily while the control group did not receive any supplements. On admission most patients were found to have nutritional deficiencies. Despite being offered adequate quantities, nutritional requirements were not met during the hospital stay.

The results showed that clinical outcome was significantly better in the supplemented group during the stay in hospital. The rates of complications and deaths were also significantly lower in supplemented patients. Six months after the fracture the rates of complications and mortality were significantly lower in supplemented patients. The median duration of hospital stay was significantly shorter in the supplemented group.

The study shows that the clinical outcome of elderly patients with femoral neck fracture can be improved by once daily dietary oral supplementation.

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The following articles adequately summarise the most up to date thinking on Diet and Pregnancy.

This article is a general review of the importance of nutrition and nutrition education during pregnancy. The author is a nutritionist presently carrying out research in the area of nutritional status of women during pregnancy. She reviews the requirements of each nutrient during pregnancy and talks specifically about iron and folate both of which have increased requirements during pregnancy.

Iron supplementation is routinely prescribed during pregnancy by many G.P.’s. and doctors. Compliance is often poor as significant numbers of women suffer from nausea, diarrhoea or constipation. Supplemental iron may also impair zinc absorption and it has been suggested that zinc status may be significantly lower in mothers delivered of small for date babies. A recent study carried out in the Coombe Hospital, Dublin compared a group of pregnant women taking iron and folate supplements daily with a group given dietary advice to achieve the RDA’s. Although there was no clinically significant difference between the two groups with respect to pregnancy outcome or incidence of anaemia there was a significant difference in the incidence of constipation, affecting 4% of the dietary advice group and 46% of the iron supplemented group. Ideally in place of routine supplementation adequate iron status should be achieved pre-conceptually through proper dietary education and supplementation should occur only in cases of increased requirements above the norm.

Folate status in early pregnancy is also of particular interest because of its possible relationship to the occurrence of neural tube defects. Recommendations have been made by the Centre of Disease Control (CDC) in the U.S. and U.K. Department of Health that all women who have previously had a normal term delivery baby receive folate supplementation. It is also recommended that all pregnant women take extra folate prior to conception and during the first 12 weeks of pregnancy. This can be attained through diet, food fortification or supplementation. Analysis
of the dietary intake of the women in Ms. Cahill's study found the average daily intake of folate to below the recommended intake. Again nutrition information and education is required to provide information on good dietary sources of folate with particular emphasis on women in the lower socio-economic groups as studies have shown benefits in reducing the risk of first occurrence of normal term deliveries by high dietary folate intakes before and during pregnancy.

Dietary education is also vital in dealing with nutrition related problems of pregnancy such as nausea, vomiting, obesity, gestational diabetes. During pregnancy women may be particularly receptive to guidance regarding behaviours that may influence her health and that of her developing foetus. It has been shown that prenatal nutrition education programmes can positively influence pregnancy outcomes, notably by reducing prematurity and perinatal mortality rates. Ms. Cahill believes from her studies in the Coombe Hospital and research into the area that nutrition education should be provided for all women particularly those from lower socio-economic groups.


The prevalence rate of Neural Tube Defects at birth in the Republic of Ireland at 4.38 per 1000 is one of the highest in the world. Possible environmental trigger factors involving nutrition include poor maternal nutritional status, and maternal deficiency of folate. It has been shown that dietary counselling, periconceptual vitamin supplementation and folic acid supplementation in mothers with a history of previously affected offspring resulted in a reduction in the expected rate of recurrence. It is imperative according to the author that those with a family history of normal term deliveries should be counselled prior to starting a pregnancy so that they can be advised on the importance of diet and periconceptual vitamin supplementation.
PREGNANCY


Great physiological and biochemical changes occur during pregnancy to allow for satisfactory fetal growth and development. Several studies have demonstrated the strong association between poor nutrition in the pregnant woman and growth retardation of the fetus, particularly in growth and development of the brain.

Nutrition assessment and intervention in pregnancy is an essential part of adequate prenatal care. Prenatal nutrition care services should be available to identify women at nutritional risk, to provide nutritional care in the form of individualised goal-setting and counselling, and to monitor and treat nutrition-related conditions that lead to poor pregnancy outcomes. Nutrition intervention improves pregnancy outcomes, which translates into healthier infants and cost savings to all health care systems.
NUTRITION AND THE MANAGEMENT OF HYPERLIPIDAEMIA.

This is a general article on the dietary guidelines in the management of Hyperlipidaemia. Both the authors emphasis that the "Guidelines on the Diagnosis and Management of Hyperlipidaemia in General Practice" published by the Irish College of General Practitioners and the "Guidelines for the Management of Hyperlipidaemia" published by the Irish Hyperlipidaemia Association strongly recommend dietary management of Hyperlipidaemia as the first line treatment. The authors feel that this could well be the sole treatment for those with cholesterol levels in the range 6 to 8 mmol/L who make up the largest group of patients with Hyperlipidaemia in a practice.

This document which deals with the implications of Hyperlipidaemia in relation to public health was published following a meeting of 12 hospital physicians who agreed to its general principles. The report documents that in all patients, Hyperlipidaemia should be dealt with as an integral part of a comprehensive risk factor management. When data are examined in terms of dose response effect, it becomes apparent that the more cholesterol is reduced the bigger the effect on coronary disease, and a noticeable effect on total mortality is seen when cholesterol levels are reduced appreciably. There is remarkable consistency among experts worldwide about nutritional guidelines for preventing coronary heart disease. Ireland has one of the highest death rates from coronary heart disease in the world and a high average cholesterol level (6mmol/L). The group believe that more dietitians are required, both in hospital and in the community to deal effectively with the problem of nutrition and Health.

The effective prevention of Coronary Heart Disease has to include both a population strategy addressing national diet, smoking and lifestyle, and a high risk strategy to identify those individuals with specific risks in known general measures may be insufficient.

Cost effectiveness studies have calculated that opportunistic measurement of cholesterol and subsequent diet and drug management by GP teams is highly cost effective. The cost of £550 per quality adjusted life year compares well both with costs of CHD treatment and other established prevention programmes such as those for breast and cervical cancer screening.

Cholesterol management should form part of a multiple risk factor assessment with priority for those at high overall risk. The authors believe that active dietary intervention should be offered to all patients, with drug treatment reserved only for a small minority.
This paper is an evaluation of the services of a practice dietitian 18 months after its initiation. Part of the G.P.'s duties is a responsibility to provide preventative medical care to vulnerable patients in their practice. Two such groups are the obese and hyperlipidaemia patients and these require diet therapy. Without access to a dietetic counselling service the G.P. can only offer dietary advice in a handout leaflet form. However, as documented in another article included (Flynn et al 1993. How Effective Is Health Eating Advice For Women From Different Socio-Economic Groups? Proc. Nutr. Soc; 52: 20A) these leaflets are ineffective at improving dietary intakes so in many cases G.P.'s may use drug treatment for diet related conditions.

In this report of a dietetic service in General Practice a total of 80 patients were referred to the practice dietitian. Twenty eight hyperlipidaemia patients who failed to respond to a healthy eating leaflet were referred and more than half of these patients (57%) were successfully treated by the dietitian obviating the need for drug therapy.

Results from the overweight/obese group show a high drop out rate. However their dietary needs could best be met by individual counselling by a dietitian.

The paper also reviews the comparisons of costs of dietetic treatment as opposed to drug treatment.

The GMS cost of anorectic Drugs at the time of the study was £90,103 per annum as opposed to £41,328 spent on salaries for three community dietitians in Ireland.

The cost of the first drug of choice for treating hyperlipidaemia (Cholestyramine) is approximately £1,000 per patient per year for
the minimum starting dose whereas a year’s dietary treatment per patient is a fraction of this cost.

Reports have identified urgent needs for improved nutritional education and training in dietary counselling of all primary health care workers including G.P’s. Community dietitians are trained to do this but there are too few of them employed at present to deal with the problem.

The author also put forward other advantages to having the dietitian on site. It provides a team approach to the patient with good communication regarding progress and findings in the dietary treatment. An advantage for the patients is the on site location which eliminates transport costs and time spent in getting the service.

The authors conclude that dietary intervention by the G.P. was greatly enhanced by the nutritional information provided by the practice dietitian. The authors expressed concern that the most vulnerable group of patients (GMS patients) are excluded from this preventative medical service due to lack of government funding. They feel that the government appears to be more willing to fund expensive drug treatment for diet related problems but is not forthcoming with an appropriate funding to establish community dietetic services in a realistic way.

This report concerns the experience of one nutritionist/dietitian who was appointed to a general hospital in Ireland as part of a Manpower experience programme. Many of the diseases necessitating admission to acute general hospitals have a nutritional component and the need for corrective dietary advice as well as sophisticated oral and parenteral dietary management of modern hospitals requires the services of trained hospital dietitians.

During the 26 week period, 607 patients were referred for dietary advice on whom a total of 2,603 consultations were carried out, both as inpatients and outpatients. An increase in the dietary fibre and a reduction in the protein and fat content of the patients were recommendations made by the Food Advisory Committee 1984. This represented a saving of over £15,000 in one year in a general hospital the size of Wexford General Hospital.

Wexford General Hospital benefited greatly from six months of having a dietitian. All the hospital staff were made aware of the importance of diet and nutrition in the management and prevention of disease. The dietitian was also great help to patients in the management and control of their disease by dietary measures alone rather than the addition of drug therapy.
The pilot Community Nutrition Project was commenced in February 1992. The overall function was to promote, develop, implement and evaluate a community based healthy food choice programme in the process of improving the nutritional status of the Irish population and reducing the incidence of diet related diseases - coronary heart disease, obesity and certain cancers.

The functions of the Community Dietitian in this project were

1) To provide information i.e. resource materials, training packs and nutrition references for target groups:
   - Health Professionals, Voluntary Groups, Community Groups,
     Private Sector, Schools/Colleges and media.

2) To liaise with these groups.

3) To provide training/familiarisation programmes for target groups.

This report includes an inventory of all the activities carried out over the year. Reports were written as a means of recording these activities of the service and to raise an awareness about the service. The Healthy Eating Week from 1st to 7th November was successful in promoting an awareness of the Healthy Eating Guidelines, especially in the food retail sector.

Marguerite O’Donnell concludes from the success of the activities carried out that it is feasible to implement a community programme for Nutrition Health Promotion.

This paper highlights the need for nutrition specialists to generate measurement studies to quantify the extent to which various nutritional interventions deliver health. Health care reforms aimed at controlling health expenditures present a threat to nutrition services in the absence of outcome research. The challenge is to generate the outcome studies, while maintaining the traditional patient orientation that has characterised nutrition.
**OBESITY**

Obesity is a growing problem. In western societies it is usually most prevalent among the less affluent members of society but it does occur right across all social classes. There are various predisposing factors lead to obesity including genetic and environmental factors but the consumption of high energy foods combined with low activity will lead to excessive weight gain.

Some people will naturally be fatter than others but the advocate of a diet with moderate total energy intake and a relatively low proportion of energy coming from fat with encouragement of increased activity should be advised to all individuals with a BMI > 30.

Regular follow-up and constant encouragement is vital in order to maintain compliance to the diet. In some cases a slimming group facilitated by a Dietitian/Clinical Nutritionist has been shown to be more effective in achieving weight loss than individual counselling.

As there are many increased health risks in these patients the problem needs to be tackled. Dietitians/Clinical Nutritionists play an important role in providing education for the public so that they can realistically adopt a healthy varied diet combined with regular exercise.
Obesity has been linked to disease diabetes, hypertension, raised cholesterol, diseases of the digestive system and some cancers. To design effective weight loss programmes, obesity must be viewed as a chronic disease rather than a behavioral abnormality. No studies in America have quantified the cost-effectiveness of weight reduction in the management of diabetes, hypertension and hypercholesterolaemia. However, weight reduction is widely supported as an important step in effective management of these major chronic diseases.
TODDLERS

Toddlers depend on others, either their parents or carers for their food supply. Food and eating are sources of learning for children but can also be sources of frustration and a cause of arguments between parents and child because of faddish eating habits. Parents and carers need to be reassured that all toddlers go through phases of faddish eating habits and if the child appears to be fit and active then there is little to worry about.

However in some cases nutritional problems can occur in preschool children.

Undernutrition can occur if an inadequate diet is being offered to the child due to nutritional ignorance or low income. If an adequate diet is being eaten by the child due to food refusal - this can lead to poor growth and specific nutritional deficiencies such as Iron leading to anaemia.

Regular monitoring and assessment of toddlers with poor growth should be carried out and dietitian advice should be sought if nutritional problems are present.
NUTRITION AND CEREBRAL PALSY


This study was designed to assess the nutritional status of a sample of eight children and adolescents with cerebral palsy in a residential home and to identify the specific nutritional concerns of their carers. The results indicated that at least five of the subjects required dietary intervention. From analysis of the nutrition concern of carers it was found that nearly all expressed the opinion that professional dietetic assessment of all the residents would be very useful in determining whether their consumption was adequate. Also the carers perception of the childrens' nutritional status was not reflective, in all cases, of the results of nutritional assessment carried out in this study. The overall impression received was that while the carers are generally aware of the importance of nutrition and do their best to ensure the residents in their care consume an adequate intake for growth and maintenance, a more formal assessment of nutritional status is required to give a more objective description of the subjects situation.

Research has shown that early nutritional intervention ensures better increases in both weight and length in children with cerebral palsy and the development of a protocol for the early identification of those, most at risk for nutritional deficiencies and the resulting therapy is required. Ms. Fayne's final conclusion from her research is that the carers of these individuals do require advice on their specific nutritional requirements. She believes that nutritional therapy should be incorporated into the overall management of cerebral palsy as it is equally as important as in any other population group.
DIETETICS AND TODDLERS


Reports suggest that 30% of children aged 1 to 4 years inclusive are anaemic, and an additional 25% are iron deficient. Anaemia, is most often nutritional in origin, due to lack of iron from excessive intake of cows milk and carbohydrates and "junk food" diet. This study examined the iron and nutritional status of 22 clinically well and normal Dublin toddlers. The results showed that the diet contained adequate energy, protein, fibre and amino acid but iron intakes and stores were poor. This finding is important because evidence is accumulating that even mild forms of iron deficiency may be associated with impaired function of various tissues. There is a need for dietary education and for a larger survey to determine the prevalence of nutritional and in particular iron deficiency.
SOCIALLY DIS-ADVANTAGED AND LOW INCOME GROUPS

The un-employed and those on low incomes suffer significantly more ill-health and have higher mortality rates than those on high incomes. Some of these health problems such as obesity and coronary heart disease can be partially attributed to diet.

Studies have shown that households on low incomes tend to eat significantly more relatively cheap foods that tend to be energy dense and relatively high in fat and sugar. They also tend to eat less fresh and frozen vegetables, fresh fruit and wholemeal products. This leads to diets lower in dietary fibre, Vitamin C, folic acid, B complex and iron.

It is of major importance that people on low incomes are educated about components of a healthy diet. However, the advice has to be practical and realistic. Expert dietetic advice is required to teach individuals how to achieve a healthy eating pattern on the incomes available. This can be achieved by careful budgeting, advice re shopping and food preparation. Dietitians/Clinical Nutritionists by means of appropriate advice while not alleviating poverty can help to reduce it’s nutritional consequences.

Dietitians, because of their professional training and expert knowledge of basic nutritional requirements are the ideal health professionals to give appropriate advice to individuals on lower incomes. This expert advice, while not alleviating poverty can help to reduce it’s nutritional consequences.
DIETETICS FOR VARIOUS SOCIO-ECONOMIC GROUPS


In this review article the author who has carried out a lot of research in this area herself reviews the findings of recent Irish dietary studies that focused on low socio-economic groups or have included these groups in their study sample. She highlights the dietary problems which have been found to be associated with social disadvantaged in this country.

The three groups which she identified as being particularly vulnerable to nutritional inadequacies are preschool children, adolescent girls and women, especially single mothers.

The main nutritional inadequacies were iron, vitamin C and fibre. Quite a large proportion of the children had low intakes of zinc, folate and vitamin D. In addition to this and in common with the rest of the Irish population fat intakes exceeded the recommended value of 35% of energy.

The author feels that to achieve optimum nutrition for socially disadvantaged groups in this country a number of approaches may be necessary. As part of this dietary supplementation and nutrition education play an important role. A nutrition education programmed that was designed by the author, specifically for use in disadvantaged areas of Dublin has been shown to be effective in improving dietary intakes in preschool children. Expert dietetic knowledge is required as much of the success of this programme was attributed to the fact that the dietary recommendations were feasible, the dietary advice was realistic and was based on the current dietary habits and customs of the target group.

The author believes that appropriate nutrition intervention with individuals in lower socio-economic groups may help improve their nutrient intakes, improving their health and helping redress some of the balance in health between the social classes.
2. Flynn M et al. - How Effective is Healthy Eating Advice For Women From Different Socio-Economic Groups?
PNC of Nutr. Soc: 1993; 20A

This study was undertaken to examine the effectiveness of standard healthy eating advice through use of a standard leaflet (the level of dietetic information normally supplied by the GP) on working women from socially advantaged (SE classes 1 and 2) and disadvantaged (SE classes 5 and 6) backgrounds. The results of the study indicated that the differences between baseline and follow-up were accounted for by differences between the SE groups and not due to healthy eating advice. These results question the usefulness of this type of healthy eating advice leaflet as a tool to improve dietary habits.

Research by Ms. Flynn has shown that "healthy eating advice" is extremely complex and is not conducive to being dispersed by individuals without dietetic training. Without access to a dietetic training service the G.P. can only offer dietary advice in a handout leaflet form. However this study has proposed that such leaflets may be ineffective at improving dietary intakes and so drug treatment for diet related conditions such as hyperlipidaemia and obesity may be the only option for G.P.'s due to the lack of dietetic services.
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