



# ESPEN 23<sup>RD</sup> CONGRESS DAILY NEWS

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## ESPEN promises a taste of Scotland...

**ESPEN 2002 is to be held in the historic and vibrant city of Glasgow. The meeting, which will be held at the Scottish Exhibition and Conference Centre from 31 August to 4 September, will adopt the theme: Patients Progress: The Journey from Science to Practice.**

Professor C. Pennington, Ninewells Hospital, Dundee, UK, and President of the British Association for Parenteral and Enteral Nutrition (BAPEN), explained the thinking behind the theme: "With this theme we recognise that science, education and clinical practice constitute an integrated programme. Developments in science require education. Education leads to change in clinical practice. Change in clinical practice poses new problems for scientific endeavour. Therefore, each symposium will start with science and conclude with clinical practice."

As always with ESPEN, the scientific programme aims to address 'cutting edge' topics, but Professor Pennington promised too, a focus on political, ethical and legal issues. One further innovation will be the electronic presentation of posters, which he says will

allow greater interaction between presenters and delegates. The social programme will offer delegates a taste of Scotland's heritage, as well as the opportunity to enjoy the country's most famous oral supplement: "I think it is called whisky. We hope to see you in Glasgow," said Professor Pennington.

### ...while ASPEN promises the sun

ASPEN President Professor P. Schneider invited delegates to attend the association's 26th Clinical Congress, to be held in association with Nutrition Week. The meeting will be held from 23 to 27 February 2002 in San Diego, California, where "we can guarantee sun and good weather," said Professor Schneider. Further information is available at [www.nutritionweek.org](http://www.nutritionweek.org)

## Why targeting inflammatory mediators benefits patients with cancer cachexia

**Cancer cachexia represents not only one of the most challenging areas of nutrition but also one of the most important to practising clinicians, if the size of the audience at the session on metabolic support of cancer patients, held on Monday, is any indication.**

The hall was packed as Professor K. Fearon from the Royal Infirmary, Edinburgh reviewed the pathophysiology of cancer cachexia and its multifactorial aetiology. Importantly, he also considered the potential for therapy focused on these factors to provide useful results in patients with cancer cachexia using polyunsaturated fatty acids such as eicosapentanoic acid (EPA). "These are of interest because the n-3 fatty acids not only downregulate pro-inflammatory cytokines – a key mediator in cachexia – but also block the end-organ response to proteolysis inducing factor."

When he gave EPA in an oral supplement to patients with advanced pancreatic cancer cachexia, he found there was reversal of the cachectic state in those

patients who achieved adequate levels of EPA in their plasma along with additional nutrient support in terms of high protein and high calorie intake. "We see these patients putting on lean body mass. This is a unique observation in relation to advanced cancer cachexia," he said. "By understanding the complex pathophysiology of cachexia we can design new treatment strategies that may be of therapeutic value in further patients."

Questioned on the value of targeting specific cytokines – the subject of posters presented at this meeting – Professor Fearon cautioned that this may have only limited therapeutic potential since other cytokines in the cascade would simply take over.

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However, the shortcomings of current practice in providing nutritional support in patients undergoing cancer surgery was highlighted by Professor K. Jauch, Head of Surgery at the University of Regensburg, Germany.

He reminded the audience that operative stress was known to lead to catabolism, which can result in poor outcome, and that malnutrition was common in patients with gastrointestinal cancer and with upper GI surgery, posing the main challenge to clinicians.

Metabolic alteration and nutrition support is common in cancer surgery yet most studies focused purely on the in-patient period rather than the patient's whole cancer journey. It was also well known that nutritional support in hospitals was often inadequate.

"My personal view is that we should aim for standardisation by nutritional teams. We should give preoperative pharmaconutrition in the malnourished and high-risk groups, and we should consider glucose loading instead of overnight fasting in major surgery," said Professor Jauch.

Postoperatively, he said the aim should be to achieve enteral nutrition as soon as possible and to give supplements in rehabilitation. Further research should be directed to long-term outcome "to look at whether perioperative nutrition of specific substrates may influence tumour dissemination and even long-term outcome. This may be as effective as some chemotherapeutic and adjuvant regimens," said Professor Jauch.

## Plans progressing for nutrition summer school in Portugal

*The idyllic medieval city of Porto, Portugal, is the likely location for a nutrition summer school which seems set to be both popular and professionally useful.*

Plans are now well advanced for the 'Nutrition Support Summer School for EU Healthcare Professionals' – a joint initiative by the ESPEN Dietitians/Nutritionists Group (EDG) and the ESPEN Nurses Group (ENG), Luiza Kent-Smith, Portugal, told a breakfast symposium on Monday. Speaking with ENG colleague Fred Prins, The Netherlands, Luiza said that the one-week school would have broad appeal among members of the nutrition support team, including dietitians and nutritionists, nurses, speech therapists, occupational therapists, physiotherapists, and even staff involved in food preparation.

The curriculum for the summer school, to be based at the Faculty of Nutrition and Food Sciences, University of Porto, will cover biochemistry, physiology, enteral and parenteral nutrition, body composition, dietary evaluation and nutritional assessment. There will be a strong practical emphasis with laboratory sessions and case studies. The language will be English.

ESPEN will apply for EU funding for the summer school, because it satisfies the criteria for a 'joint education/health project with a wide range of social impact'. Other sources of financial support may be sought, including industry sponsorship.

"In the longer term, we hope that the summer school will encourage a multiprofessional approach, and will help establish both common standards in clinical practice and the development of management guidelines. Furthermore, interaction with colleagues from other parts of Europe should create a network of 'professional friends'," said Luiza Kent-Smith.

Information about the summer school will be posted on the ESPEN website ([www.espen.org](http://www.espen.org)). Interested individuals can also email Luiza at [lks@mail.telepact.pt](mailto:lks@mail.telepact.pt) for further information.



## ESPEN Research Fellowship Symposium: young scientists present results

*Sunday afternoon saw the annual symposium given by the previous winners of the ESPEN Research Fellowship programme presenting the research carried out with the awards.*

**Dr A. Moses** from the University of Edinburgh, Scotland, was the first of six young scientists to take the floor. He presented the results of his studies looking at physical activity levels in patients with cancer cachexia. He used double-labelled water techniques to show that physical activity level is reduced in patients with pancreatic cancer cachexia. In addition, he was able to show in a large randomised controlled clinical trial that physical activity level rises when these patients are treated with an n-3 fatty acid enriched nutrition supplement. Furthermore, he added, "physical activity level may be a useful objective health status index." However, he acknowledged that double-labelled water techniques are expensive – one 14 day protocol uses 230 Euros-worth of labelled oxygen – and are also labour-intensive. He went on to say that "the important aspect of this technique is that it provides objective rather than subjective data."

**Dr H. Barle** was unable to be in Munich to present his work on the effects of growth hormone on albumin synthesis during surgery and in critical illness. The work was presented on his behalf by **Professor J. Werneman** from Huddinge University Hospital and Karolinska Institute, Stockholm. Patients with multiple organ failure were randomised to receive either growth hormone or placebo daily for 5 days, with albumin synthesis measured before and after this treatment period. The study suggested that recombinant growth hormone treatment may stimulate albumin synthesis by increasing transcription as well as translation in the basal state.

**Dr C.H. Deejong** from the Department of Surgery at Maastricht University, studied the mechanism of uncoupling proteins and ubiquitin-proteasome pathways in weight-losing pancreatic cancer cachexia. In these patients, weight loss occurs from both muscle and fat tissue. In patients with advanced cancer cachexia this is thought to be the result of both reduced food intake and increased energy expenditure, and possibly also because of some underlying metabolic error in fat, protein or carbohydrate metabolism. Dr Deejong looked at the ATP-consuming ubiquitin-proteasome pathway in muscle, which generates amino acids. His study concluded that in early pancreatic cancer patients, resting energy expenditure is not significantly increased, and there is no evidence in this study for increased UCP 2 or 3 mRNA or UCP 3 protein expression in muscle or UCP 2 in fat.

Insulin resistance has long been known to be a central aspect of the catabolic response and insulin sensitivity has previously been shown to decrease following major upper abdominal surgery. In addition, hypercaloric nutrition for several days is known to induce insulin resistance but preoperative oral carbohydrate loading has previously been shown to reduce this. **Dr M. Soop** from the Karolinska Institute, Sweden, presented a study based on the hypothesis that immediate postoperative enteral nutrition would further attenuate postoperative insulin resistance in patients pre-treated with oral carbohydrates before undergoing colorectal resection or anastomosis. Although much of his data is not yet fully analysed, he was able to draw some preliminary conclusions. "The first is that postoperative feeding does not attenuate insulin resistance in patients undergoing major abdominal surgery who have been pre-treated with carbohydrates. It does tend to cause raised levels of glucose and insulin, although these were not very high."

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A stable isotope study that looked at citrulline and arginine turnover in adult short bowel patients, was presented by **Dr K. Vahedi** from University Hospital Paris, France. He was able to show for the first time that "citrulline flux is correlated to the remnant small bowel length. The citrulline concentration is also correlated, as has been shown before, but we have a strong correlation between both of them. So in the future, maybe we could just measure the citrulline concentration rather than the flux, which is very time consuming, expensive and difficult. The citrulline concentration reflects the enterocyte mass function." Unlike glutamine and arginine, citrulline is the only amino acid that is produced specifically in the small bowel. In clinical practice, he added, this may indicate a need to give citrulline to these patients to maintain metabolic function.

The final presenter, **Dr D. Lobo** presented a prospective randomised controlled study into the effect of salt and water balance on gastrointestinal function and outcome after elective abdominal surgery, which could have important implications. He randomised 20 patients undergoing hemicolectomy for colonic cancer to either standard postoperative management (at least 3 litres of water plus 154 mmol sodium/day) or salt and water restriction (no more than 2 of litres water and 77 mmol sodium/day). Compared with the standard group, patients in the restricted group gained less weight (3kg less), had shorter solid and liquid phase gastric emptying times on the fourth postoperative day, earlier passage of flatus (by 1 day) and stool (by 2.5 days), and a statistically significant 3-day shorter stay in hospital. Furthermore, there were no complications in the restricted group, whereas two patients in the standard group had infective complications and three had prolonged postoperative confusion. Dr Lobo concluded: "Avoidance of salt and water overload after abdominal surgery accelerates the recovery of gastrointestinal function and improves outcome in patients undergoing elective abdominal surgery."

## Targeting oxidative stress

**Oxygen, said Professor H. Sies from Heinrich-Heine-University, Düsseldorf, Germany, is something of a Janus-like molecule since it has two faces. One of these faces is clearly beneficial and we cannot live without it. It is the second face, represented by the production of highly reactive oxygen species, that we have difficulty living with.**

"In order to defend ourselves against these highly reactive oxygen species we need antioxidants," said Professor Sies, as he presented at the 23<sup>rd</sup> Sir David Cuthbertson Lecture. He provided an overview of oxidative stress and the role of antioxidants in combating this. Reactive oxygen species are known to react with DNA, lipids and proteins, resulting in mutagenesis, protein denaturation, and membrane oxidation. Ultimately, these effects may result in well known disease states such as coronary heart disease and some cancers.

Reactive oxygen species vary widely in their half-lives, which range from days in the case of the semiquinone radical, to  $10^{-9}$  seconds, in the case of hydroxyl radicals, and many of the known

antioxidants appear to vary in their spectrum of activity against these agents.

Known antioxidants include tocopherols such as vitamin E, ascorbic acid (vitamin C), selenium, carotenoids ("without them, plants would get sunburnt," said Professor Sies) and the polyphenols that occur in red wine, green tea, cocoa and chocolate.

Although much remains to be elucidated, particularly with respect to selenium, the carotenoids and the polyphenols, Professor Sies showed how research had resulted in practical recommendations for nutritional practice, particularly in vitamin E and C supplementation.



## 'Safe' drinking threshold identified by a landmark Italian study

*The 'marriage' between alcohol and the liver is at best unsteady - at worst downright dangerous, according to Dr C. Tiribelli, Liver Research Centre, University of Trieste, Italy.*

But just how dangerous? A question which has dogged liver specialists for many years has been the threshold for 'safe' alcoholic consumption. "Previous reports from uncontrolled studies had indicated that a 'safe' daily ethanol dose was in the range of 20-10g, but the majority of these studies were uncontrolled or had other limitations," said Dr Tiribelli.

His research team's answer to this riddle was 'The Dionysos Project' – a truly epic study which enrolled more than ten thousand subjects from two Italian towns (Cormons and Campogalliano).

The successful completion of Dionysos has enabled Dr Tiribelli to quantify the risk of alcoholic steatohepatitis (ASH) – and the answer is 30g of ethanol per day. "The take home message from our study was that the risk threshold for ethanol-induced liver disease is 30g ethanol/day – above this threshold risk of liver damage increases exponentially with duration of intake," he told the meeting. 30g of alcohol per day is the equivalent of 3-4 glasses of wine or 2-3 pints of beer or two measures of spirits per day.

The Dionysos Project enrolled 10,151 subjects, of whom 6,917 aged 12 to 65 received a full clinical examination, nutritional assessment and recording of HBV and HCV markers. Information about ethanol consumption was collected using an illustrated questionnaire validated by a second interview and crosschecked with family members. All diagnoses were biopsy confirmed.

An interesting finding from the study was that the risk of liver damage for any given level of alcohol consumption was significantly higher if the alcohol was consumed without food. "Drinking outside meals clearly increases the risk of liver damage," said Dr Tiribelli.

### Steatosis risk

Dr Tiribelli's research unit has also been looking at fatty liver (steatosis) - a common finding in clinical practice. "The prevalence and incidence of non-alcoholic steatohepatitis (NASH) in the general population is difficult to estimate because of the need for liver biopsy," he said. Using the 6,917 subjects recruited into the Dionysos Study as a reference population, an intra-cohort case-control study was performed, in which this population was compared with 257 apparently healthy subjects aged 19 to 70 matched for age, alcohol intake and body mass index.

Cases were randomly assigned into four groups: non-drinking (teetotal) controls; non-drinking obese (BMI>30) individuals; heavy drinkers (>60g alcohol/day), and obese heavy drinkers. The prevalence of steatosis in these four groups was 16%, 46%, 76% and 95% respectively.

"The take home message from this study was that the prevalence of NASH in the general population is 16% in normal social drinking (<30g alcohol/day) and lean adults, but it is higher in heavy drinking (>60 g alcohol/day) lean people (46%) and even higher in obese (BMI>30) and not heavy drinking (<30g alcohol/day) subjects (76%)," said Dr Tiribelli. "Our results indicate that obesity is a greater risk factor for fatty liver than alcohol abuse. The biochemical markers most predictive for fatty liver were elevated triglycerides, ALT and GGT," he added.

***Look out for tomorrow's issue...***