



## ESPEN 2001 - a practical clinical focus

**Three thousand delegates from more than 68 countries are attending this week's 23rd Congress of the European Society of Parenteral and Enteral Nutrition (ESPEN), held in the International Congress Centre (ICM), Munich, Germany.**

Running from Saturday, September 8th to Wednesday, September 12th, the Congress has sessions devoted to nutritional support in cancer, obesity, cystic fibrosis, liver failure and elderly patients.

Immunonutrition, pharmacological nutrition and new substrates feature in an exciting programme which balances basic and clinical research with clinical practice. Topical clinical themes such as undernutrition in hospitalised patients and gastrointestinal motility disorders also feature in the scientific programme.

"Ethics, evidence-based medicine and quality management are further hot topics for ESPEN 2001. This year, ESPEN wants to focus more on practical issues surrounding the care of patients. There will be a number of sessions where the clinical management of different kinds of patients is addressed," said Congress President, Peter Fürst.

ESPEN's commitment to reach out and build new interdisciplinary networks with other societies, is reflected in three joint symposia arranged in conjunction with the European Association for the Study of the Liver (EASL), the American Society for Parenteral and Enteral Nutrition (ASPEN) and FELANPE, the Latin American society.

## Pharmacological clinical nutrition

**The latest fad for body builders in their quest for the perfect torso is conjugated linoleic acid (CLA). But although a product containing CLA is sold openly in the United States, much more research is needed before CLA can be embraced by dietitians, a symposium entitled 'Pharmacological Clinical Nutrition' was told.**

### Welcome from the President

*Welcome to the first edition of the ESPEN 23rd Congress Daily News bringing you the main stories from this exciting four day conference.*

*We are delighted that so many people have been able to attend. But, for those of you who can't make this year's meeting, we are happy to be able to provide this special news service which has kindly been sponsored by an educational grant from Novartis Medical Nutrition. By capturing selected highlights of the scientific content from the meeting, we hope you find it both useful and informative. Make sure you look out for tomorrow's edition.*

*Peter Fürst*

*President, ESPEN 23rd Congress  
Organising Committee*

A phenomenal number of studies on CLA are currently underway with papers currently being published at the rate of about 100 per year, Dr L. Bretilon, INRA, Dijon, France, told the meeting.

Results on the impact of CLA in atherosclerosis have been mixed, with some animal studies showing a lipid lowering effect, while others point in the opposite direction. "Work appears to show that CLA may enhance the promotion, or the regression of arterial fatty streaks, depending on the model or study," he said.

Ongoing studies in cancer prophylaxis have shown that CLA administration reduces the weight of experimentally induced tumours in rodents, but human studies have been less convincing. A small but non-significant reduction in risk of breast metastases with increasing level of CLA in breast adipose tissue was observed in one study. Work is continuing with 9c,11t-CLA and 10t,12c-CLA.

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As a modulator of energy metabolism, CLA shows greater promise. Animal studies have consistently shown that administration of 10t,12c-CLA modifies body composition, decreasing body fat mass and increasing protein content (lean mass) hence the enthusiastic uptake by body builders. However, injecting a note of caution, Dr Bretillon noted that these changes have been accompanied by marked liver enlargement in some models.

The mechanism of action of CLA in this setting is still being debated. Some studies hint at a leptin mediated pathway, others the opposite. The average daily dietary consumption of CLA by the German population is about 347 mg, mostly from meat, milk and dairy products. Before dietitians consider supplementing this intake, more research is needed – especially safety studies.

There are many isomers of CLA, and these need to be investigated in specific settings, in greater detail before recommendations about clinical use can be made, Dr Bretillon concluded.

## Complex oligosaccharides

Dr C. Kunz, University of Giessen, Institute of Nutrition, Germany, told the symposium that the pharmacological potential of complex oligosaccharides was currently creating a great deal of excitement.

“Many companies are currently working on synthetic or genetically engineered oligosaccharides,” he said. Much of this interest stemmed from the potential for carbohydrates in preventing infections by interfering with the adhesion of pathogens to cellular membranes – a pre-requisite for establishment of infection.

In rabbit and rodent models, selected carbohydrates had been shown to reduce adhesion and colonization with *S. pneumoniae* type 3. In simian models 3’sialyllactose had shown potential in the eradicating *H. pylori* infection.

“Antiadhesion therapy with complex carbohydrates is very attractive given the huge increase in antibiotic resistant bacterial pathogens and the need for new approaches to preventing infections,” said Dr Kunz.

Interestingly, human milk is relatively rich in complex oligosaccharides (5-10g/L) whilst bovine milk contains only trace amounts – a fact which may help explain why breast fed infants cultivate a gut flora rich in ‘helpful’ bacterial species such as bifidobacteria. Whilst formula fed infants are more likely to experience a flora dominated by enterobacteria, enterococci and clostridia.

## Nucleotides

The third speaker at the symposium Dr G. Grimble, Roehampton, University of Surrey, UK, traced the evolution of nucleotides as a focus of interest in clinical nutrition. These common precursors of RNA and DNA, which include nucleobases and nucleosides, are present in all foods which contain cellular material. Breast milk typically contains 0.4-0.7 mg/100ml – Munich’s Bavarian Wurst 50mg/100g and liver sausage about 300mg/100m nucleotides. Dr Grimble challenged the common belief that nucleotides are conditionally essential nutrients at the substrate level – however their true physiological function remains a mystery and a topic of much ongoing research.



## PEG - two decades later . . .

***Enteral nutrition was revolutionised 22 years ago with the introduction of a procedure with significant ethical and moral implications, said Professor M. Gauderer, chief of the Department of Pediatric Surgery at the Children's Hospital, Greenville, South Carolina, USA.***

Percutaneous endoscopic gastrostomy (PEG) was the subject of the opening lecture of ESPEN 2001 given by Professor Gauderer – introduced by ESPEN president Professor Peter Fürst as “the father of PEG”. The procedure was first performed by Professor Gauderer in 1979 in the United States on a 4.5 month old child with an inadequate oral intake. “That child did remarkably well, and is now 22 years old,” said Professor Gauderer.

He described the story of the origin and evolution of PEG and its ramifications in order to provide a clinical perspective of the clinical applications of the technique in general and his paediatric experience in particular.

The early PEGs were performed on children with an inability to swallow, but the indications soon expanded to neurologically impaired adults.

Despite initial misgivings, PEG was seen to have considerable advantages, though it does need to be performed by a skilled endoscopist.

Gradually, as PEG evolved, its acceptance widened, as witnessed by the growing number of research papers published on the procedure in peer-reviewed journals. Industry played its part too, by producing PEG kits and suitable liquid enteral feeds. “PEG is now the second most common indication for upper tract endoscopy in hospitalised patients. It has been accepted worldwide and the word PEG is now almost synonymous with gastrostomy,” said Professor Gauderer.

However, as experience of the technique grew, so did the questions about whether it was being used appropriately. Unsurprisingly, PEG is often at the centre of discussion on end of life care. Fortunately, guidelines for PEG placement are now emerging.

At the same time, the indications for PEG are broadening to include oropharyngeal abnormalities, inflammatory bowel disease, cardiac lesions, trauma, continuous enteral feedings, administration of medications (e.g. for AIDS patients), and hyperemesis gravidarum. In addition, it is used in high risk patients for feeding and long term gastric decompression as well as those with previous

abdominal surgery. It has also been combined with laparoscopically assisted procedures.

After any catheter placement, careful follow up and management are essential. Initially, a variety of minor and major problems are associated with catheter and stoma, including leakage, skin irritation, catheter migration, pain and decreased independence for the individual. This prompted Professor Gauderer to develop the gastrostomy button, a skin level device. But there remain problems with infection. “We need newer, longer lasting biomaterials that resist degradation and resist bacterial colonization.”

In addition, there was a need for refinements and innovations in access devices and techniques of placement. Guidelines for patient selection addressing complex religious, ethical, financial and moral concerns were also needed.

PEG placement, he said, should always seek to achieve or maintain appropriate nutritional status, but also to provide comfort and hope for the patient, and to facilitate care and improve quality of life. “An important goal should always be to return the patient to oral intake whenever possible – eating is associated with pleasure and the essential social interaction, and this is particularly important for tube-fed patients,” he said.

Professor Gauderer hoped his lecture would “encourage the younger investigators in the audience to ask relevant questions in research and clinical settings and then to develop new ideas and concepts in the field of nutrition.” He pointed out that in developing a new technique or long-term enteral access device it was essential to ask whether it was simple, safe and effective? When contemplating new approaches to feeding, researchers should ask: is there a real need, is it really an improvement, and who benefits from it?

Professor Gauderer concluded: “We as health care professionals should not underestimate the potential negative side-effects of our interventions. We must always keep in mind that our primary goal in this setting is simply to facilitate care and, it is hoped, avoid additional problems.”



## The obese patient in the ICU unit

*The choice of obesity as the subject for one of Sunday's symposia was novel for an audience more used to dealing with the under-nourished patient.*

Professor S. Rössner, University Hospital, Stockholm, Sweden, and President of the International Association for the Study of Obesity, set the scene with an alarming overview of the epidemiology of obesity.

In Germany - this week's host country - an estimated 50% of the population are overweight. "Especially worrying is the dramatic increase in the prevalence of obesity in young people," he said.

Professor Rössner blamed a sedentary lifestyle for the majority of this excess adiposity. He calculated that the decreased mobility associated with the advent of the mobile phone and the remote control alone contributed 0.4-0.8kg of adipose tissue per annum for the average city dweller.

Collectively obesity was now responsible for nearly 4% of the total disease burden in the EU, almost half of that caused by tobacco. Obesity related illness consumed 4-8% of GNP.

Professor D. Molnar, Department of Paediatrics, Pecs, Hungary, also pointed to physical inactivity as a major contributor to the growing toll of obesity. One problem facing ICU clinicians as a result of the epidemic of obesity was the increasing likelihood

that the next patient admitted to the ICU would be over, rather than under-nourished.

With such patients it was tempting to "let them starve" said Dr G. Kreymann, University Hospital, Hamburg, Germany, but this impulse had to be resisted. Although it was sometimes believed that no harm would come from starving the grossly overweight patients, this was far from true.

Whereas healthy subjects showed a metabolic adaptation to starvation, in critically ill patients this response was blunted or non-existent - ongoing hypermetabolism was likely to continue with disastrous protein breakdown and death from starvation in two to three weeks - despite profound baseline obesity.

"Starvation is not an adequate approach for obese ICU patients," said Dr Kreymann. "A hypocaloric high protein approach seems to be feasible, although none of the studies so far have been performed on ICU patients," he added. An optimal protein intake target was 1.5g of protein per kg fat-free mass, 50% resting energy as carbohydrate, and essential fatty acids plus standard trace elements and vitamins as indicated.

## How nutritional therapy "has improved outcomes" for patients with cystic fibrosis

*Neonatal screening for cystic fibrosis is associated with a major improvement in outcome for affected individuals largely because it provides the opportunity for optimising nutritional status before the onset of signs or symptoms of disease.*

Professor D. Belli from the Paediatric Gastroenterology Unit at the University of Geneva, Switzerland, told the scientific symposium on 'Nutritional support in cystic fibrosis patients' that recent years had seen a marked increase in the life expectancy for CF patients.

He reviewed the literature to show the long-term benefit of improvements in therapy - nutritional therapy as well as physiotherapy and antibiotic therapy. Not only had this resulted in improved survival, but also in improved lung function and growth rates for patients aged 10-13 years.

In addition, further studies had shown there was now reduced morbidity and *Pseudomonas aeruginosa* colonisation through a decrease in the inflammation that generally precedes infection.

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He reminded the audience of the close links between nutrition, inflammation and lung function as a result of fatty acid metabolism.

In CF there is a fundamental imbalance between antioxidant levels and reactive oxidant species. Dr B. Winklhofer-Roob from the University of Graz, Austria, said this imbalance might result from:

- Fat malabsorption
- Low dietary intake due to anorexia
- Enhanced consumption
- CFTR dysfunction
- Protein calorie malnutrition
- Environmental factors

After reviewing the currently available evidence, she said: "Efficient supplementation by fat soluble antiox-

idants in CF patients is feasible provided the doses are high enough and taken with pancreatic enzymes."

But although vitamin E supplementation had become established as part of the routine therapeutic management for patients with CF, this was not yet the case for supplementation with other antioxidants, due to the lack of evidence from controlled clinical trials. Nevertheless, full correction of the antioxidant-oxidant imbalance in CF is highly recommended.

Dr Winklhofer-Roob concluded by saying that the question of whether the final goal of antioxidant supplementation in CF is to achieve plasma concentrations higher than those in healthy subjects "needs to be addressed in future studies."

## Alcohol as 'medical treatment' - from ancient times to modern day

*The checkered history of alcohol in health and disease was the subject of Sunday's evening lecture by Dr M. Singer, Germany. The lecture, entitled 'Metabolic and nutritional properties of alcoholic drinks' traced the evolution of Man's relationship with wine and beer - from ancient times to modern day.*

At various periods in history alcohol has been hailed as an "essential component of medical treatment" or reviled as a "poison" he told the audience. Beer was often 'prescribed' in the 18th Century for thin emaciated people and its high calorific value was appreciated by heavy workers.

Wine receives several mentions in The Bible, and Hippocrates (400 BC) preached the value of "sensible use in right measure". Until the early 19th Century, the appalling state of communal water supplies - contaminated by dirt, pathogens and faeces - ensured that safe quenching of thirst could only be achieved using fermented products. For many people their chief source of calories, minerals and vitamins was beer.

Up until the middle of the last Century, the medical community continued to sing the praises of alcoholic

beverages. In Germany, in the 1930s, a Professor Kalk regularly prescribed wine and beer for a diverse range of ailments, including badly healing wounds, TB, and for 'carcinoma ventriculi'.

Medicinal use of alcohol then rapidly waned - apart from the use of ethanol in disinfectants. More recently, the therapeutic properties of a tipples have come back into vogue. "Look at many bottles of German beer and you will see labels making cardio-protective claims," said Dr Singer.

The current state of play is a fine balance between a spreading recognition of alcohol's limited health benefits - and a growing realisation that even moderate alcohol consumption (20-40g/day) coupled with a high fat intake (>40% of energy) is the fast track to very unhealthy weight gain.