



Welcome.....

...to the third Nutrimenthe project newsletter.

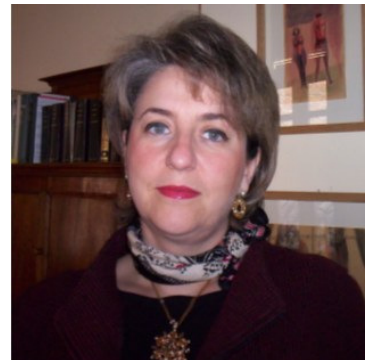
Nutrimenthe is a large scale integrated project funded through the Cooperation Programme's Theme Two; Food, Agriculture and Fisheries, and Biotechnology of the European Union's Seventh Framework Programme. The project has been running since April 2008 and has been set up to address the evidence that early nutrition can affect later mental performance, cognitive development and behaviour in children. This newsletter serves as the gateway into the Nutrimenthe project for partners, the wider nutritional community and the public in general.



Nutrimenthe news

A word from our Coordinator, Prof Cristina Campoy

Nutrimenthe has entered its third year and the project is making good progress. All the Workpackages are going very well, with minimal changes to the timetable of the deliverables. The partners have also become much more integrated. The friendly atmosphere that this has generated will determine a better outcome for the project as a whole. New activities and deliverables are being planned and developed together which will enrich the final content and results.



Nutrimenthe Open Forum - pre announcement

Nutrimenthe is organising an Open Forum that will showcase the project and the results to date. The event is scheduled to take place from 2.00pm to 6.30pm on the 6th October at the Cedar Court Grand Hotel in York, UK. The event will be targeted to an audience of key stakeholders including academia, health professional, policy makers, consumers and industry representatives. If you wish to be kept up to date with this event, please register your interest by writing to [Claire Horton](#). The agenda and registration details will be posted on the Nutrimenthe website.

Folic acid supplementation may reduce mental health problems in children

It is known that supplementation with folate during pregnancy can reduce the occurrence of neural tube defects, but information on the role of folate on subsequent neurodevelopment is scarce. In a paper published this year in the *British Journal of Nutrition*, Sabine Roza and her colleagues from Nutrimente partners Erasmus MC University Medical Centre, Rotterdam, have demonstrated that inadequate folate use during pregnancy may be associated with a higher risk of behavioural problems in children at 18 months. Pregnant women, prenatally enrolled on the Generation R study, were asked about their use of folate supplementation in pregnancy, whether it was taken before conception or sometime later during pregnancy, or not at all. Child behaviour was assessed by the Child Behaviour Checklist for toddlers (CBCL), which is used to obtain standardised reports, by parents, of their child's behaviour. The checklist includes an assessment of whether a child is emotionally reactive, anxious, depressed, has sleep problems, attention problems or exhibits aggressive behaviour. In the current study, information on child behavioural problems was available in 4214 toddlers and it was shown that, even when results were adjusted for confounding variables, inadequate folate use resulted in a higher risk of total behavioural problems. The researchers concluded that failure to use folic acid supplements during early pregnancy may be associated with behavioural and emotional problems at 18 months. Analysis is ongoing to establish the relationship between maternal dietary intake of folate during pregnancy and behavioural problems at age three in the children



Nutrimente researchers are demonstrating how our genetic make-up influences how we process fatty acids.

Long chain-polyunsaturated fatty acids (LC-PUFAs) are known to play a role in several physiological processes and have been shown to be associated with improved visual and cognitive development in children. The level and composition of LC-PUFAs in the human body is highly dependent on dietary intake, however, our genetic make-up also influences how we process fatty acids as Nutrimente researchers are discovering.

Eva Lattka, Thomas Illig, Joachim Heinrich (Helmholtz Zentrum Munich, German Research Centre for Environmental Health) and Professor Berthold Koletzko (Dr von Hauner Children's Hospital, University of Munich) are looking at polymorphisms in genes called *FADS1* and *FADS2*, which

encode key enzymes for the synthesis of LC-PUFAs, delta-5 and delta-6 desaturase. Common single nucleotide polymorphisms (SNPs) in these genes are associated with plasma levels of LC-PUFAs such as arachidonic acid and docosahexaenoic acid (DHA). The researchers have identified one functional relevant polymorphism in *FADS2*, which changes the transcription rate of this gene, offering first insight into the complex regulation mechanisms of *FADS2* gene activity by polymorphisms and its impact on fatty acid levels.

Future work will include testing the association between genotypes and fatty acids levels of both mothers and children taking part in epidemiology and nutritional interventions studies in Nutrimenthe, and the association between genotypes and more complex phenotypes, such as intelligence and cognition.

Nutrition news

The Power of Programming - feedback from recent event

The EARNEST project, the Early Nutrition Academy and the International Society for Developmental Origins of Health and Disease, welcomed 585 delegates from 51 countries to the recent Power of Programming event. Internationally renowned scientists presented their findings relating to the long-term effects of early nutrition on human development and metabolism, to adulthood. The conference, held in Munich between 6th and 8th May 2010, was organised around plenary sessions, symposia, poster sessions and workshops.



Nutrimenthe presented nine posters and one symposium, Programming of Neurodevelopment, was organised in conjunction with the project. This session featured presentations on the role of folate and LC-PUFA intake during pregnancy and later mental development.

Programming of Neurodevelopment - symposium

The symposium began with a presentation by Professor Hania Szajewska from the Medical University of Warsaw, on the role of meta-analysis in the evaluation of the effects of nutrition on mental and motor development in children. Professor Szajewska reported that meta-analysis has received criticism, being likened to “mixing apples with pears” but that its use in

evaluating medical interventions is increasing. She reported that although carrying-out systematic reviews of results published from randomised controlled trials (RCTs), is appropriate, it is not always appropriate to perform a meta-analysis. She concluded that systematic reviews of RCTs (with or without meta-analysis) is the principle research method used to evaluate medical interventions but, an understanding of the strengths and weaknesses in this approach is needed by everyone involved in the decision making regarding the interventions assessed by this approach.

Following on from Professor Szajewska, Charlotta Granstrom (Centre for Foetal Programming, Denmark), reported how maternal intake of folate during pregnancy affected psychomotor development at 18 months. Dr Granstrom demonstrated that the effect of folate on psychomotor development varied depending on the source of the folate. Scores relating to psychomotor development were higher if mothers reported eating folate sources such as onions, tomatoes and green leafy vegetables as opposed to grain, dairy and egg. It was concluded that the effect on psychomotor development may not be an effect of folate itself but perhaps could be attributed to food constituents that co-exist with folate in specific vegetables.

In the same session, Mijna Hadders-Algra, Marin Strom and Cristina Campoy all reported work on the effect of LC-PUFA intake during pregnancy on mental development in childhood.

Currently there is limited data on the long-term effect of pre-natal LC PUFA status in woman and long term neurodevelopment in their children. Mijna Hadders-Algra reported, in a double blind randomised control study, that although supplementation with LC-PUFA did not affect neurological condition there was a beneficial effect on cognitive development at age nine. Marin Strom reported that maternal fish intake (in particular DHA intake) during pregnancy resulted in a moderate beneficial effect on childhood IQ at age 5. Likewise Cristina Campoy reported the levels of DHA in cord blood were associated with a better neurological outcome at 5.5 years of age.

A wealth of research was presented at the conference which brought together scientists, clinicians, representatives of advisory and regulatory bodies and the food industry. In the closing session, Programming Research: where are we and where do we go from here? Professor Bertold

Koletzko concluded that convincing evidence has accumulated to show that both pre and post natal nutrition pre-programme long term health, well being and performance and that there is enormous potential in applying this knowledge for preventive approaches with regard improving the health and well being of the population. However, he stressed that “solid science-based knowledge is required to assess the size of the effect in contemporary European populations, to characterise underlying mechanisms and to understand potential differences in different subgroups of the populations e.g. by genetic predisposition or gender” In addition, Professor Koletzko believes international collaboration should reach beyond the European Union and include collaboration between industry and academia. The outcome of such research should be easy to apply dietary advice for pregnancy, lactation and infancy.

The final programme and abstract booklet plus presentations from the conference are available [here](#):

The final press releases from the conference can be found [here](#):

Professor Cristina Campoy becomes General Secretary of the Early Nutrition Academy

From 5th May 2010, Professor Cristina Campoy became the General Secretary of the [Early Nutrition Academy](#). The ENA chaired by Professor Berthold Koletzko was set up by the EARNEST project as is. Its aims, among other activities, are to foster nutrition research, nutrition education and training in research skills, achieved through arranging regular Postgraduate Schools.

She welcomed the opportunity to be involved in different international activities such as the Postgraduate Courses run in Spain, Workshop Research, and Master Courses which will be held in the years to come. Moreover, the Academy is planning to stimulate new consortia for European Union Projects as well as other research activities and training.

Professor Campoy also looks forward to enriching her own knowledge and development through interaction with more researchers in the field and potential new consortia. Furthermore, the ENA has a Spanish Delegation in the International Excellence Centre for Paediatric Research [EURISTIKOS](#) which Professor Campoy is leading.

Nutrimenthe at the European Science Open Forum

Nutrimenthe was represented at the European Science Open Forum (ESOF) conference that took place in a very warm Turin at the FIAT factory between 2nd and 7th July. Ten projects from the CommNet consortium, including Nutrimenthe, were represented at the conference.

ESOF is Europe's largest meeting place for researchers, stakeholders, students and science journalists, the theme for which is "Passion for Science." This year's event had more than 4000 participants.

CommNet hired a booth in the exhibition hall where ESOF delegates could talk to representatives from the projects. The theme chosen by CommNet was "Passion for Food Science". Information about Nutrimenthe was disseminated via a poster and a recipe card for pasta with salmon and broccoli. The card highlighted the benefits of eating oily fish and the function of other nutrients contained in the ingredients, plus the work of Nutrimenthe.

To attract visitors to the booth, CommNet hired a badge making machine, a tactic which proved to be a huge success as in excess of 200 badges were made during the conference. Delegates could have photographs taken of themselves, or a slogan they had written, made into a badge and were also invited to answer a questionnaire on their views about pasta - is it a quality, safe and healthy food?

CommNet also organised a session How Food Affects Your Life - latest news in food science and communications. The theme was "What is in our food and how does it affect our health and life? Is what we are eating safe? Is it of good quality?" The speakers were Professor Adriana Maggi, Professor Irene Cetin from the University of Milan and Gabriella Morini from the University of Gastronomic Science.

Visit the CommNet website to [read more](#) and view the presentations.



Partner meeting

The next partner meeting will take place from the 6th to 8th October 2010 at the Cedar Court Grand hotel in the historic city of York, UK. Registration details and travel information is available on the Members Area of the website. Scroll down to the Partner Meetings link and click on York 2010.



Event - Early Nutrition Academy Postgraduate School

The ENA is pleased to announce that the next Postgraduate School will take place in Santander (Cantabria, Spain) from the 15th to 18th September 2010. The main topic will be "Early Nutrition and Physical Activity: Determinants for Metabolic Programming."

Sub topics include:

- Early life programming. Mechanisms and gene-environment interactions
- Advances in current research and future challenges on early life programming
- General physical activity and nutrition recommendations for pregnant mothers and infancy to prevent undesirable early programming defects.
- Impact of infant feeding and undernutrition on later outcome and development

The number of delegates is limited to 40. Link to [programme](#)

Fact Sheets

Nutrimenthe is producing Fact Sheets aimed at different stakeholder groups, Parents, Researchers, Health Practitioners, Industry and Policy Makers. They are available to partners to download for use at conferences, presentations and for distribution to participants, especially parents of children, involved in studies. Fact Sheets currently available (Parents and Researchers) can be downloaded [here](#).

Recipe Card - Pasta with Salmon and Broccoli

The recipe card for pasta with salmon and broccoli that was distributed at the ESOF conference is available in English and Italian on the website [here](#).

Nutrimenthe research papers published to date

Abstracts from ten Nutrimenthe papers are available on the [website](#):

Contact details

For any queries relating to this newsletter, the York partner meeting or the website please contact [Claire Horton](#).

For further project related enquiries please [contact us](#).