11th Congress of the International Society for the Study of Fatty Acids and Lipids

Stockholm, Sweden
28 June – 2 July

**One-Day Pre- Congress Programme**

**Saturday 28 June**
Lipid Update Seminar* p. 17
In collaboration with Karolinska Institutet

**One-Day Sponsored Programme**

**Wednesday 2 July**
Satellite Symposia* p. 30
At Artipielag

**Congress Programme**

*Please note that a separate registration is required to attend selected events.*

Early-life nutrition builds a foundation for lifelong health. Our only purpose is to be at the forefront of this unique and critical area of science.

We advance and apply the latest breakthroughs in nutrition science to benefit pediatric populations around the world.

Our researchers, together with other world-leading experts, pioneer new discoveries that improve the health and well-being of children.

Visit Us at Booth #1
Learn about our latest research on lipids, human milk, and the gut-brain axis.
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Abstracts for all presentations and posters are available online at www.issfal.org
Thank You! The support that the ISSFAL 2014 Congress has received from sponsors, exhibitors and other supporters is critically important in keeping the cost of registration at a reasonable level, and also to enable the award of 40 free registrations (worth over $20,000 USD) to New Investigator Award winners, thus encouraging good investigators into, and to remain in, the field of fatty acid research. The meeting organisers and the Society appreciate this support, and urge delegates to take every opportunity to express this appreciation to the representatives of sponsors, exhibitors and other supporters that they come into contact with during the meeting and afterwards.
Welcome to Stockholm, the capital of Sweden and host city for the ISSFAL 2014 Biennial Congress! For the first time in the 20 year history of ISSFAL, the meeting will be in Sweden and, as a matter of fact, this is the first time we have met in any Nordic country. You are among the record number of attendees at this Congress, over 600!

This meeting will provide a unique occasion for the exchange of scientific results in the lipid area. It will facilitate interactions between old and new members and invited guests. The program covers three major topics: Biochemistry and Metabolism of Fatty Acids; Lipids in Health and Disease; and Lipids in Nutrition. These major themes will encompass all aspects of lipids, from cholesterol and its metabolites to metabolites of essential fatty acids and the interactions, and lipidomics and metabolomics, which are important complements to proteomics in understanding human physiology and pathophysiology. Presentations from basic research to translational research to clinical studies will be of interest to a diverse audience of basic researchers, physicians, and nutritionists. Evidence about the impact of lipids in different clinical diseases is increasing rapidly as is our understanding of the role that dietary lipids can play at all ages in preventing diseases related to lifestyle.

As is typical of our biennial ISSFAL meetings, we encourage you to take advantage of the many opportunities to strengthen cooperation among international researchers and clinicians. In addition to the plenary lectures and oral presentations chosen from over 400 abstract submissions, poster presentations and wonderful social occasions will offer opportunities for interaction among all participants.

Stockholm, one of the most beautiful capitals in the world, is built on 14 islands connected by 57 bridges. The beautiful buildings, the greenery, the fresh air and the proximity to the water are distinctive traits of this city. With its 750 year history and rich cultural life, Stockholm offers a wide selection of world-class museums and attractions. As a city built on 14 islands, it offers marvelous views over the water, and if 14 islands aren’t enough, Stockholm offers a wonderful archipelago with 30,000 islands, islet rocks and skerries.

Stockholm has excellent transportation within the city that caters to making the most of everything the city has to offer. Details of the Congress venues and transportation are in the following pages as well as a detailed schedule of events.

Whether you are a long standing member or friend of ISSFAL and the conference, or this is your first time to take part, we assure you that we will work extremely hard to make sure that we meet your key objectives. Please do not hesitate to contact any of the ISSFAL staff or leadership on any matter for which we might be of assistance.

Welcome and enjoy the Congress!

Best regards,

ISSFAL 2014
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We are pleased to announce the fifty New Investigator Award winners, which originate from 18 different countries. NIA winners are awarded a free registration for this Congress, the opportunity to apply for an ISSFAL travel award, and have received an invitation to a special New Investigator ‘Meet the Professor’ breakfast.

Travel awards were made for this Congress as a result of the funding of $12,000 USD of Society funds allocated by the ISSFAL Board of Directors. In addition, ten New Investigator Award winners (selected by a panel of judges prior to the meeting) will be awarded a prize in recognition for their outstanding contribution. Their posters will be on display Sunday to Tuesday. Three of the top New Investigator Award winners will be chosen by a panel of judges (who will visit the poster hall sometime during the scheduled poster sessions) to present their findings.

We offer our congratulations to all NIA winners and look forward to their active participation in future ISSFAL activities.

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<td>Zouhar, Petr</td>
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Prof. Bengt I. Samuelsson
Karolinska Institutet, Solna, Sweden

Sunday 29 June
Progress in eicosanoid research

Dr. Bengt Samuelsson is a Professor of Physiological Chemistry at the Karolinska Institute. Dr. Samuelsson's research led to the discovery of various prostaglandins and related substances. Of particular interest are the thromboxanes which are involved in such common, severe thrombotic diseases as strokes and coronary infarcts. He also discovered the leukotrienes, substances that play a role in inflammation and asthma and other allergic diseases. For his discovery of prostanoids and leukotrienes he was awarded the Nobel Prize in Physiology or Medicine in 1982.

Dr. Samuelsson was born in Halmstad, Sweden in 1934. He obtained his Doctor of Medical Science degree in biochemistry and later, his M.D. degree, from the Karolinska Institute. He spent a year as a research fellow in the Department of Chemistry at Harvard University, Cambridge, Mass., USA. In 1972, Dr. Samuelsson was appointed professor at the Karolinska Institute. In 1973–1983, he was Chairman of the Department of Chemistry; in 1978–1983, Dean of the Medical Faculty and in 1983–1995, President of the Karolinska Institute.

In 1985–1988, he was a member of the Swedish Government Research Advisory Board and in 1987–1990, a member of the Swedish National Commission on Health Policy. Dr. Samuelsson has been a member of the Nobel Assembly and the Nobel Committee for Physiology or Medicine at the Karolinska Institute and in 1993–2005, he was Chairman of the Nobel Foundation in Stockholm.

In 1994–1997 Dr. Samuelsson was a member of the European Science and Technology Assembly (ESTA) and in 1995–1997 a special advisor to the Commissioner for Research and Education in the European Commission.

In addition to the Nobel Prize, Dr. Samuelsson has received a number of worldwide awards and honorary academic degrees. These include the Louisa Gross Horwitz Award, the Gairdner Foundation Award, the Albert Lasker Basic Medical Research Award and the Abraham White Distinguished Science Award. He holds honorary doctoral degrees from University of Chicago, Louisiana State University and University of Illinois, USA; University of Buenos Aires, Argentina; University of Rio de Janeiro, Brazil; Norman Bethune University of Medical Sciences, Changchun, China; Complutense University of Madrid, Spain, University of Milan, Italy and University of Uppsala, Sweden.

Dr. Samuelsson is a honorary member of the American Academy of Arts and Sciences, the American Society of Biological Chemists and the Association of American Physicians. He is a Foreign Associate of the US National Academy of Sciences and a Foreign Member of the Royal Society, London. He is a member of the Royal Swedish Academy of Sciences, the Royal National Academy of Medicine, Spain, the French Academy of Sciences and the Institute of Medicine, USA.
ISSFAL 2014 | 28 JUNE – 2 JULY | STOCKHOLM, SWEDEN

**WALKING**

Some Congress delegates may find a number of ISSFAL 2014 locations to be quite accessible on foot — and scenic panoramas abound along the way. See suggested routes and relative distance between select points on this area map, or feel free to follow your own way. Just wear comfortable shoes, have your camera ready, and enjoy the magnificent views.

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**Opening Reception at Stockholms Stadshus “City Hall”**

**SATURDAY 28 JUNE 19:00–21:00**

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**Dinner Debate at Nalen Restaurang**

**SUNDAY 29 JUNE 19:00–21:00 (BY INVITATION)**

- **Central Station (Trains) & Arlanda Express**
  - T-Bana: T-Centralen
- **Hilton Slussen**
  - T-Bana: Slussen
- **Münchenbryggeriet “The Brewery”**
  - 28 JUNE – 2 JULY
  - 19:00–21:00 (BY INVITATION)

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**New Investigator’s Mixer Aboard The Lady Patricia**

**MONDAY 30 JUNE 19:00–21:00 (BY INVITATION)**

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Some Congress delegates may find a number of ISSFAL 2014 locations to be quite accessible on foot — and scenic panoramas abound along the way. See suggested routes and relative distance between select points on this area map, or feel free to follow your own way. Just wear comfortable shoes, have your camera ready, and enjoy the magnificent views.
TAXI INFORMATION

There are several taxi companies to choose from in Stockholm. Approved taxis with metered fares always bear yellow number plates. Credit cards are readily accepted.

Sweden does not regulate prices; they may vary greatly. It is the customer’s responsibility to check prices beforehand. Check the price on the yellow label (pictured at right), which is usually on the rear door window, before entering the vehicle. The price on the yellow label is based on a 10 km, 15-minute journey. The price indicated on the taximeter is in Swedish kronor (SEK, or kr).

The highest unit price of most taxis is between SEK 290-390. For trips to and from Stockholm Arlanda Airport the major taxi companies have fixed prices of between SEK 450-500. Always ask the driver beforehand.

In addition to the major taxi companies there are several independent firms; caution is advised.

You can easily get hold of a taxi by calling a taxi company, hailing one on the street or by taking one from a rank, e.g. at NK on Hamngatan. There is a manned taxi centre at Central Station that can help you with finding the right service, e.g. if you need child seats in the vehicle.

Several of the big Stockholm taxi companies have a very high proportion of eco-vehicles. A new rota system gives priority to cabs with low carbon emission levels.

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Delegate & Speaker Information

**ISSFAL REGISTRATION DESK / THE BREWERY - MAIN ENTRANCE FOYER**
The ISSFAL Registration Desk is conveniently located just inside the main entrance of the Brewery (see floor plan on p. 12). Be sure to check-in at the Registration Desk to pick up your Congress materials, event tickets and name badge. Desk hours are as follows:

- Saturday, 28 June: 10:00 – 18:00
- Sunday, 29 June: 07:30 – 18:00
- Monday, 30 June: 07:30 – 18:00
- Tuesday, 1 July: 08:00 – 18:30
- Wednesday, 2 July*: 08:00 – 12:30

*Note: On Wednesday, July 2, the ISSFAL Registration Desk will relocate to the HILTON SLUSSEN HOTEL LOBBY to assist those attending the Satellite Symposia at Artipelag.

**EXHIBIT & POSTER HALL / THE BREWERY - MÅLARSALLEN**
See the floor plan on the next page and look for signage on site. The Exhibit and Poster Hall will be open for viewing throughout the day during the following times:

- Sunday, 29 June: 10:00 – 16:15
- Monday, 30 June: 09:15 – 16:30
- Tuesday, 1 July: 09:45 – 16:30

All posters will be displayed throughout the Congress; however, formal presentation of posters will take place during lunch on the day specified in the chart on page 9. Please refer to the Poster section of this program for details on the posters displayed. Poster presenters are asked to refer to the guidelines that were previously distributed for details regarding format, size, content, set-up and tear-down times. Any material that remains after a designated session’s teardown time is subject to removal and disposal by Congress management.

**SCHEDULED EVENTS:**

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**COFFEE BREAKS & LUNCHES**
THE BREWERY - MÅLARSALLEN
ISSFAL 2014 Congress registration includes morning and afternoon coffee breaks and lunch on Sunday, Monday and Tuesday, June 29-July 1.

**WELCOME RECEPTION AT CITY HALL**
SATURDAY, JUNE 28 / 19:00 – 21:00
Hosted by the City of Stockholm and the Stockholm County Council. Hors d’oeuvres and beverages will be provided. It is strictly enforced by the City Hall that ONLY those attendees who registered for the congress PRIOR TO JUNE 13 may be allowed to attend this special event. You will receive your invitation card (not transferrable) when you pick up your Congress materials from the Registration Desk at the Brewery on Saturday, 28 June, between 10:00-18:00. We regret any inconvenience; however, invitations are not transferrable and late or on-site registrations are not allowed.

**GALA DINNER AT VASA MUSEUM**
TUESDAY, JULY 1 / 19:00 – 23:00
Formal dinner in the main hall of the museum alongside the infamous ship.

**INTERNET ACCESS**
- Wi-fi Network: issfai2014
- Password: lipid2014

**SMOKING**
The Brewery is a non-smoking facility. Smoking is only permitted outside the Brewery. This is the same policy for all local restaurants, bars and public buildings.

**BUSINESS CENTRE**
The Business Centre at The Brewery is located by the ISSFAL Registration Desk. Payment via credit card may be required.

**SMOKING**
The Brewery is a non-smoking facility. Smoking is only permitted outside the Brewery. This is the same policy for all local restaurants, bars and public buildings.

**LOST PROPERTY**
- Please report any lost or unattended items immediately to Congress staff. Should you lose anything while at the Congress, do enquire at the ISSFAL Registration Desk where any found property will be held.
Exhibitors

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Poster Presentations

Posters will be presented in three halls at the upper floor of The Brewery — Nobelterassen (N), Mälarsalen (M) and Strindbergsalongen (S). Here you will also find the Exhibit Hall, where Coffee Breaks and Lunch will also be served on Sunday, Monday and Tuesday (breakfast is on your own).

Posters will be available for review during all three full days of the Congress. Since we have a very full oral programme, it is important that all attendees have ample opportunity to see the Posters throughout the Congress.

We have created a schedule whereby you will be able to see presentations formally on one day only during the lunch break, to facilitate discussion with those interested and also make it possible for you to be able to meet other presenters of topical interest to you.

VIEWING POSTERS

Posters have been given a number for easy identification by delegates. This number has three parts:

• The initial letter refers to the “Poster Area” (there are three) where the Poster will be presented (see floor plan below and table at right).
• The next number refers to the designated screen row.
• The second number after the decimal refers to the specific screen within the designated row.

This identification number will be found on the specific location as described above. The number will also appear wherever the corresponding Abstract is listed in the Program and online.
**ATTENTION PRESENTERS:**
You will formally present your Poster during lunch, on the day indicated for your row — which corresponds to the first two numbers of your new Poster Number.

For the complete Poster listings please see p. 41.

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**MÄLARSALEN**
7th Floor
Main Entrance

**STRINDBERGALONGEN**

**MÜNCHEN BRYGGERIET**
EVENT + KONFERENS
AAK

AAK is the first choice for healthy vegetable oil solutions, in the fields of for example, confectionery, dairy, infant nutrition and bakery. AAK has a global supply chain in which food safety and quality are top priorities.

Aker BioMarine

Aker BioMarine is an integrated biotechnology company dedicated to the sustainable harvest of krill and development of krill-derived biotech products. Aker BioMarine’s Superba™ Krill products are provided with 100% traceability from sea to shelf. The uniqueness of Superba™ Krill is that EPA and DHA are provided in phospholipid form.

AlaskOmega

AlaskOmega® is produced from wild-caught Alaska Pollock oil sourced from the Bering Sea that is certified sustainable by the Marine Stewardship Council. AlaskOmega® is available in ultra-high purity ethyl ester and triglyceride concentrates up to 80% EPA and DHA content.

BASF

BASF is a global market leader for omega-3 fatty acids offering a full range from low to medium to high-concentrate omega-3 fatty acids for pharmaceuticals, dietary supplements and clinical nutrition - derived from nature, enhanced by science.

BAXTER

Baxter International Inc. through its subsidiaries, develops, manufactures and markets products that save and sustain the lives of people with hemophilia, immune disorders, infectious diseases, kidney disease, trauma, and other chronic and acute medical conditions.

B. Braun Melsungen AG

B. Braun Melsungen AG is a family owned company with 50,000 employees in 61 countries. Through exchanging knowledge, B. Braun helps to improve the medical environment and to increase the safety of patients and healthcare professionals alike. For more information: please see www.bbraun.com.

Carlson Laboratories

Founded in 1965, Carlson Laboratories began as a family owned and operated business dedicated to providing only the highest quality nutritional supplements. Their award-winning fish oil products are renowned for their purity and great taste.

DSM Nutritional Products

DSM - Bright Science. Brighter Living.™ Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM’s 24,500 employees deliver annual net sales of around 10 billion. The company is listed on NYSE Euronext. More information can be found at www.dsm.com.

Efamol Ltd

Efamol Ltd has for 30 years pioneered research, development, production and clinical testing of essential fatty acids. Current products are positioned for cognitive performance and decline, behaviour and learning skills, pregnancy/lactation and skin health. These products are sold in more than 30 countries worldwide.

Fresenius Kabi

Fresenius Kabi is a global health care company specializing in lifesaving medicines and technologies for infusion, transfusion and clinical nutrition. The products and services help to care for critically and chronically ill. Product portfolio: I.V. generic drugs, infusion therapies, clinical nutrition and related medical devices, products for whole blood and blood components collection and processing and transfusion medicine.

GC Rieber

GC Rieber Oils has been a leading supplier of refined fish oil since 1965. GC Rieber Oils modern refining technologies guarantee a high and consistent quality, with state-of-the-art cleaning technologies that according to each specification can remove or reduce environmental pollutants, cholesterol and oxidation products. The company is fully approved under ISO 9001 with HACCP certification.

GOED

GOED is a proactive and accountable association of the finest manufacturers, marketers, and supporters of EPA and DHA omega-3s, working to educate consumers, government groups, and the healthcare community, while setting high ethical and quality standards for our business sector.
Golden Omega

Golden Omega is a direct to the source solution for companies requiring a deodorized, concentrated omega-3 fish oil. Located right next to the fishery in northern Chile, we offer a full range of products from 50–85 % EPA and DHA.

Lactalis

Lactalis is a multi-national dairy products corporation, owned by the Besnier family and based in Laval, Mayenne, France. It is the largest dairy products group in the world, and is the second largest food products group in France, behind Danone.

Larodan

Larodan develops, manufactures and markets high quality research grade Lipids for the international laboratory market. Our products are used in a number of fields within research, product development and industrial processes. Larodan also provides select other Research Chemicals to the Nordic market, in collaboration with international principals that are as dedicated to their fields as we are. We focus on stable and radioactive isotopes, NMR consumables and biochemicals as well as environmental and forensic standards.

Mead Johnson Pediatric Nutrition Institute

The Mead Johnson Pediatric Nutrition Institute is a global network dedicated to advancing and applying the latest breakthroughs in nutrition science to benefit infants and children worldwide. Our only purpose is to be at the forefront of pediatric nutrition research.

Mylnefield Lipid Analysis

Mylnefield Lipid Analysis is an independent analytical laboratory specialising in the analysis of oils and fats. We are approved by the MHRA for both GMP and GCP analyses and by the FDA for GMP analyses.

Nordic Naturals

Nordic Naturals is a leading manufacturer of omega-3 fish oils and essential fatty acid supplements. With a complete line of omega oils for adults, children, and pets, Nordic Naturals promotes a lifetime of optimal health.

Nutegrity

Nutegrity’s mission is to provide pure, sustainable nutrition products that support healthy living. We provide pure ingredients from sustainable land and sea sources by controlling quality through vertical integration and traceability programs, while working to protect the longevity of product supply.

Nutrogenics/WHC

WHC supplies the most environmentally friendly and unique Omega supplements, selected on the basis of the highest possible quality, eco-management, purity and safety requirements, via Nutrogenics. We guarantee ‘the best of the best’ when it comes to Omega-3 supplements, as demonstrated by their pharmaceutical quality and highest Omega-3 concentration. WHC Omega supplements are available from pharmacies, therapists and via Nutrogenics online.

Omega Protein Corporation

Omega Protein Corporation is a nutritional ingredient company dedicated to delivering healthy products to the animal and human nutrition industries. Omega Protein is the United States’ leading vertically integrated producer of sustainable omega-3 fish oil and specialty fish meal products.

OmegaQuant Analytics

OmegaQuant Analytics partners with academic and corporate researchers to provide a full range of fatty acid analytical services. We also consult in study design and assist in data interpretation.

RIMFROST

Olympic Seafood, the company behind RIMFROST and the management of Juvel, a specialized krill-collecting vessel, focuses exclusively on Antarctic krill ingredients for consumer applications. Our operations aim for low emissions, low energy usage and climate impact. We guarantee 100% traceability.

Smartfish

Smartfish is a Norwegian company developing synergistic omega 3 based pharmaconutrition products. The patented technology is basis for the product range of orally applied liquid emulsions. Smartfish’ emulsions are characterized by its high EPA & DHA content. The EPA & DHA fatty acids enter the cell membrane effectively without carrying oxidative products and with a taste/tolerance providing superior compliance.

Suntory

Suntory Group offers food services and alcoholic beverages to achieve our mission “In Harmony with People and Nature.” As part of Suntory Group, Suntory Wellness is making an innovative business for health care. Institute for Health Care Science is the center for research based on science and tradition.

Unilever

Unilever is one of the world’s leading consumer goods companies with products sold in over 190 countries. Our ambition - Unilever Sustainable Living Plan - is to help more than 1 billion people improve their health and wellbeing by 2020.

Vifor Pharma / Equazen

Equazen offers a range of nutritional supplements with specific combinations of EPA, DHA, and GLA. Equazen products have been tested in clinical trials and demonstrated efficacy in supporting cognitive function of children and adolescents. Vifor Pharma is dedicated to furthering the scientific understanding of PUFAs and their health benefits.
TRANSPORTATION

Opening Reception at Stockholm City Hall
Saturday, 28 June / 19:00–21:00 (INVITATION ONLY; NON-TRANSFERABLE)
Hosted by the City of Stockholm and the Stockholm County Council
Transportation to City Hall is on your own (please refer to the Area Map on page 4). The City Hall is about a 10 minute walk from the Hilton Slussen, 15 minutes from The Brewery, and a short taxi ride from any point in Stockholm Center City. PLEAS BE SURE TO HAVE YOUR OFFICIAL INVITE CARD TO GAIN ACCESS TO THE RECEPTION. The Invite will be given to you at the ISSFAL Registration Desk at the Brewery on Saturday, 28 May.

Dinner Debate at Nalen Restaurang
Sunday, 29 June / 19:00–21:00 (BY INVITATION)
Transportation to the Dinner Debate is on your own. We suggest referring to the map on page 4 for walking details and/or taxi information. The restaurant is about a 20-30 minute walk from the Slussen (Hilton). The closest T-Bana Station is Hötorget (via the Green line T17, T18 or T19 trains).

Gala Dinner at Vasa Museum
Tuesday, 1 July / 19:00–23:00
Transportation to the Gala Dinner is on your own. Please see the map on page 4 for walking details and/or taxi information. The Vasa Museum is a little over 30 minute walk from the Slussen (Hilton). You may also use the excellent public transportation options in Stockholm:

- **TRAM**: The easiest way to get to the museum is by tram. From the city centre (by Sergels Torg Square, on Hamngatan street) take tram number 7 towards Waldemarsudde.
- **BUS**: Bus 44 to bus stop Nordiska museet/Vasamuseet. Bus 69 and 76 to bus stop Djurgårdsbron.
- **METRO (T-BANA)**: Red line to station Karlaplan. From there a 10 minute walk or bus 44 to bus stop Nordiska museet/Vasamuseet.

Satellite Symposia at Artipelag
Wednesday, 2 July / 9:30–17:30
Buses for the morning Satellites will depart at 08:30 from the Hilton Slussen. Buses for the afternoon satellites will depart from the Hilton Slussen at 11:30. Buses returning from Artipelag after the morning Satellites will depart after Lunch, at 13:30. A boat will take all remaining attendees at the end of the day back to Stockholm (boat trip is 90 minutes). If you have signed up for this event, please see your final confirmation email for the Satellites.
The Lipid Update Seminar on Saturday will present a comprehensive overview of the most important clinical aspects related to the studies of dietary fatty acids. All the presenters are leading, internationally recognized researchers and experts in their respective fields, which is the requirement for being invited by the Karolinska Institute.

This one-day seminar will cover the most discussed and developing areas of essential fatty acid research. Prof. Artemis Simopoulos is well-known for introducing the discussion about the importance of the balance between the omega 6 and omega 3 fatty acids for metabolism and health; Prof. Michael Crawford has stressed the importance of DHA for the superiority of the human in the evolution; Prof. Daan Kromhaut is one of the world’s foremost researchers in the field of the importance of the fatty acid balance for cardiovascular health and disease prevention. Prof. Nicolas Bazan is a prominent figure in the importance of DHA and lipid mediators for brain and retinal function; and Prof. Robert Gibson is a leading researcher regarding the importance of DHA during fetal and postnatal period for the development of the infant.

This program is designed to give a good introduction for those who want to learn about the importance of fatty acids in health and disease. It will be valuable both for those already in the field, who want a state-of-the-art overview, but also for those who have a new interest in the field. It will thus turn to both basic researchers and for clinicians not only in the fields covered by the speakers but also for those generally interested in fatty acid metabolism. Fatty acid metabolism is fundamental in all cells in the body and influence most functions and has attained more interest in recent years as lipidomics has been recognized as important as proteomics. It is of importance for all involved in care of patients and especially for those involved in nutrition, like nutritionists, dieticians and nurses. Students are also welcome to learn about these fundamental aspects of the relation between food and health.

Separate registration is required to attend.

**Lipid Update Seminar**

*In collaboration with Karolinska Institutet*

**28 June 2014 | At the München Brewery, Stockholm | 09.45-17.00**

**09.15-09.45** COFFEE SERVED

**09.45-10.00** WELCOME TBD

**10.00-11.00** Professor Artemis Simopoulos (Bethesda, Washington DC, USA)

- The biochemistry of fatty acids – learning to speak the language
- The omega-3 and omega-6 relationship
- What happens to omega-3s when we ingest them – where do they end up, and what roles do they play?

**11.00-12.00** Professor Michael A.A. Crawford (London, UK)

- Fatty acids in evolution, past, present and future
- Theories behind evolution
- DHA’s irreplaceable role throughout neural evolution

**12.00-13.00** LUNCH

**13.00-14.00** Professor Daan Kromhout ( Wageningen, The Netherlands)

- Cardiovascular D...
erates eicosanoids (20 C: prostaglandins, etc.), DHA generates docosanoids (from 22 C: DHA). The essential omega-3 fatty acid DHA is enriched and avidly retained in the central nervous system and discovered that the CA1 hippocampal area from short-post mortem, early-stage AD patients displays a 25-fold loss of NPD1 as well as of the enzyme for the synthesis of this lipid mediator. NPD1 is the first biologically active mediator of the novel docosanoid family. His laboratory found that neuropathins are agonists for the synthesis of this mediator, that 15-lipoxygenase-1 (15-LOX-1) is the enzyme that catalyzes its synthesis, that it targets protein phosphatase 2A (PP2A) to regulate anti-/pro-apoptotic proteins during oxidative stress, and that it regulates protection. They also identified transcription of pro-inflammatory genes as a target of NPD1 and discovered that the CA1 hippocampal area from short-post mortem, early-stage AD patients displays a 25-fold loss of NPD1 as well as of the enzyme for the synthesis of this lipid mediator. A central theme of his laboratory is to understand early responses to disease underlying Alzheimer's, stroke, epilepsy, traumatic brain injury and retinal degenerations. Trained at Columbia University P&S in New York and Harvard Medical School, Bazan was appointed faculty at age 26 at the University of Toronto, Clarke Institute of Psychiatry, where he conducted seminal studies on docosahexaenoic (DHA) and arachidonic acids early brain responses to experimental seizures and ischemia. In the 1970s, he established a research institute in Argentina. In 1981, Bazan joined the faculty of LSUHSC, where he later established and now heads the Neuroscience Center of Excellence.

His laboratory has uncovered molecular principles of the retention/conservation of DHA and contributed to the understanding of cell survival signaling in retinal pigment epithelial (RPE) cells, photoreceptors and brain. He and his colleagues discovered the cell survival mediator neuroprotection D1 (NPD1). Under conditions of uncompensated oxidative stress, NPD1 is made on demand from DHA when disruptors of homeostasis evolve and the initial inflammatory response needs to be modulated to protect neural cell integrity. NPD1 is the first biologically active mediator of the novel docosanoid family. His laboratory found that neuropathins are agonists for the synthesis of this mediator, that 15-lipoxygenase-1 (15-LOX-1) is the enzyme that catalyzes its synthesis, that it targets protein phosphatase 2A (PP2A) to regulate anti-/pro-apoptotic proteins during oxidative stress, and that it regulates protection. They also identified transcription of pro-inflammatory genes as a target of NPD1 and discovered that the CA1 hippocampal area from short-post mortem, early-stage AD patients displays a 25-fold loss of NPD1 as well as of the enzyme for the synthesis of this lipid mediator. A central theme of his laboratory is to understand early responses to oxidative stress and conditions that recapitulate Alzheimer’s and other neurodegenerative diseases aiming to gain insight into the mechanisms that could contribute to preventing, ameliorating and eventually contributing to curing these diseases. A common thread of concepts includes neuroinflammatory signaling, DHA and bioactive lipid mediators. Because the essential omega-3 fatty acid DHA is enriched and avidly retained in the central nervous system, including photoreceptor cells, they postulated and then demonstrated that, as AA generates eicosanoids (20 C: prostaglandins, etc.), DHA generates docosanoids (from 22 C: DHA).

He is a Senate Member (2009-2015) for Deutsches Zentrum für Neurodegenerative, Erkrankungen (DZNE) in der Helmholtz-Gemeinschaft, a nationwide research program on Alzheimer’s disease in Germany, Member of the Biology of the Visual System Study Section, NIH (2010-2015), and Chairman of the Board of Governors for the Association for Research in Vision and Ophthalmology (ARVO) Foundation (2011-2014). Among Dr. Bazan’s awards are the Javits Neuroscience Investigator Award from the National Institute of Neurological Diseases and Stroke (1989); elected to the Royal Academy of Medicine, Spain (1996); elected fellow of the Royal College of Physicians of Ireland, Dublin (1999); President, American Society for Neurochemistry (1999-2001); Doctor Honoris Causa, Universidad de Tucuman, Argentina (1999); Endre A. Balazs Prize, International Society of Eye Research (2000); the Proctor Medal, ARVO (2007); the Alkmeon International Prize (2011); the Chevreul Medal, Paris, France (2011); the Excellence Award, Annual European Association for Vision and Eye Research, Nice, France (2013); and the Mossawkowski Medal, Polish Academy of Sciences, Warsaw, Poland (2013).

His civic and artistic community involvement includes being a patron of the New Orleans Opera, and authoring Una Vida: A Fable of Music and the Mind, produced currently as a feature film; as well as The Dark Madonna: A Fable of Resiliency and Imagination—both novels exploring his lifelong intellectual quest to understand the interface between science, art and music. His goal with both novels, and others in the planning stages is to share this exploration for a better understanding of the deep beauty and complexity of human experience.
Daan Kromhout, MSc, PhD, MPH
Royal Netherlands Academy of Arts and Sciences, Wageningen University, The Netherlands


Artemis P. Simopoulos, M.D.
Center for Genetics, Nutrition and Health, USA

Artemis P. Simopoulos, M.D. is the Founder and President of the Center for Genetics, Nutrition and Health, a nonprofit educational organization in Washington, D.C. since 1990. A graduate of Barnard College, Columbia University, with a major in Chemistry, and a graduate of the Boston University School of Medicine, she is a pediatrician and endocrinologist whose research at the National Institutes of Health (NIH) was on the nutritional aspects of genetic and endocrine disorders; evolutionary aspects of diet and fatty acids; and the importance of a balanced ratio of omega-6/omega-3 fatty acids in health and disease and in growth and development.

Dr. Simopoulos was chair of the Nutrition Coordinating Committee at the National Institutes of Health (NIH) that coordinated all Nutrition Research of the Federal Government in the U.S. in the Office of Science and Technology Policy at the White House. She was consultant to the Office of Consumer Affairs at the White House. Prior to that she was the Executive Secretary of the Division of Medical Sciences at the National Academy of Sciences (NAS) during which time she directed the Asilomar Conference on Recombinant DNA technology. While at the NAS she directed the Committee that developed the report Genetic Screening: Programs, Principles, and Research.

Dr. Simopoulos is a Founding Member of the International Society for the Study of Fatty Acids and Lipids (ISSFAL) in 1991, Secretary/Treasurer of ISSFAL from 1991 to 1998, and a member of the Editorial Board of the ISSFAL Newsletter from 1994 to 2000. She is the Founder of the International Society of Nutrigenetics/Nutrigenomics (ISNN) and was Past President of ISNN from 2005-2009. She is the author of The Omega Diet (HarperCollins, 1999) and has edited over 50 books and journal supplements, in addition to publishing over 350 scientific papers. She was the editor of the Karger series World Review of Nutrition and Dietetics from 1989-2011.
The Gateway to the Source.

ULTRA REFINED OMEGA-3 CONCENTRATES
UP TO 85% EPA & DHA FROM CHILE,
PRODUCED WITH PATENTED TECHNOLOGY

GOLDEN OMEGA

www.goldenomega.cl
### Detailed Programme

#### Sunday 29 June

**Opening Ceremony**

- **Nobel Laureate Lecture**
  - *Prof. Bengt Samuelsson*
  - Progress in eicosanoid research

**Break / Posters & Exhibits**

1. Lipid mediators, the new generation
2. DHA in brain function – from molecule to physiology
3. Maternal and infant nutrition, Part I

**Lunch / Posters & Exhibits**

**Plenary 1**

- *Prof. Georg Kunos, MD*
  - Endocannabinoids in the regulation of energy homeostasis in health and disease

**Break / Posters & Exhibits**

**Plenary 2**

- *Prof. Guenther Daum, PhD*
  - Lipids and mitochondrial function

**Break / Posters & Exhibits**

1. Desaturases and elongases
2. Fatty acids in host defence
3. Fatty acids and aging
4. Maternal and infant nutrition, Part II

**Lunch / Posters & Exhibits**

**Plenary 3**

- *Prof. Erich Gulbins, MD*
  - Ceramides, new actors in cell signaling

**Break / Posters & Exhibits**

**Workshop 1**

- Conducting omega-3 clinical trials

**Workshop 2**

- Dairy fat in infant nutrition

**Special Event**

**Plenary 5**

- *Dr. Prof. Michail Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**

#### Monday 30 June

**Plenary 4**

- *Prof. Chris Ramsden, MD*
  - Dietary modulation of nociceptive mediators and physical pain

**Break / Posters & Exhibits**

**Workshop 3**

- Lipid oxidation

**Workshop 4**

- Maternal and infant nutrition, Part II

**Plenary 6**

- *Prof. Andrew J. Sinclair*
  - The role of oxysterols and lipids for brain function

**Break / Posters & Exhibits**

**Workshop 5**

- Fatty acids and aging

**Workshop 6**

- Fatty acids and cancer

**Special Event**

**Plenary 7**

- *Dr. Prof. Michael Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**

#### Tuesday 1 July

**Breakfast / Meet the Professors**

**Early Career Award Lecture**

- *Dr. Alexander Bartelt*
  - Brown Fat in the Center of Metabolic Health

**Break / Posters & Exhibits**

**Plenary 8**

- *Prof. Guenther Daum, PhD*
  - Lipids and mitochondrial function

**Break / Posters & Exhibits**

**Workshop 7**

- Lipid metabolism

**Workshop 8**

- Maternal and infant nutrition, Part III

**Plenary 9**

- *Prof. Bengt Samuelsson*
  - Endocannabinoids in the regulation of energy homeostasis in health and disease

**Break / Posters & Exhibits**

**Workshop 9**

- Lipid mediators, the new generation

**Workshop 10**

- DHA in brain function – from molecule to physiology

**Plenary 10**

- *Prof. Georg Kunos, MD*
  - Endocannabinoids in the regulation of energy homeostasis in health and disease

**Break / Posters & Exhibits**

**Workshop 11**

- Maternal and infant nutrition, Part I

**Workshop 12**

- Desaturases and elongases

**Plenary 11**

- *Prof. Erich Gulbins, MD*
  - Ceramides, new actors in cell signaling

**Break / Posters & Exhibits**

**Workshop 13**

- Lipid oxidation

**Workshop 14**

- Maternal and infant nutrition, Part II

**Plenary 12**

- *Prof. Andrew J. Sinclair*
  - The role of oxysterols and lipids for brain function

**Break / Posters & Exhibits**

**Workshop 15**

- Fatty acids and aging

**Workshop 16**

- Fatty acids and cancer

**Special Event**

**Plenary 13**

- *Prof. Michail Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**

#### Wednesday 2 July

**Registration Desk Open 08:00–12:30 (Located at Hilton Slussen)**

**Sponsored Satellite Symposia**

1. LCPUFA in maternal, infant and child nutrition
2. Use of lipids in intravenous nutrition: Rationale & reality
3. Research update on DPA: An essential omega-3 fatty acid for health
4. Effects of a Specific EPA/DHA/GLA Combination on ADHD and Cognition

**Lunch**

**Special Event**

**Plenary 14**

- *Prof. Bengt Samuelsson*
  - Endocannabinoids in the regulation of energy homeostasis in health and disease

**Break / Posters & Exhibits**

**Workshop 17**

- Lipid mediators, the new generation

**Workshop 18**

- DHA in brain function – from molecule to physiology

**Plenary 15**

- *Prof. Erich Gulbins, MD*
  - Ceramides, new actors in cell signaling

**Break / Posters & Exhibits**

**Workshop 19**

- Maternal and infant nutrition, Part I

**Workshop 20**

- Desaturases and elongases

**Plenary 16**

- *Prof. Andrew J. Sinclair*
  - The role of oxysterols and lipids for brain function

**Break / Posters & Exhibits**

**Workshop 21**

- Lipid oxidation

**Workshop 22**

- Maternal and infant nutrition, Part II

**Plenary 17**

- *Prof. Michail Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**

#### Saturday 28 June

**Registration Desk Open 07:30–18:00**

**Lipid Update Seminar**

- In collaboration with Karolinska Institutet

**Breakfast / Meet the Professors**

**Early Career Award Lecture**

- *Dr. Alexander Bartelt*
  - Brown Fat in the Center of Metabolic Health

**Break / Posters & Exhibits**

**Plenary 1**

- *Prof. Georg Kunos, MD*
  - Endocannabinoids in the regulation of energy homeostasis in health and disease

**Break / Posters & Exhibits**

**Lunch / Posters & Exhibits**

**Plenary 2**

- *Prof. Guenther Daum, PhD*
  - Lipids and mitochondrial function

**Break / Posters & Exhibits**

**Lunch / Posters & Exhibits**

**Plenary 3**

- *Prof. Erich Gulbins, MD*
  - Ceramides, new actors in cell signaling

**Break / Posters & Exhibits**

**Lunch / Posters & Exhibits**

**Plenary 4**

- *Prof. Chris Ramsden, MD*
  - Dietary modulation of nociceptive mediators and physical pain

**Break / Posters & Exhibits**

**Lunch / Posters & Exhibits**

**Plenary 5**

- *Prof. Michail Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**

#### Registration Desk Open 07:30–18:00

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- *Prof. Chris Ramsden, MD*
  - Dietary modulation of nociceptive mediators and physical pain

**Break / Posters & Exhibits**

**Lunch / Posters & Exhibits**

**Plenary 5**

- *Prof. Michail Gladyshev*
  - Aquatic ecosystems as the main source of essential lipids for humans

**Closing Ceremony**

**Welcome to South Africa**
All ISSFAL 2014 events will take place at the brewery unless otherwise indicated.

**Saturday 28 June**

10:00 – 18:00. REGISTRATION DESK OPEN / THE BREWERY - MAIN ENTRANCE FOYER

9:15 – 17:00. LIPID UPDATE SEMINAR / THE BREWERY - RIDDARSALEN (Separate registration required; see agenda on p. 13)

In collaboration with Karolinska Institutet

14:00 – 17:00. ISSFAL BOARD MEETING / THE BREWERY

19:00 – 21:00. WELCOME RECEPTION IN CITY HALL (Invitation only; non transferrable)

Hosted by the City of Stockholm and the Stockholm County Council

**Sunday 29 June**

07:30 – 18:00. REGISTRATION DESK OPEN / THE BREWERY - MAIN ENTRANCE FOYER

08:30 – 09:00. OPENING CEREMONY / MÄSSHALLEN

09:00 – 10:00. NOBEL LAUREATE LECTURE

Progress in eicosanoid research

Prof. Bengt Samuelsson

10:00 – 10:40. BREAK / POSTERS & EXHIBITS / MÄLARSALEN

10:40 – 12:00. PARALLEL SYMPOSIA (CONCURRENT)

1. Lipid mediators, the new generation / M

Novel Pro-Resolving Mediators in Inflammation: Resolvins, Protectins and Maresins

Charles Serhan, PhD, DSc (hc), Harvard Medical School & BWH, USA

The Good, the Bad and the Ugly: Diversity of airway actions of eicosanoids may be used to improve the treatment of asthma

Sven-Erik Dahlén (Sweden)

Inhibitors against Microsomal Prostaglandin E Synthase-1 - Where do we stand?

Per-Johan Jacobsson (Sweden)

15-Lipoxygenase: a novel drug target for treatment of respiratory inflammatory diseases

Hans-Erik Claesson (Sweden)

2. DHA in brain function – from molecule to physiology / F

Omega-3 fatty acid-derived neurodevelopment and neuroprotective function

Hee-Yong Kim, PhD, National Institutes of Health, USA

Coordinated transcriptional regulation of arachidonic and docosahexaenoic acid cascade enzymes during human brain development and aging

Rapoport S. (USA)

Providing male rats deficient in iron & n-3 fatty acids with iron & alpha-linolenic acid alone affects brain serotonin & cognition differently from combined provision

Baumgartner J. (South Africa)

Docosahexaenoic Acid And Brain Pathology

Michael-Titus A. (UK)

Maintaining brain polyunsaturated fatty acid concentrations: Uptake and rapid metabolism

Bazinet R. (Canada)

Early Career Award 2008

3. Maternal and infant nutrition, Part I / R

Maternal and infant nutrition

Maria Makrides, University of Adelaide, Australia

LCPUFA supplementation in infancy improves response inhibition in childhood

Gustafson K. (USA)

Four Year Follow-up of Children Born to Women in a Randomized Controlled Trial of DHA Supplementation during Pregnancy

Gould J. (Australia)

FADS SNPs Are Associated with Behavioral Outcomes in Children in a Gender-Specific Way

Lauritzen L. (Denmark)

Maternal but not fetal FADS gene variants modify the association between maternal DHA intake in pregnancy and birth weight

Thijs C. (Netherlands)

KEY TO SESSION ROOMS

M Mässhallen

R Riddarsalen

F Fogelströmmet

G Galleriet
SUNDAY, 29 JUNE (continued)

12:00 – 13:30 …… LUNCH / POSTERS & EXHIBITS / MÅLARSALEN

13:30 – 14:15 …… PLENARY 1 Endocannabinoids in the regulation of energy homeostasis in health and disease
Prof. Georg Kunos, MD, National Institutes of Health, USA

Obesity and its metabolic complications are associated with increased activity of the endocannabinoid/CB1 receptor (CB1R) system, as indicated by the beneficial effects of CB1R antagonists. However, neuropsychiatric side effects halted the therapeutic development of this class of compounds. As these side effects are due to blockade of CB1R in the CNS, whereas blockade of CB1R in peripheral tissues contribute to metabolic improvements, limiting the brain penetration of CB1R antagonists may be a way out of this conundrum. We have tested a novel, peripherally restricted CB1R inverse agonist, JDS037, in mice with diet-induced obesity/insulin resistance (DIO mice). Chronic treatment of DIO mice with JDS037 or its brain-penetrant parent compound SLV319 was equipotent in reducing food intake and adiposity and reversing hepatic steatosis and insulin resistance. The JDS037-induced appetite and weight reduction, but not the improvements in steatosis or glycemic control, are due to resensitizing DIO mice to endogenous leptin. This is secondary to the rapid reversal of hyperleptinemia via inhibition of leptin production in adipocytes and facilitation of leptin clearance by the kidney. We next tested the effects of JDS037 in a rat model of overt T2DM. Young ZDF rats have compensated insulin resistance, which progresses to uncompensated hyperglycemia due to beta-cell failure. Beta-cell failure in ZDF rats is associated with CB1R-activation of the Nlrp3-ASC inflammasome in MI macrophages infiltrating pancreatic islets. These effects are replicated in vitro by incubating human or rodent macrophages but not macrophages from CB1R-/- or Nlrp3-/- mice with the endocannabinoid anandamide (AEA). Peripheral CB1R blockade, in vivo depletion of macrophages or macrophage-specific knockdown of CB1R prevents these changes, and restores normoglycemia and glucose-induced insulin secretion. We conclude that diet-induced obesity peripheral CB1R blockade not only improves cardiometabolic risk, but also has antiobesity effects by reversing leptin resistance. Peripheral CB1R blockade also has weight-independent beneficial effects in overt T2DM by preventing beta-cell loss due CB1R-mediated inflammasome activation in macrophages that infiltrate the pancreatic islets. These findings highlight the therapeutic potential of peripheral CB1R blockade in both the metabolic syndrome and in overt T2DM.

Supported by intramural NIH funds.

14:15 – 15:30 …… PARALLEL SYMPOSIA (CONCURRENT)

4. Lipidomics – an expanding field / C

Lipidomics – an expanding field. The example of fluxolipidomics
Michel Lagarde, PhD, DSc, INSA/INSERM, France

Targeted lipidomics using a Novel Integrated Microfluidics-Mass Spectrometry Technology
Astarita J. (USA)

Lipidomics analysis during vertebrate embryonic development
Gibert Y. (Australia)

5. Fatty acids in psychiatry / M

Dietary patterns of pregnancy and childhood and risk of early onset addictions in the ALSPAC cohort
Cpt. Joseph Hibbeln, MD, National Institutes of Health, USA

Omega-3 fatty acids in the prevention of interferon-alpha-induced depression: a randomized placebo-controlled trial
Su K. (Taiwan)

Baseline omega-3 index correlates with aggressive and attention deficit behaviours in adult prisoners
Meyer B. (Australia)

6. Lipid membrane composition / R

Milk membrane lipid composition
Christelle Lopez, INRA, France

Alternative transcripts in the human milk fat globule proteinogenic RNA transcriptome and a novel FADS2 transcript
Kothapalli K. (USA)

A diet rich in DHA prevents visual and spatial memory loss in 12 months old mice carrying the human apolipoprotein E epsilon 4 allele
Chouinard-Watkins R. (Canada)

Blood and brain fatty acid contents in aged rats supplemented with n-3 long-chain polysaturated fatty acids
Buaud B. (France)

7. Fatty acids and diabetes / F

Reversal of CLA-induced Non-Alcoholic Fatty Liver Disease (NAFLD) and Insulin Resistance (IR) by DHA in a mouse model
Darshan Kelley, PhD, UC Davis, USA

Pentadecanoic Acid (15:0) is a Biomarker of Dairy Food intake and is inversely associated with incident type 2 diabetes in the IRAS cohort
Santaren I. (Canada)

Regulation of energy homeostasis and glyc- erolipid metabolism in the phospholipid gene deficient mouse ETIO
Bakovic M. (Canada)

Very high rates of smoking, low-HDL cholesterol and renal disease among Indigenous Australian adults with poorly controlled diabetes: Implications for primary care and CV risk – McDermott R. (Australia)

Relationships between fatty acid status and cardiometabolic health in obese individuals with type 2 diabetes.
Murphy K. (Australia)

KEY TO SESSION ROOMS
M Mässhallen  R Riddarsalen  F Fogelströmmet  C Galleriet
### Final Programme (continued)

**16:30 – 16:15** BREAK / POSTERS & EXHIBITS / MÅLARSALEN

**16:15 – 17:00** PARALLEL SYMPOSIA (CONCURRENT)

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<td>Lipid mediators of cutaneous inflammation</td>
<td>Manipulation of lipids in animal-derived foods: Can it contribute to public health nutrition?</td>
<td>Liver X-receptor β~ a multifunctional lipid activated transcription factor</td>
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<td>Jan Nedergaard, University of Stockholm, Sweden</td>
<td>Anna Nicolaou, PhD, University of Manchester, UK</td>
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<td>Induction of oxidative phosphorylation in white adipocytes: A key to lean phenotype</td>
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### 17:30 – 19:00 DAY 1 ADJOURNS

**19:00 – 21:00** DINNER DEBATE / SOCIAL AT NALEN RESTAURANG

**IT IS TIME TO UPDATE SATURATED FAT RECOMMENDATIONS!**

Separate registration required - $100 USD per person

The Dinner Debate is fast becoming a tradition at ISSFAL meetings. Following a good meal in good company, a “hot topic” in the field is debated in a sometimes heated, but always good natured manner by invited speakers and the audience at large.

The 2014 debate Chair will be Connie Diekman, Director of University Nutrition at Washington University in Saint Louis (USA), under whose guidance the motion, “It is Time to Update Saturated Fat Recommendations!” will be proposed by Philippe Legrand, Professor and Chairman of the Laboratory of Biochemistry and Human Nutrition in the Agronomic University of Rennes (Agrocampus) (France), and opposed by Ronald P. Mensink, Professor of Molecular Nutrition at Maastricht University (The Netherlands).

The ISSFAL 2014 ‘Dinner Debate’ is organized and supported by IEM, the International Expert Movement on the Health significance of fat quality in the diet (www.theiem.org). The IEM mission is “to disseminate sound scientific information about food & nutrition, especially fat quality in the diet, amongst professionals and the general public in actionable ways, in order to promote and advance nutritional improvement focusing on the quality of diets.”

International activities of the IEM are held under the auspices of the International Union of Nutritional Sciences (IUNS) and funded by an unrestricted educational grant from Unilever.
Monday 30 June

07:30 - 18:00 …… REGISTRATION DESK OPEN / THE BREWERY MAIN ENTRANCE FOYER

08:30 - 09:15 ……. PLENARY 2

Lipids and mitochondrial function
Prof. Guenther Daum, PhD, Graz University of Technology, Austria

Mitochondria are only partially autonomous organelles. The vast majority of their components, among them proteins and lipids need to be imported from other organelles. However, a small set of proteins and phospholipids, i.e. cardiolipin and phosphatidylethanolamine, are synthesized within mitochondria. In our laboratory the assembly of phospholipids into mitochondrial membranes has been studied in long term projects. As an experimental system for these investigations we employ the yeast Saccharomyces cerevisiae as a model system. Making use of molecular biological, cell biological and biochemical methods we were able to obtain a view of lipid traffic between organelles. Mitochondria play an important role in this process especially through their contribution to the pathway of aminoglycerophospholipid synthesis. The first lipid component of this pathway, phosphatidylserine, is formed in the endoplasmic reticulum; decarboxylation of phosphatidylserine by Ptdsp, the major phosphatidylserine decarboxylase of the yeast, occurs in mitochondria; and further conversion of phosphatidylethanolamine to phosphatidylcholine by methyltransferases is localized to the endoplasmic reticulum. Thus, intense crosstalk of organelles is required for this pathway. Recently, we focussed on the molecular role and properties of the mitochondrial phosphatidylethanolamine decarboxylase Ptdsp. Biogenesis of this enzyme as well as defects in mitochondrial membranes caused by deletion of Ptdsp and depletion of phosphatidylethanolamine were studied. These investigations demonstrated the important role of phosphatidylethanolamine as a mitochondrial lipid and revealed interesting counteracting effects of phosphatidylethanolamine with the mitochondria specific cardiolipin.

Supported by the Austrian Science Fund (FWF)

09:15 - 10:00 ……. BREAK / POSTERS & EXHIBITS / MÅLARSALEN

10:00 - 11:35 …….. PARALLEL SYMPOSIA (CONCURRENT)

12. Desaturases and elongases
Desaturases and elongases
Tom Brenna, PhD, Cornell University, USA

A low omega-6 polyunsaturated fatty acid (n-6 PUFA) diet increases omega-3 (n-3) long chain PUFA status in plasma phospholipids in humans
Wood K. (Australia)

Transgenic mice convert carbohydrates to essential fatty acids: Implications for modern health epidemics
Kang J. (USA)

Dietary supplementation with fish or olive oil induces altered DNA methylation at specific Cpg loci in FADS2 in adult humans with renal disease
Burdge G. (UK)

FADS polymorphisms and fatty acid composition in blood at age 2, 6 and 10 years.
Standl M. (Germany)

Fish oil and krill oil supplementation differentially regulate lipid metabolism in the mouse
Alexson S. (Sweden)

13. Fatty acids in host defence
A role for the group-II secreted phospholipase A2 in the establishment of lung microbiome in patients with cystic fibrosis
Lhousseine Touqui, PhD, Institut Pasteur, France

Eicosapentaenoic and docosahexaenoic acid differentially enhance humoral immunity in murine diet-induced obesity
Shaikh S. (USA)

Dietary supplementation with fish or olive oil induces altered DNA methylation at specific Cpg loci in FADS2 in adult humans with renal disease
Burdge G. (UK)

FADS polymorphisms and fatty acid composition in blood at age 2, 6 and 10 years.
Standl M. (Germany)

Fish oil and krill oil supplementation differentially regulate lipid metabolism in the mouse
Alexson S. (Sweden)

14. Fatty acids and aging
Aging changes omega-3 fatty acid homeostasis; implications and challenges
Stephen Cunnane, PhD, University of Sherbrooke, Canada

Telomere shortening in elderly individuals with mild cognitive impairment may be attenuated with n-3 fatty acid supplementation
Parietta N. (Australia)

Effects of n-3 polyunsaturated fatty acid supplementation on recurrence prevention in patients with late-life depression: a 48-week randomized double-blind placebo-controlled study - Chiu C. (Taiwan)

Resolvins in Alzheimer disease patients supplemented with omega-3 fatty acids
Fiala M. (USA)

Can DHA enriched Omega 3 fatty acids affect APOE4-positive patients cognition better in mild to moderate Alzheimer’s disease? The Omeg AD study
Freund-Levi Y. (Sweden)

Effect of a whole diet intervention and FADS2 genotype on fatty acid status in the elderly
O’Neill C. (UK)

15. Maternal & infant nutrition, Part II
Maternal DHA supplementation during pregnancy & body composition in childhood: Results of the 3 & 5 year follow-up of children born to women in a randomized controlled trial of DHA supplementation during pregnancy - Bev Muhlhauser, Univ. of Adelaide, Australia

Maternal response to DHA supplementation during pregnancy and language performance of mother and child
Shaddy J. (USA)

Gender differences in associations between dietary fatty acids and blood lipids: the PURE study South Africa
Richter M. (South Africa)

Consumption of bioactive molecules from human milk and relationship to intestinal maturity in premature neonates
Armand M. (France)

Effect of maternal DHA supplementation on body composition of 5-year-old children
Vetri Villalan S. (USA)

Nervonic acid in early plasma samples from premature infants correlates with birth size and mental and motor development up to 18 months corrected age
Ntoumane E. (Sweden)
Final Programme (continued)

11:35 – 12:20

ALEXANDER LEAF AWARD LECTURE
Prof. Andrew J. Sinclair, Deakin University, Australia
The Alexander Leaf Distinguished Scientist Award for Lifetime Achievement was established by the Society in 2002, both to honour the work of Dr. Alexander Leaf and his support for ISSFAL, and to create a means to recognise and reward excellence in the areas of research of relevant to ISSFAL core interests.

12:20 – 13:45

LUNCH / POSTERS & EXHIBITS / MÅLARSALEN

13:45 – 14:30

PLENARY 3
Ceramides, new actors in cell signaling
Prof. Erich Gulbins, MD, University of Duisburg-Essen, Germany
Although ceramides belong to the most hydrophobic molecules in a cell and are water insoluble, they are critically involved in many signalling pathways, in particular upon application of stress stimuli. Thus, activation of acid sphingomyelinase, which converts sphingomyelin to ceramide, is triggered by diverse receptors including those for CD95, TNF, IL-1, and PAF, and by cellular stress such as oxidative stress, chemotherapeutic agents or infection with bacterial and viral pathogens. We have introduced the concept that these stimuli trigger fusion of specialized secretory lysosomes with the plasma membrane, resulting in surface exposure of acid sphingomyelinase and generation of ceramide in the anti-cyttoplasmic leaflet of cell membranes. Therein ceramide molecules spontaneously self associate to form small ceramide-enriched membrane domains that fuse to become large ceramide-enriched membrane platforms. These platforms serve to cluster cognate receptors and other signaling molecules to greatly amplify initial signal density, thereby mediating transmembrane effects of receptor activation or stress. Clustering of lipids seems to be mediated by the length and the aminoacid composition of the transmembrane domain. We applied these insights to cystic fibrosis and pulmonary infections with Pseudomonas aeruginosa. We have demonstrated that ceramide accumulates in tracheal and bronchial epithelial cells of cystic fibrosis mice and humans. In contrast, sphingosine is almost absent in these cells of cystic fibrosis mice and patients, while present in control mice and healthy individuals. Sphingosine very efficiently kills P. aeruginosa and prevents infection. Thus, cystic fibrosis mice and patients suffer from two defects of the sphingolipid metabolism, i.e. an increase of ceramide and a decrease of sphingosine that results in the marked sensitivity of cystic fibrosis animals and patients to develop P. aeruginosa infections. These insights may serve to develop novel strategies to prevent and treat pulmonary infections with Pseudomonas aeruginosa.

14:30 – 15:45

PARALLEL SYMPOSIA (CONCURRENT)

16. The role of oxysterols and lipids for brain function / C
Oxysterols and the brain
Ingemar Björkhem, MD, PhD, Karolinska Institutet, Sweden
A novel role for very long chain fatty acids in brain function
Hopiavuori B. (USA)
Full hydrogenation suppresses life-span shortening activity of canola oil in SHRSP
Tatematsu K. (Japan)
Omega-3 fatty acids (Omegaven) protect from mitochondrial dysfunction in a MCAO mouse model of stroke
Eckert G. (Germany)
The influence of a single nucleotide polymorphism in the CYP4F2 gene on eicosanoidogenic and platelet aggregation
Barden A. (Australia)

17. Fatty acids and the eye / F
Fatty acids and the child’s eye
Ann Hellström, Sahlgrenska Academy, Sweden
Dietary omega 3 long chain polyunsaturated fatty acids and metabolic syndrome in the rat retina: consequences on retinal functionality and complications
Thierry M. (France)
Dietary fatty acids and the prevention of Age-related Macular Degeneration: retinal incorporation and beyond
Bretillon L. (France)
DNA sequence variation in lipid-associated signaling pathway constituents, drug targets, and age-related macular degeneration
SanGiovanni J. (USA) Early Career Award 2010
Molecular Principles for Retinal Pigment Epithelial Cell/Photoreceptor Survival Targeting the NALP3 Inflammasome by Lipid Modulators
Bazan N. (USA)
N-3 polyunsaturated FA reduce metabolic mediators associated to obesity: A Fat-1 transgenic mouse and Caco-2/TC7 cell study
Budin C. (France)

18. Fatty acid metabolism in obesity / M
Fatty acid metabolism in obesity
Antonio Vidal-Puig, University of Cambridge, UK
Association between metabolic syndrome and erythrocyte fatty acid profile in Mexican adolescents: a trans fatty acid approach
Maldonado-Hernández J. (Mexico)
Benefits of purified long chain omega-3 fatty acids in non-alcoholic fatty liver disease (NAFLD): Results from the WELCOME study
Calder P. (UK)
Impact of long chain n-3 PUFA and flavonoids on non-alcoholic fatty liver disease
Minihane A. (UK)

19. Neuroscience / R
Transfer of Omega-3 FA across the blood-brain barrier after dietary supplementation with a docosahexaenoic acid (DHA)-rich Omega-3 FA preparation in patients with Alzheimer’s disease: The OmegAd study – Jan Palmblad, Karolinska Institutet, Sweden
The role of endocannabinoid signalling in the divergent effects of EPA & DHA in neural stem cell fate
Dyall S. (UK)
Fatty acids and sleep in UK children: Subjective and pilot objective sleep results from the DOLAB study – A randomized controlled trial
Richardson A. (UK)
AT-RvD1 modulates synaptic plasticity and prevents neuroinflammation in a mouse model of surgery-induced cognitive decline.
Terrando N. (Sweden)

15:45 – 16:30

BREAK / POSTERS & EXHIBITS / MÅLARSALEN
### DSM Science & Technology Award 2014 – Europe

**The DSM Science & Technology Award seeks to recognize and reward outstanding young researchers (PhD students and those who have recently obtained their PhD) for innovative research that has clear application potential.**

This year the chosen field is “Polyunsaturated fatty acid (PUFA) nutrition and related topics.” From the total number of nominations received from all over the world, four candidates have been selected for the final judging round. These four candidates are invited to present their research in a short lecture during a special DSM–ISSFAL Symposium to be held at the 11th Congress of the International Society for the Study of Fatty Acids and Lipids in Stockholm, Sweden on June 30, 2014 (see programme at right). A judging committee of leading scientists will select the winner.

The award will be presented during the plenary session of the ISSFAL 2014 congress on July 1, 2014, by Dr. Marcel Wubbolts, Chief Technology Officer of DSM

The winner will receive a cash prize of EUR 5,000 and each of the three runners-up will receive a cash prize of EUR 1,000. Travel expenses will also be paid for the four winners.

For further information on the award, please visit: [www.dsm.com/awards](http://www.dsm.com/awards)

### DSM Science & Technology Award 2014 – Europe

**DSM–ISSFAL Symposium Programme**

**Outstanding PhD thesis work in PUFA Nutrition**

**June 30, 2014 / 16.30 – 18.20**

<table>
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<th>Time</th>
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<tr>
<td>16.30 – 16.40</td>
<td>Welcome and introduction by Dr. Marcel Wubbolts, Chief Technology Officer, DSM</td>
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<tr>
<td>16.40 – 17.05</td>
<td>A novel role for very long chain fatty acids in brain function</td>
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<td>Blake Hopiavuori, University of Oklahoma, US; Health Sciences Center, Neuroscience</td>
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<td>PhD Supervisor: Prof. Robert Eugene Anderson MD, PhD</td>
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<td>17.05 – 17.30</td>
<td>Omega-3 fatty acids exert protective actions in obesity-related metabolic complications</td>
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<td>Christina López Vicario, Hospital Clinic/University of Barcelona, Spain; Department of Biochemistry and Molecular Genetics</td>
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<td>PhD Supervisor: Joan Clária, PhD</td>
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<td>17.30 – 17.55</td>
<td>Brain uptake and metabolism of eicosapentaenoic acid in rodents</td>
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<td>Chuck T. Chen, University of Toronto, Canada; Department of Nutritional Sciences, Faculty of Medicine</td>
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<td>PhD Supervisor: Associate Prof. Richard P. Bazinet, PhD</td>
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<td>17.55 – 18.20</td>
<td>Polysaturated Ganglioside Catabolism is Elevated in IBD: Importance of Dietary Ganglioside Intake</td>
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<td>John Miklavcic, University of Alberta, Canada; Agricultural, Life and Environmental sciences</td>
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<td>PhD Supervisor: Prof. Dr. M. Tom Clandinin</td>
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The winner of the DSM Science & Technology Award 2014 – Europe, will be announced on Tuesday, July 1, by Dr. Marcel Wubbolts. We look forward to welcoming you!
**Tuesday 1 July**

08:00 – 18:30 …… **REGISTRATION DESK OPEN / THE BREWERY MAIN ENTRANCE FOYER**

08:00 – 09:00 …… **BREAKFAST / Meet the Professors**

09:00 – 09:45 …… **EARLY CAREER AWARD LECTURE**

**Brown Fat in the Center of Metabolic Health**
Dr. Alexander Bartelt, Harvard School of Public Health, USA

Whereas white adipose tissue (WAT) serves mainly as an energy reservoir and endocrine organ, brown adipose tissue (BAT) is able to dissipate high-caloric nutrients such as carbohydrates and fatty acids to produce heat in order to defend the body against cold. Until 2011, the mechanistic details of fatty acid delivery as fuels for BAT thermogenesis were insufficiently understood. Moreover, the detailed contribution of BAT to systemic metabolism in terms of lipid and glucose homeostasis was not known. In a series of in vivo experiments, combining classical radioactive fatty acid tracer studies with state-of-the-art nanocrystal-based lipoprotein imaging techniques, we were able to demonstrate that BAT in quantitative terms controls plasma triglyceride and glucose metabolism. Activating BAT by overnight cold exposure reduced plasma triglyceride levels drastically, even in postprandial conditions. Furthermore, we identified a novel lipoprotein pathway involving lipolysis by lipoprotein lipase (LPL) and fatty acid uptake by CD36 into brown adipocytes. BAT consumed nearly as much as 50% of a meal in obese and lean animals, ameliorating glucose intolerance and insulin resistance. Beyond dissipating nutrients, BAT activation and also stimulating adipose tissue “browning” has a profound impact on systemic fatty acid fluxes and cholesterol homeostasis. BAT possesses high capacity for de novo lipogenesis, producing significant amounts of monounsaturated fatty acids. We were able to show that BAT-derived fatty acids can be used as markers of HDL turnover along with the discovery that BAT modulates HDL metabolism to facilitate cholesterol excretion. Our studies place BAT in the center of metabolic health, carrying great therapeutic potential for fighting obesity, insulin resistance and atherosclerosis.

09:45 – 10:30 …… **BREAK / POSTERS & EXHIBITS / MÅLARSALEN**

10:30 – 12:05 …… **PARALLEL SYMPOSIA (CONCURRENT)**

|----------------------------------|----------------------------------|----------------------------------|
| **Bile acids and lipid metabolism**
Bo Angelin, MD, PhD, Karolinska Institutet, Sweden |
| **Roles of some endogenous lipid mediators in cellular defense against oxidative stress-induced carcinogenesis**
Young-Joon Surh, PhD, Seoul National University College of Pharmacy, Korea |
| **Mediterranean diet, carotid plaque progression ALA, long chain n-3 and all cause mortality**
Aleix Sala Vila, Hospital Clinic, IDIBAPS- Endocrinology & Nutrition, Spain |
| **Serum triglyceride to HDL ratio and its relationship to insulin resistance among 5-15 year old Sri Lankan children**
Wickramasinghe V. (Sri Lanka) |
| **Docosahexaenoic acid (DHA) mixed with extra virgin olive oil significantly reduces liver oxidative stress in high fat-induced liver steatosis in mice**
Rodrigo V. (Chile) |
| **Role of milk fat globule membrane (MFGM) for modulating atherogenic plasma lipoproteins in humans: a randomized trial**
Rosqvist F. (Sweden) |
| **Association of erythrocyte long-chain omega-3 fatty acids and long-term clinical outcome - The Ludwigshafen risk and cardiovascular health study**
von Schacky C. (Germany) |
| **Lipid peroxidation and its relevance to pheromone production in marine fish under oxidative stress**
Lee J. (Hong Kong) |
| **EPA and DHA in whole-blood are differentially and sex-specifically associated with cardio-metabolic risk markers in 8-11-year-old children**
Damsgaard C. (Denmark) |
| **Apolipoprotein E epsilon 4 genotype and cardiovascular health study**
von Schacky C. (Germany) |
| **Docosahexaenoic fatty acid favorably alters inflammatory pathways and macrophage polarization in the aorta of atherosclerotic mice**
Gladine C. (France) |
| **Lipid peroxidation and an inflammatory response, in neoplastic mammary epithelial cells**
Mahbouli S. (France) |
| **Association of trans fatty acids and clinical long-term outcome - The Ludwigshafen risk and cardiovascular health study**
von Schacky C. (Germany) |
| **Increases in whole body cholesterol synthesis and plasma clearance rates in sitosterolemia patients treated with ezetimibe**
Othman R. (Canada) |
| **Fatty acid and oxylipid predictors of platelet function in adults with diabetes mellitus**
Block R. (USA) |
| **The omega-3 index in heart failure patients: associations with clinical data, comorbidities and prognosis**
von Schacky C. (Germany) |
| **Ethyl ester vs. triglyceride formulations of long chain omega-3 fatty acids: effect on nonfasting triglycerides in moderate hypertriglyceridemia**
Hedengran A. (Denmark) |
| **Lipid profiling following intake of the omega-3 fatty acid DHA identifies the peroxidized metabolites 5E4-neuroprostanes as the best predictors of atherosclerosis prevention**
Gladine C. (France) |

**KEY TO SESSION ROOMS**

 bdsm Å K F G
PLENARY 4

**Dietary modulation of nociceptive mediators and physical pain**
Prof. Chris Ramsden, MD, National Institutes of Health, USA

Many patients with chronic pain continue to experience substantial pain and impaired quality of life despite taking numerous pain-related medications. It is therefore essential to investigate novel mechanisms and alternative approaches to manage pain. As major components of immune, myelin, glial, and neuronal cell membranes, n-3 and n-6 fatty acids can be endogenously converted to several families of bioactive lipid autacoids with pro- or antinociceptive properties (eg, endovanilloids, eicosanoids, endocannabinoids, resolvins).

With a few notable exceptions, mediators derived from n-6 linoleic (LA) and arachidonic (AA) promote nociception, while mediators derived from n-3 eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) promote anti-nociception. Thus, an imbalance of mediators derived from n-3 and n-6 fatty acids is a plausible mechanism underlying initiation and perpetuation of chronic pain disorders including headaches. In a small randomized trial in 67 patients with chronic headaches, we found that increasing dietary n-3 with concurrent reduction in n-6 fatty acids (the H3-L6 diet) produced statistically significant reductions in headache frequency and severity. These clinical improvements were accompanied by increases in pathway precursors for n-3 derived lipid mediators of anti-nociception, and reductions in n-6 derived mediators of nociception in circulation. Therefore, targeted alterations in dietary n-6 and n-3 fatty acids may be able to modulate nociceptive lipid mediators to reduce physical pain. However, current understanding of the molecular pathways and specific lipid autacoids linking diet to physical pain is limited. In this presentation I will review emerging preclinical and clinical evidence and highlight key evidence gaps along the proposed causal chain linking dietary n-3 and n-6 fatty acids to the etiology of chronic pain.
Humans and most other animals need food sources of physiologically important highly unsaturated fatty acids (HUFA), such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), because their own synthesis of these HUFA can cover only around 5% of their physiological requirements. Among all organisms only some microalgae, diatoms, cryptophytes and dinoflagellates can synthesize de novo high amounts of EPA and DHA. HUFA, synthesized by microalgae, are transferred through trophic chains to organisms of higher levels, invertebrates and fish. Thus, aquatic ecosystems play the unique role in the Biosphere as the principal source of EPA and DHA for most animals, including inhabitants of terrestrial ecosystems and humans. HUFA are transferred from aquatic to terrestrial ecosystems through riparian predators, shore drift, emergence of amphibiotic insects and water birds. These essential nutrients are transferred through trophic chains with about twice higher efficiency than bulk carbon. Thereby, HUFA are accumulated, rather than diluted in biomass of organisms of higher trophic levels, e.g., in fish. Humans withdraw from aquatic ecosystems through fish catch ~180 106 kg y-1 of EPA+DHA. However, global average personal daily consumption of EPA+DHA is only about 0.1 g, while healthy personal intake is 0.5 – 1.0 g day-1. Thus, humankind faces with a deficiency of the physiologically important HUFA in diet. Potential ways to increase HUFA consumption are discussed. Aquaculture is based on forage, obtained from wild catch and thereby cannot substitute fishery. Microbial biotechnology – single cell oil production is cost-prohibitive. Thereby, natural fish production of aquatic ecosystems will remain the main sources of the essential PUFA for humans. Aquatic ecosystems differ significantly in HUFA production of microalgae and thereby various fish species, getting PUFA from microalgae through trophic chains, differ in EPA and DHA contents in their biomass in two orders of magnitude. Ways to increase HUFA production in natural aquatic ecosystems are discussed. Data on quantity of various fish products to be consumed for obtaining the recommended appropriate intake of EPA+DHA for humans are given.
Wednesday 2 July — ALL DAY AT ARTIPELAG

09:30 – 12:30 ….. SPONSORED SATELLITE SYMPOSIA – MORNING (CONCURRENT)

1. LCPUFA in Maternal, Infant and Child Nutrition

Organizers: Marius Smuts, North West University, South Africa
Renate de Groot, Open Universiteit Nederland, Netherlands

Reasons for Variability in Status and Outcomes

LCPUFA are nutrients with widely variable intakes both among cultures and to a lesser extent within cultures. The workshop will focus on LCPUFA as a nutrient during earliest development (intrauterine, infancy) and at ages after development (childhood, adolescence, young adulthood). The implications of this variability and other variables for the results of observational and supplementation studies and the kinds of studies needed to make decisions about what is a safe and adequate amount of LCPUFA for individuals and populations will be discussed/debated. The workshop will result in a summary of promising directions for future translational research on LCPUFA that address this and other questions about these nutrients.

Attendees are warmly invited to participate in the below mentioned discussion topics. Of course you can bring in your own points/remarks at any moment during the discussion. But there is also an alternative possibility: in case you want to have something brought in you can send the organizers of this satellite (Marius.Smuts@nwu.ac.za or Renate.deGroot@ou.nl) from now on an email with your statement or 1 or 2 slides. The organizers take care that the speaker of the session or the facilitator will mention the points raised by you.

Detailed Program:

Welcome & Introductions: Speakers will have 10-15 min for presentations to set the scene for discussions that will last for about 45 min per session.

Session 1: LCPUFA supplementation and long-term outcomes
Speaker: Susan Carlson / Facilitator: Renate de Groot

Session 2: LCPUFA and body composition
Speaker: Bev Muhlhauser / Facilitator: Lotte Lauritzen

Session 3: Interactions with nutrients and others factors
Speaker: Jeannine Baumgartner / Facilitator: Marius Smuts

Overall Summary and Closing remarks
Facilitator: Alex Richardson

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2. Use of Lipids in Intravenous Nutrition: Rationale and Reality

Chairs: Prof. Philip Calder, University of Southampton
Konstantin Mayer, University of Giessen, Germany

Lipids have been in clinical use as components of intravenous nutrition for over 50 years. Nevertheless, the field is rife with controversy. Some clinicians question whether lipids should even be used, while others argue that the profile of the most widely used lipids is not optimal and may compromise patient outcome. Over the last 15 years new lipids that include olive oil and/or fish oil have been introduced with some remarkable findings seen when these new lipids replace the more traditional ones. This session will bring together leading global authorities in the area of intravenous lipids to debate and discuss the latest findings in the field, from pre-clinical research to the most recent clinical trials. Lipid functionality and utility in pediatric, adult surgical and critically ill patients will be covered with the aim of developing a clearer picture of the current situation. The Symposium will appeal equally to basic scientists, to clinical researchers and to clinical practitioners and will serve to provide significant advances in the knowledge and understanding of delegates.

Speakers & Topics:

Philip Calder (Southampton, UK): Lipids available for intravenous nutrition — composition, metabolism and functional effects
Mark Puder (Boston, USA): Use of fish oil containing lipids to prevent and to treat liver disease in pediatric patients
Loris Pironi (Bologna, Italy): Which lipids for those on long term home parenteral nutrition?
Lucy Norling (London, UK): Pro-resolving lipid mediators — a strategy to control inflammatory responses
Adina Michael-Titus (London, UK): Omega-3 fatty acids for treating brain and spinal cord injury
Ashley Dennison (Leicester, UK): Use of intravenous lipids in surgical patients with cancer and sepsis
Konstantin Mayer (Giessen, Germany): Preclinical and clinical studies of intravenous lipids in sepsis and tissue injury

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ISSFAL 2014 will host four Sponsored Satellite Symposia on Wednesday, 2 July, following the Congress. This programme will be held at Artipelag, a unique museum facility set among the archipelago just outside Stockholm. A separate registration is required to attend. The fee includes lunch, transportation, and admission to any of the symposia. If you have signed up for this event, please see your final confirmation email for the Satellites. The ISSFAL Registration Desk will be located at the HILTON SLUSSEN HOTEL LOBBY on Wednesday to assist those attending the symposia.

TRANSPORTATION: Buses for the morning Satellites will depart at 08:30 from the Hilton Slussen. Buses for the afternoon satellites will depart from the Hilton Slussen at 11:30. Buses returning from Artipelag after the morning Satellites will depart after lunch, at 13:30. A boat will take all remaining attendees at the end of the day back to Stockholm (boat trip is 90 minutes).
3. Research Update on DPA: An Essential Omega-3 Fatty Acid for Health

Chairs: Edward Dennis, University of California, USA
Andrew Sinclair, Deakin University, Australia

It is well established that Omega-3s are important in neural development and function, and in preventing various health conditions with inflammatory or immune components. Most health benefitting studies on Omega-3s were performed using fish oil, which are mixtures of various fatty acids, and the positive effects were often attributed to eicosapentaenoic (EPA) and docosahexaenoic acids (DHA). The significance of docosapentaenoic fatty acid (DPA), an elongated version of EPA, is only now starting to be better understood. For example, several large studies have demonstrated that blood levels of DPA are independently and positively correlate with reduced risk of cardiovascular disease to the same or greater extent than EPA and DHA. Additionally, studies on purified DPA in animal and cell cultures showed that DPA has potential to improve various aspects of human health. The Symposium will bring together the leading scientists from universities and industry. Its goal is to increase the understanding of biological effects of this important Omega-3 on lipid metabolism in health and disease.

Speakers & Topics:

Doug Bibus (Lipid Technologies): Blood and tissue levels of DPA: what is nature trying to tell us
Andrew Sinclair (Deakin University): What is known about the biological roles of DPA
Bruce Holub (University of Guelph): Docosapentaenoic acid: a long-chain Omega-3 fatty acid with unique metabolism and potential health effects
Edward A. Dennis (University of California): DPA and other omega-3 fatty acids cause dramatic changes in TLR4 and purinergic eicosanoid signaling
Kaisa Linderborg (University of Turku): Postprandial lipidomics in response to DPA and EPA rich meals
Michael Ballou (Texas Tech): Effects of DPAn3 compared to EPA and DHA on inflammation in various tissues
Samuel Fortin (SCF Pharma): Omega-3 docosapentaenoic monoglyceride for inflammation resolution and cancer treatment
Marina Lynch (Trinity College): DPA exerts neuroprotective effects in age

4. Effects of a Specific EPA/DHA/GLA Combination on ADHD and Cognition

Chair: Philip Calder, University of Southampton, UK

Accumulating evidence from epidemiological, biochemical and interventional studies indicate that dietary intakes of the omega-3 polyunsaturated fatty acids (PUFAs) eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) may influence cognitive development, reading performance, learning and behavior. Different mechanisms have been proposed to explain these effects including increased hippocampal acetylcholine levels, anti-inflammatory effects, or increased neuroplasticity. Nevertheless it has to be emphasized how little is still known about the effects of various PUFAs and their interactions with each other in the context of brain health and functioning.

Given the plethora of omega-3 products with different mixtures now available, the issue of the optimal dosage, PUFA ratio and bioavailability of the different PUFAs is often questioned by the health care professionals and generate confusion for the consumer. The aim of this symposium is to be updated by experts about the current clinical evidence in the field of cognition and ADHD in children, and particularly about the effects of a specific EPA/DHA/GLA combination on ADHD and cognition.

Speakers & Topics:

Mats Johnson (Sweden): Polyunsaturated fatty acids in ADHD and cognition: does the product composition matter?
Philip Calder (UK): Bioavailability of different forms of fatty acids
Natalie Parella (Australia): Omega-3/6 fatty acids: The scientific experience in ADHD and mainstream children in Australia
Eduardo Barraquen (Mexico): Efficacy and safety of Omega-3/6 fatty acids, methylphenidate, and a combined treatment in children with ADHD

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4. 100 mg coenzyme Q10 as ubiquinol, the ready-to-use antioxidant form

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3. Phospholipids
4. Vitamin D₃

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Plenary Speakers

1. **Endocannabinoids in the regulation of energy homeostasis in health and disease**

   Dr. Georg Kunos received his M.D. degree in 1966 from Semmelweis University in Budapest and his Ph.D. in 1973 from McGill University in Montreal where he worked with Mark Nickerson on adrenergic receptors. In 1974 he joined the faculty in Pharmacology and Medicine at McGill University and then in 1987 joined the NIAAA as Chief of the Laboratory of Physiologic and Pharmacologic Studies. Dr. Kunos moved to the Medical College of Virginia in 1992 to Chair the Department of Pharmacology & Toxicology. In 2000 he returned to NIH as Scientific Director of NIAAA. He is an elected fellow of the High Blood Pressure Research Council of the American Heart Association and a foreign member of the Hungarian Academy of Sciences. He is recipient of the Mechoulam Award of the Intl. Cannabinoid Research Society and the NIH Director's Award. Dr. Kuno’s laboratory is studying the role of endocannabinoids in neuroendocrine, metabolic and cardiovascular regulation.

2. **Lipids and mitochondrial function**

   Günter Daum studied Chemistry, Biochemistry and Biotechnology at the Graz University of Technology, Austria, where he also received his PhD. During his scientific career he spent several years abroad as Post Doc at the Biocenter Basel, Switzerland, in the lab of G. Schatz, and as a visiting researcher at the UC Berkeley, CA, USA, in the lab of R. Schemkman. Back to the Graz University of Technology he became Group Leader of the Cell Biology Group at the Institute of Biochemistry. The main subjects studied in Günter Daum’s laboratory are synthesis and intracellular dynamics of lipids in the yeast with a focus on lipid assembly into organelle membranes and lipid storage. For his scientific work he received the Normann Medal of the Deutsche Gesellschaft für Fettforschung (German Society of Lipid Research) in 2011. As career related activities he has been President of the International Conference on the Bioscience of Lipids (ICBL). Currently, he is Chairman of the Yeast Lipid Conference, Board Member of the Austrian Science Fund (FWF) and Director of the Doctoral School Molecular Biosciences and Biotechnology at the Graz University of Technology.

3. **Ceramides, new actors in cell signaling**

   Dr. Gulbins received his M.D. degree in 1992 at the Institute of Physiology of the University of Heidelberg, Heidelberg, Germany. He habilitated for Physiology in 1996 and Immunology 1999. From 1992-1994 he worked as postdoctoral fellow at the La Jolla Institute for Allergy and Immunology, La Jolla, California, USA. 1994-2000 he worked as Assistant Professor at the Institute of Physiology at the University of Tübingen, Tübingen, Germany, from 2000-2002 as Associate Professor at the Department of Immunology, St. Jude Children’s Research Hospital, Memphis, Tennessee, USA. Since 2002 he is full Professor and Chair of the Institute Molecular Biology, University of Duisburg-Essen, Essen, Germany. Since 2011 Dr. Gulbins is also Adjunct Professor at the Dept. of Surgery, University of Cincinnati, Cincinnati, USA. He is member of the German National Scholarship Foundation since 1986 and Member of the National Academy of Sciences Leopoldina since 2011. Dr. Gulbins studies the biomedicine of sphingolipids with a special focus on the role of sphingolipids in bacterial infections, cystic fibrosis, lung diseases and major depression.

4. **Dietary modulation of nociceptive mediators and physical pain**

   Dr. Christopher Ramsden is a Clinical Investigator in the Laboratory of Membrane Biophysics and Biochemistry at the National Institute on Alcohol Abuse and Alcoholism, NIH. He is a Lieutenant Commander in the US Public Health Service, and an Adjunct Assistant Professor at the University of North Carolina-Chapel Hill. After completing residency training in Physical Medicine and Rehabilitation at Northwestern/Rehabilitation Institute of Chicago, he was a postdoctoral fellow at UNC-Chapel Hill before joining the National Institutes of Health in 2009. Dr. Ramsden’s research is directed toward elucidation of molecular mechanisms linking fatty acids and their bioactive derivatives to physical pain, and to translation of these findings into novel therapeutic interventions that can provide clinically meaningful pain relief. He has been principal investigator on collaborative human trials assessing the clinical and biochemical effects of altering dietary omega-6 and omega-3 fatty acids. He is also involved in animal and in vitro studies evaluating the bioactivities of endogenous lipid mediators.

5. **Aquatic ecosystems as the main source of essential lipids for humans**

   Dr. Michail Gladyshev graduated from Krasnoyarsk State University (now Siberian Federal University, Krasnoyarsk, Russia) in 1981 and got a position of Senior Laboratory Fellow in the Institute of Biophysics (Krasnoyarsk), where at present he is Vice-Director and Head of Laboratory of Experimental Hydroecology. He is also Professor of Siberian Federal University (Chair of Aquatic and Terrestrial Ecosystems). He is member of President of the Central Council of Russian Hydrobiological Society. He is recipient of the SCOPUS Award Russia. His Laboratory of Experimental Hydroecology studied production and transfer of essential biochemcials, including fatty acids, in trophic webs of natural aquatic ecosystems.
Award Winner Lectures

ALEXANDER LEAF AWARD

Prof. Andrew J Sinclair
Deakin University, Australia

Andrew Sinclair is Professor of Nutrition Science, School of Medicine at Deakin University. AWARDS: Honorary Fellow of the Australasian College of Nutritional and Environmental Medicine, 2012; Elected Fellow of the Nutrition Society of Australia, 2003; Elected Fellow of the Australian Institute of Food Science & Technology, 2001; Supelco/Nicholas Pellici AOCS Research Award, 1999. HONORARY POSITIONS: British Journal of Nutrition, Deputy Editor, 2013; British Nutrition Foundation, Editorial Board, 2012; Adjunct Professor, Department of Nutrition and Dietetics, Monash University, 2012; Chair of the Australian Academy of Science, National Nutrition Committee, 2011-2013; ILSI Australasia, (ILSI), 2008-2011; President; Nutrition Society of Australia (NSA), 2008-09 President; American Oil Chemists’ Society, Senior Associate Editor, Lipids, 2006-2009; Editorial Board, Prostaglandins, Leukotrienes & Essential Fatty Acids, 2005 to date; CURRENT RESEARCH INTERESTS: Essential fatty acids in brain development (pre- and postnatal nutrition), the role of omega 3, polyunsaturated fatty acids in brain and retina on neural function; Food Science (composition of food), Nutrition (fatty acid metabolism in man and animals); Functional foods (omega3 PUFA, lycopene, olive oil, polyphenols, stearic acid). Professor Sinclair has more than 260 publications in peer-reviewed journals.

EARLY CAREER AWARD

Dr. Alexander Bartelt
Harvard School of Public Health, USA

Dr. Alexander Bartelt is currently a Postdoctoral Research Fellow at the Department of Genetics and Complex Diseases, Harvard School of Public Health in Boston, MA, USA. His research is dedicated to understanding the molecular basis of lipid and lipoprotein metabolism and related pathologies such as obesity, atherosclerosis and osteoporosis. He received his Diploma in Biochemistry and Molecular Cell Biology from University of Hamburg, Germany in 2007 with honors. During his PhD at University Medical Center Hamburg-Eppendorf he pioneered brown adipose tissue metabolic research with Prof. Joerg Heeren. Dr. Bartelt is also interested in the relationship of lipid and bone metabolism. In his postdoctoral studies he investigates metabolic adaptations of adipose tissue in extreme conditions such as cold or obesity. Dr. Bartelt's contributions to the general understanding of systemic nutrient homeostasis have been recognized by national and international awards, fellowships and honors. His work has been funded by the Schering Foundation, the European Atherosclerosis Society and the German Research Foundation DFG.

Parallel Symposia Keynote Speakers

Bo Angelin, MD, PhD
Karolinska Institutet, Sweden

Bo Angelin is Professor of Clinical Metabolic Research at Karolinska Institutet and Consultant at the Department of Endocrinology, Metabolism & Diabetes (Head 1993-2010) at Karolinska University Hospital, where he has also served as Director of Research. He is studying mechanisms for regulation of lipid and cholesterol metabolism with special emphasis on humans, and how this knowledge can be used for development of new forms of diagnostics and treatments.

Prof. Angelin's major scientific contributions include: Discovery of regulation of hepatic triglyceride synthesis by bile acids and its disturbance in monogenic familial hypertriglyceridemia; Elucidation of how estrogen and growth hormone interact in the regulation of hepatic cholesterol metabolism; The finding that reduced cholesterol elimination explains the normal increase in plasma LDL with age; Demonstration that thyroid hormone exerts distinct effects on hepatic and intestinal cholesterol metabolism and that drugs that combine selectivity for the thyroid hormone receptor beta and specific uptake into bile ducts are effective in reducing plasma cholesterol; Discovery that hormone-sensitive lipase activity is reduced in adipose tissue of patients with familial combined hyperlipidemia; Demonstration that mutations in the COPII-associated Sar 1b cause chylomicron retention disease; Discovery of posttranslational, cholesterol non-dependent regulation of hepatic LDL receptors and its explanation by hormonal regulation of PCSK9; Description of increased LDL catabolism through malignant cells; and Characterization of a different diurnal rhythm in bile acid synthesis in humans compared to rodents and of how fibroblast growth factors 19 and 21 are involved in its regulation.

Prof. Angelin has had many commissions of trust at Karolinska Institutet, the Swedish Foundation for Strategic Research, the Swedish Research Council and the Heart-Lung Foundation. He has a vast experience of international research evaluations, participates in the Nobel Committee work since 1993 (chair, 2003) and is a member of the Royal Academy of Sciences. He has also research co-operations with several drug and biotech companies, and has served as a board member of AstraZeneca PLC.

Ingemar Björkhem, MD, PhD
Karolinska Institutet, Sweden

Ingemar Björkhem received his MD degree at the University of Linköping, Sweden, in 1984 and his PhD degree in Clinical Chemistry in 1998 at the University of Umeå, Sweden. He has been a member of the editorial board of the Scandinavian Journal of Clinical and Laboratory Investigation since 2000 and is a member of the editorial board of the journal Lipids since 2006. He is also a member of the editorial board of Current Opinion in Lipidology. Present positions: Professor Emeritus since 2008, Senior professor since Jan 2012, Division of Clinical Chemistry, Department of Laboratory Medicine, Karolinska Institutet, Karolinska University Hospital Huddinge.


Awards & Honorary Appointments: Adolf Wimduhm prize for “Outstanding contributions in the field of bile acid research”, Freiburg, Germany 1986; Astrup Legat (second prize), Denmark, 1984; Honorary Professor, Institute of Microcirculation, Chinese Academy of Medical Sciences, Beijing, China, 1993; Honorary Professor University of Aizu and University of Taian, China, 2008; Member of the Norwegian Academy of Science, 2000; Doctor medicinae honoris causa, University of Oslo, 2010; The Schroepfer Award, 2006.

Author or co-author of more than 500 published articles (of which about 470 are original contributions). In 2012 my papers had got more than 17,000 citations and the H-index was 67. Emphasis has been put on mechanism of biosynthesis of bile acids, regulatory mechanisms in connection with cholesterol homeostasis in liver and brain, role of oxysterols, atherogenic mechanisms and role of antioxidants. During the last decade I have focussed on cholesterol homeostasis in the brain and the role of this homeostasis in neurodegeneration. Participated as formal tutor in the supervision of 36 students who have defended PhD thesis and 4 students who have defended licentiate thesis, 1970-2010.
to study changing brain fuel metabolism and cognitive function during aging, and to under-
stand how and why omega-3 fatty acid homeostasis changes during aging. He has published
over 280 peer-reviewed research papers and was elected to the French National Academy
of Medicine in 2009. Dr. Cunnane has published five books including two on flaxseed in
human health and two on nutritional and metabolic constraints on human brain evolution —
Survival of the Fattest: The Key to Human Brain Evolution (World Scientific, 2005), and
Human Brain Evolution: Influence of Fresh and Coastal Food Resources (Wiley, 2010).

Tom Brenna, PhD
Cornell University, USA

Tom (J. Thomas) Brenna is Professor of Human Nutrition, of Chemistry & Chemical Biology,
and of Food Science & Technology at Cornell University in Ithaca, New York, USA. He is also
Adjunct Professor in the Dept. of Public Health Sciences at University of Rochester (NY)
School of Medicine and Dentistry. In 2013, he received the annual Robert Herman Award for
Clinical Nutrition from the American Society for Nutrition and was appointed jointly by
President Obama’s Secretary of Health and Human Services Kathleen Sebelius and
Secretary of Agriculture Tom Vilsack to the Dietary Guidelines Advisory Committee advising
on food policy for the 2015 U.S. Dietary Guidelines for Americans.

His interdisciplinary research group focuses on studies of fatty acid nutrition in the
perinatal period, especially polyunsaturated fatty acids (PUFA) and their role in neural
and retinal development. Their studies of the efficacy of highly unsaturated PUFA as
structural components of the central nervous system have helped to define the mecha-
nism by which these fats support optimal visual and neural function. He has developed
tracer methods based on stable isotopes and use them extensively in metabolic studies.
More recently he has been interested in the nutritional role of saturated branched chain
fatty acids (BCCA) and their possible influence on the early development of the fetal and
newborn gastrointestinal tract. His research is supported by numerous private and pub-
lc grants, including the competitive grants from the National Institutes of Health (NIH)
continuously since 1991.

Professor Tom Brenna’s research couples Nutrition and Chemistry in a broadly inter-
disciplinary program. He is a member of graduate fields in Cornell’s four large colleges:
Nutrition (CHE and CALS), Food Science and Technology (CALS); Chemistry and Chemical
Biology (Arts); Geological Sciences (Engineering and CALS), and in a long-standing collabor-
oration with a prominent former member of Cornell’s College of Veterinary Medicine. His
research group has been funded by institutes/centers at the NIH (NIGMS, NEI, NICHD,
NCRR) and has included at least one active R01 continuously since 1992. These grants
have supported fundamental work in the nutrition of polyunsaturated fatty acids, and
development of advanced mass spectrometry instrumentation and techniques.

Most of the work of the Brenna Lab is translational, lying basic research to biomed-
cine and human nutrition. Some studies are designed with particular, topical human
health questions in mind, and these studies have occasionally had immediate implica-
tions. The most prominent examples of this work are animal studies to evaluate the effi-
cacy, safety, and metabolism of food sources of polyunsaturated fatty acids. This work
often employs stable isotope tracer techniques and molecular or isotope ratio mass
spectrometry to probe metabolism. Other projects, particularly those that develop
instrumentation and methods for mass spectrometry techniques, have a longer term
payoff. They are sometimes undertaken for the challenge of making measurements that
have never been possible previously, with an eye toward eventual applications. An exam-
ple of this area is the development of a novel gas phase reaction for derivatization of
polyunsaturated fatty acids for facile determination of double bond structure, which has
found applications associated with safety of edible oils, including detection of trans fatty
acids. More recent research is on nutrition of saturated branched chain fatty acids, a neg-
lected class of dietary fatty acids. Recent work involves development of methods for
more precise and rapid detection of endogenous performance enhancing drugs, particu-
larly testosterone, as well as methods for detecting exogenous drugs. - See more at:
http://www.human.cornell.edu/bio.cfm?netid=jtb4#sthash.519ou7NC.dpuf

Ian Givens
University of Reading, UK

Professor Ian Givens has background training in biochemistry and nutrition and is current-
ly Professor of Food Chain Nutrition and Director of the Food Production and Quality
Research Division in the Faculty of Life Sciences, University of Reading. His research inter-
ests focus on food chain nutrition with emphasis on the relationship between consump-
tion of animal-derived foods, nutrient supply and chronic disease outcome with particular
emphasis on cardiovascular disease and saturated, trans and n-3 fats. Current work focuses
on lipids and proteins in milk and dairy products and their influence on cardiovascular disease.
It also includes the use of animal nutrition to modify the lipid composition of these foods
along with development of valid markers of chronic disease risk associated with consump-
tion of normal and modified foods.

Jan-Åke Gustafsson, M.D., Ph.D.
University of Houston Texas, USA

Jan-Åke Gustafsson is a leading scientist in the field of steroid hormone receptors/nuclear
receptors. Several of his achievements have led to true paradigm shifts in the field and rep-
resent breakthrough discoveries. He was first to show that a nuclear receptor, the glucocor-
ticoid receptor, is composed of three separate structural and functional domains, a ligand
binding domain, a DNA binding domain and a third domain identified by its immunogenic
properties. Furthermore, the Gustafsson laboratory was first to purify a nuclear receptor,
the glucocorticoid receptor, to homogeneity and thereby to show that it represents a sin-
gle molecular species rather than a complex of multiple smaller subunits. At the time, this
was an especially important finding since the literature was muddled with misconcepts
based on impure and/or partially proteolyzed receptor preparations. Also, access to a
homogeneous nuclear receptor made it possible for Gustafsson to demonstrate specific
DNA binding of glucocorticoid receptor to a glucocorticoid sensitive gene, the murine mam-
ymammary tumor virus. This theretofore impossible achievement spurred a new, mechanistic
in nuclear receptor research, since in follow-up studies, Gustafsson et al. could show that
the specific glucocorticoid binding sites also represent glucocorticoid response elements,
able to confer hormone responsiveness onto nearby genes. It is essential to point out that
all of the above seminal discoveries were made prior to the cloning of nuclear receptors.

Furthermore, Gustafsson et al. cloned the first (partial) cDNA of a nuclear receptor, the
glucocorticoid receptor; the unique probes making this possible were the poly- and mono-
clonal antibodies against the glucocorticoid receptor developed by the Gustafsson labora-
tory. Another important milestone was the structure determination of the DNA-binding
domain of the glucocorticoid receptor, the first ever nuclear receptor structure to be deci-
phered. During recent years, Gustafsson has continued to be responsible for paradigm
shifts in the field of nuclear receptor research. It was Gustafsson who first identified phys-
iological ligands for a so-called “orphan receptor”, namely fatty acids for the peroxisomal
proliferator activated receptor (PPAR), thereby integrating fatty acids into molecular
endocrinology. Furthermore, Gustafsson discovered OR1, later renamed LXRXbeta, an oxy-
terol-activated nuclear receptor of paramount significance in the regulation of cholesterol
homeostasis and brain function. Finally, and most importantly, Gustafsson and colleagues
made the completely unexpected discovery of estrogen receptor beta, a second estrogen
receptor, which has turned out to have functions far outside reproductive physiology, and
be a very promising target in pharmaceutical development of novel drugs.
Ann Hellström is Professor in Paediatric Ophthalmology, at the Sahlgrenska Academy at Göteborg University.

Academic career: 1984-1986, Amanuensis, Department of Pathology, Medical Faculty, Göteborg University; 1986, University Medical degree, Medical Faculty, Göteborg University; 1996-1998, Research position, Medical Faculty, Göteborg University; 1997, PhD, Institute of Clinical Neuroscience, Department of Ophthalmology; 1999, Docent, Göteborg University; 1999-2004, Junior research position at the Swedish Medical Research Council (VR); 2004, Professor in Paediatric Ophthalmology


Research Supervisor: 9 PhD students, fulfilled 7 PhD & 1 Med Lic

Five medical students, 10 points research project, Medical Faculty, Göteborg, 1999, 2007 and 2008. Two ophthalmologists (W Wonnenberg & A Seyedi-Honorvar) doing their research project (6 months) during ST, Medical Faculty, Göteborg 2008-10.


Awards: Knut & Alice Wallenbergs stipend for promising female researchers 1997 (200,000 SKR); Marianne Bernadottes pris för framstående barnögonforskning 2006 (50,000 SKR); SOE grant for excellent ophthalmologic research 2009 (50,000 SKR); Pflizers Ophthalmologic stipendium 2011 (300,000 SKR); Athena price (the most prominent prize for clinical research) provided by Dagens Medicin, L, Sveriges Kommuner och Landssting, Sweden Bio, Swedish Medtech and Vetenskapsrådet 2012 (150,000 SKR); THE ROBERT McCANCE Lecture 2012 - ROP pathogenesis, diagnosis & therapies (today's and future), The Neonatal Society, Great Britain.

Jin-ichi Inokuchi

Tohoku Pharmaceutical University, Japan

Jin-ichi Inokuchi received a Ph.D. degree in 1984 from the Department of Biochemistry, Faculty of Pharmaceutical Sciences, Fukuoka University. In 1985 he moved to the Mental Health Research Institute, University of Michigan as a postdoctoral fellow with Fulbright scholarship (the late Prof. Norman Radin), and, in 1992, became the head of the Glycolipid Section, Tokyo Research Institute, SEIKAGAKU CORPORATION. In 1998 he moved to Hokkaido University as an associate professor. In 2006, he became a professor at the Institute of Molecular Biembranes and Glycobiology, Tohoku Pharmaceutical University. His current research is focused on the pathophysiological roles of glycosphinolipids in metabolic syndrome, immune function and hearing function with a specific focus on membrane microdomains (lipid rafts) and on the development of novel diagnosis and therapeutic intervention based on the discovery in his laboratory.

Capt. Joseph Hibbeln, MD

National Institutes of Health, USA

Joseph R. Hibbeln, MD, is Acting Chief of Section of Nutritional Neurosciences, Laboratory of Membrane Biophysics and Biochemistry, National Institute on Alcohol Abuse and Alcoholism at the National Institutes of Health, Bethesda, Maryland, USA.

A psychiatrist and lipid biochemist by training, Dr. Hibbeln is now one of the world’s leading experts on the importance of dietary fats for human brain development and function. His work is focused on translating basic neuroscience on the omega-3 essential fatty acids docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) (found in fish and seafood) into direct clinical applications, and he has published more than 80 peer-reviewed scientific papers to date. His research interests range from severe pathological disorders (he organized a key international conference on this theme at NIH in 1998), and he is frequently sought out to communicate scientific findings in this field through major public media.

His numerous honors include the TL Cleave Award from the McCarrison Society, London, United States Public Health Service (USPHS), Outstanding Service medal, three USPHS Crisis Response Awards, the Gerald Klerman award from the National Association for Research in Schizophrenia and Depression, Independent Investigator and Young Investigator awards from NARSAD and Eagle Scout, ESA. Dr. Hibbeln received a BA with special honours from the University of Chicago in 1983 and an MD from the University of Illinois at Chicago in 1988. He is a board certified physician in psychiatry and serves as a Captain in the USPHS.
Dr. Hee-Yong Kim is Chief of the Laboratory of Molecular Signaling, National Institute on Alcohol Abuse and Alcoholism (NIAAA) of the National Institutes of Health (NIH). Dr. Kim is internationally recognized for her research contributions concerning the mechanistic role of n-3 essential fatty acids, especially docosahexaenoic acid (DHA), in brain development and function. Her laboratory investigates the effects of DHA on neuronal membrane remodeling, membrane-protein interaction, biomediator formation and related signaling processes leading to cell survival and differentiation as well as neuroprotection. To this end, her laboratory develops novel biochemical, cell and molecular biological approaches, and modern mass spectrometric techniques for lipidomic, proteomic and metabolomic analyses. Her findings have provided fundamental new insight into the effects of lipid nutrition on the central nervous system. Although many of her studies are performed using animal models and cultured cells, the results are directly applicable to some of the pressing questions concerning the effects of dietary lipids on human health. She publishes in competitive peer-reviewed biomedical journals and has written many invited chapters and scholarly reviews.
Dr Muhlhausler graduated from her PhD in August 2006. She is a physiologist and molecular biologist who has a long standing interest in obesity and metabolic health, with a particular focus on the role of maternal and infant nutrition in determining the future metabolic health of the child. In her PhD, Dr Muhlhausler demonstrated that prenatal exposure to an increased nutrient supply resulted in increased expression of adipogenic and lipogenic genes in fat cells before birth, which permanently increased their capacity for fat storage (Muhlhausler et al, Endocrinology, 2007a and 2007b). This led Dr Muhlhausler to the role that the balance of lipids in the maternal and early infant diet play in determining the future metabolic health of the child, and a subsequent search for potential nutritional interventions that could be applied during pregnancy or early infancy to optimize the future metabolic health of the child (Muhlhausler et al, Trends Endocrinol Metab, 2009). This search led Dr Muhlhausler to the omega-3 LCPUFA - and in recent years, Dr Muhlhausler’s research has focused on the potential for increased supply of omega-3 LCPUFA in the maternal/infant diet to inhibit excess fat accumulation and improve insulin sensitivity early in life, and therefore reduce an individual’s subsequent risk of obesity and diabetes in adult life.

Dr Muhlhausler has published 12 original research articles in the past 5 years which have investigated the role of the omega-3 LCPUFA in the maternal diet on offspring outcomes in animal models, which have systematically evaluated the (currently relatively limited) literature base which has attempted to address whether maternal/infant n-3 LCPUFA supplementation can reduce obesity risk in the child. Her work has provided novel insights into the role that the balance of lipids in the maternal and early infant diet play in determining long term metabolic health, and has led to invited reviews/commentaries in this area in the past 2 years.

For the past 5 years, Dr Muhlhausler has led a follow-up of the DOMIno randomized controlled trial in Adelaide investigating the hypothesis that maternal omega-3 supplementation in the second half of pregnancy results in reduced BMI z-score and percentage body fat mass in children at 3 and 5 years. This study was awarded competitive funding from the leading funding body for Medical Research in Australia, the National Health and Medical Research Council of Australia, and involved detailed assessments of growth, body composition and metabolic status in over 1500 children at 3 and 5 years of age Data collection for the study was completed in October 2013, with a follow-up rate of >95%. Dr Muhlhausler’s 2014 ISSFAL presentation will be the first presentation of the primary results of this study, which are expected to provide the most robust data to date as to the potential for maternal omega-3 LCPUFA supplementation to improve metabolic health in human children.

As a physiologist and molecular biologist, Dr Muhlhausler has a long-standing interest in understanding the biological mechanisms through which omega-3 fatty acids act to influence development. She has led studies in animal models to investigate the impact of different fatty acid classes (in particular omega-3 and omega-6 PUFA) on the expression of key metabolic genes, and demonstrated the lipogenic effect of the omega-6 PUFA in adults. More recently, Dr Muhlhausler has extended her mechanistic work to human studies, and is currently undertaking epigenetic analyses of DNA samples collected from the DOMIno children at 5 years of age, in order to determine whether maternal omega-3 LCPUFA supplementation is associated with altered DNA methylation of the genome, and whether these changes could explain the phenotypic effects of the intervention.

Jan Nedergaard
University of Stockholm, Sweden

Jan Nedergaard is professor of physiology at The Department of Molecular Biosciences, The Wenner-Gren Institute, Stockholm University. Since 1975, his scientific efforts have concentrated on the understanding of the function and physiological significance of brown adipose tissue. In recent years, he has played a significant role in the establishment of new concepts in brown adipose tissue research: - that brown adipocyte precursors are principally different from white adipocytes in that they display a myogenic gene expression phenotype (2007); - that the absence of brown adipose tissue is sufficient to cause or aggravate obesity (2009); - that existing radiological data implied that brown adipose tissue is present and active in adult humans (2007), - and that the gene expression profile observed in UCP1-expressing cells in white adipose depots is so distinct from that of classical brown adipocytes that these cells/deposits should be considered to be of a different nature (“brite adipocytes”) (2010). Jan Nedergaard was dean of biological sciences at Stockholm University 2002-2008.

Anna Nicolaou, PhD
University of Manchester, UK

Anna Nicolaou is Professor of Biological Chemistry in the Manchester Pharmacy School. Prof Nicolaou received her BSc in Chemistry and PhD in Biological Chemistry from University of Athens and trained as postdoctoral fellow at the School of Pharmacy, University of London. Prof Nicolaou joined the Bradford School of Pharmacy in 1997 and was awarded a personal chair in Biological Chemistry in 2008 before moving to University of Manchester in 2013. Her main research focus has been the molecular mechanism of action of bioactive lipids using mass spectrometry-based lipidomics, with emphasis on the role of fatty acids and their metabolites in cutaneous inflammation, the cardiovascular system, neuroinflammation and ocular health. Her work has been supported by research councils, charities and industry. Prof Nicolaou is co-chair of the Lipidomics division of European Federation for the Science and Technology of Lipids, and associate editor for Prostaglandins Leukotrienes and Essential Fatty Acids, and the European Journal of Lipid Science and Technology.

Masanobu Oshima
Kanazawa University, Japan

Masanobu Oshima is Professor, Genetics Division, and Director of the Cancer Research Institute at Kanazawa University in Kanazawa, Japan. His research interest is a molecular pathogenesis of gastrointestinal tumorigenesis and malignant progression by using unique mouse models. Professor Oshima explains, “We previously investigated the role of COX-2 in intestinal tumorigenesis by construction of genetic models. Recently, we have constructed gastric cancer model. Ga mice, by transgenic activation Wnt signaling and PGE2-associated inflammatory responses. Using Dan mice, we have been studying the role of PGE2 and inflammatory cytokines in gastric tumorigenesis.”
Jan Palmblad, MD, PhD
Karolinska Institutet, Sweden

19 Transfer of omega-3 FA across the blood-brain barrier after dietary supplementation with a docosahexaenoic acid (DHA)-rich omega-3 FA preparation in patients with Alzheimer’s disease: the OmegaAD study

Prof. Jan Palmblad obtained his MD in 1969 and PhD 1977 from the Karolinska Institute (KI), Stockholm, Sweden, and was appointed Associated Professor of Medicine in 1982 and full Professor of Medicine and chairman of the Dept of Södersjukhuset at KI in 1995. In 1998 he was appointed to the chair of Medicine and as Chief of Dept. of Medicine at Huddinge University Hospital, KI, Stockholm; he stepped down from the latter position in Dec 2004. In 1982-1983 he was Visiting Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD, USA.

He is a member of several societies (incl. being an Honorary Emeritus Member of the American Society of Hematology, European Hematology Association, American Federation of Medical Research), has served as a council or board member of The International Immunocompromised Host Society and several national societies, is a member of the Severe Chronic Neutropenia International Registry, and has been on several national and international advisory committees and editorial boards.

His areas of research interest are in essential fatty acids and lipoxygenase products, particularly in relation to phagocyte and endothelial cell function as well as Alzheimer disease, acute and chronic neutropenias, angiogenesis in haematological, particularly myeloproliferative, diseases, and infections and nutritional state in hematological patients. He has also been engaged in research relating stress and sleep deprivation to inflammatory and immunological reactions. PubMed lists 280 of his totally >400 publications. He has been the tutor for 21 PhD students (out of the 23, presenting PhD thesis from the Center for Hematology and Inflammation Research, founded in 1974 by JP).


Aleix Sala-Vila
Hospital Clinic, IDIBAPS- Endocrinology & Nutrition, Spain

22 Mediterranean diet, carotid plaque progression ALA, long chain n-3 and all cause mortality

Aleix Sala-Vila received his BSc in Pharmacy (1999), BSc in Food Science and Technology (2002) and PhD in Biomedical Sciences (2004) from the University of Barcelona. He was a post-doctoral fellow with Professor Philip Calder at the University of Southampton (2005-2007). In January 2008 he joined the team led by Emilio Ros at the Hospital Clinic de Barcelona and pursued clinical studies of the influence of dietary n-3 fatty acids of either marine or vegetable origin on atherosclerosis as assessed by non-invasive imaging techniques. His whole scientific career has focussed on investigating how the intake of foods and nutrients characteristic of the Mediterranean diet (n-3 fatty acids in particular) can help protect from chronic diseases. His main research interests are atherosclerosis development, plaque stability, myocardial salvage after acute myocardial infarction, neurodegeneration and healthy aging. He has been involved in specific projects within the PREDIMED (PREvención con Dieta MEDiterranea) study, for which the group directed the nutritional intervention. These projects deal with the effects of PREDIMED diets on blood pressure as assessed by 24-h ambulatory monitoring (sub-cohort); age-related cognitive decline after intervention for 4 y (sub-cohort); changes in carotid plaque by ultrasound and magnetic resonance imaging after intervention for 2 y (sub-cohort); 5-y incidence of dementia (whole cohort); and consumption of alpha-linolenic acid and mortality (whole cohort). He is also a co-investigator of the randomized controlled trial WAHA (Wauits for Healthy Aging - http://www.clinicaltrials.gov NCT0163484) aimed at studying the effect of a diet enriched with walnuts (15% of energy) for 2 y in comparison with a control diet on age-related cognitive decline and macular degeneration in 700 cognitively healthy older persons.

Charles N. Serhan, PhD, DSc (hc)
Harvard Medical School & BWH, USA

Since 1995, Prof. Serhan is Director of the Center for Experimental Therapeutics and Reperfusion Injury at Brigham and Women’s Hospital in Boston. He is the Simon Gelman Professor of Anesthesia (Biochemistry and Molecular Pharmacology) at Harvard Medical School and Professor of Oral Medicine, Infection and Immunity at HSDM Harvard University. Professor Serhan received his Bachelor of Science Degree in biochemistry from Stony Brook School and Professor of Oral Medicine, Infection and Immunity at HSDM Harvard University. Since 1981-86, he was a visiting scientist at the Karolinska Institutet, Stockholm and post-doctoral fellow with Professor Bent Samuelsson. In 1996, he received an honorary degree from Harvard University. Dr. Serhan was awarded an NIH MERIT Award (2000), the MacArthur Research Service Award in 2003, and the Outstanding Scientist Award in Inflammation Research at BioDefense, 2004. He delivered the 2005 NIH Keshover Lecture and received the LSU Chancellor’s Award in Neuroscience in 2006 and in 2007 the Dart/New York University Biotechnology Outstanding Achievement Award. In 2008, he delivered the Sir John Vane Memorial Lecture and received the 2008 William Harvey Outstanding Scientist Medal. In 2010, he delivered the Kern Lecture “in recognition of outstanding research on lipids” and received the Society for Leukocyte Biology 2010-Bonaziga Award for “excellence in leukocyte research, SLB’s highest honor”. Dr. Serhan was elected Fellow of AAS in 2011, delivered the Lawrence Tabak NIH-Lectureship for excellence in Oral Biology and the 2011 American College of Rheumatology Hench Lecture awarded by the Mayo Clinic Hench Society, and was named Honorary Fellow from Queen Mary University London. He was also NIH/NCI Distinguished Lecturer STARS in Nutrition and Cancer (2012) and the NIH STEPS Lectureship. He received the 2013 Journal of Lipid Research Lectureship Award and Mérieux Research Grants, 2013 Laureate.

He also received the Honorary Degree of Doctor of Science, University College of Dublin, Ireland and the 2013 Oh Dang International Prize from the Korean Pharmaceutical Society “in recognition of an internationally recognized scholar who has had a major impact on pharmaceutical research and related areas of life sciences.”

Charles is a member of several scientific advisory boards including recent appointments (2013) to the Scientific Advisory Board of the Pasteur Institute, France and was appointed to the NIH Board of Scientific Counselors for the intramural research program of NIAAA, Rockville, MD. Author of >460 publications, 4 books and >348 awarded patents.
Young-Joon Surh, PhD
Seoul National University College of Pharmacy, Korea

Roles of some endogenous lipid mediators in cellular defense against oxidative stress and inflammation

Dr. Young-Joon Surh is a Professor of Biochemistry at the College of Pharmacy, Seoul National University, South Korea. He currently serves as Director of Tumor Microenvironment Global Core Research Center Research Center (GCRC), which is supported by the National Research Foundation of Republic of Korea. Prof. Surh graduated from Seoul National University with BS (Pharmacy) and MS (Biochemistry) and earned his PhD degree at the McArdle Laboratory for Cancer Research, University of Wisconsin-Madison, USA. He had postdoctoral training at the Massachusetts Institute of Technology (MIT). In 1992, he was appointed as a tenure-track Assistant Professor at Yale University School of Medicine. Since relocating to Seoul National University in 1996, Prof. Surh has been investigating the molecular mechanisms of cancer prevention with natural products, with special focus on redox modulation of antioxidant and anti-inflammatory signaling molecules as prime targets. Served as a member of the editorial board member of more than 30 international journals, including Carcinogenesis, International Journal of Cancer, Molecular Carcinogenesis, Cancer Letters, Cancer Prevention Research, Mutation Research, Life Sciences, Molecular and Cellular Biochemistry, Free Radical Research, Food and Chemical Toxicology, Biofactors, Genes and Nutrition, Molecular Nutrition and Food Research, etc. He is also editor of the following books: Oxidative Stress, Inflammation and Health (CRC Press), Molecular Targets and Therapeutic Use of Curcumin (Springer-Verlag), and Dietary Modulation of Cell Signaling Pathways (CRC Press). Prof. Surh has published more than 250 papers in peer-reviewed international journals and more than 70 invited editorials, reviews and book chapters. The total number of citations of his publications is more than 10,000 (excluding self-citations). He received numerous awards including Elizabeth C. Miller and James A. Miller Distinguished Scholar Award from Rutgers University (2011), McCormic Science Institute Award from American Society for Nutrition (2009), Merit Award from the International Society of Nutraceuticals and Functional Foods (2010). He published a seminal review article, titled cancer chemoprevention with dietary phytochemicals, in Nature Reviews Cancer which has been highly cited (more than 1,000 times).

Lhoussaine Touqui, PhD
Institut Pasteur, France

A role for the group-II secreted phospholipase A2 in the establishment of lung microbiome in patients with cystic fibrosis

Present position: Research Director, Institut Pasteur and Leader of the team “Roles of TLRs and phospholipases in lung infectious and inflammatory diseases”.

Member of Scientific Instances: Scientific Council of the French Foundation of Cystic Fibrosis, ABCF proteins; Expert for the International Foundation For Science; Expert for the Canadian Cystic Fibrosis Fundation; Expert for Ministère de la Recherche, Mission Scientifique, Technique et Pédagogique; Consultant for the Pharmaceutical Company “Galderma”; Co-founder of an European Network for new strategies to eradicate multi-resistant bacteria; Member of the Committee for Scientific Evaluation (COMESP) in Pasteur Institute


Invitation to scientific meetings as a speaker since 2005: 15th Congress of the Asia Pacific Association for Respiratory Care (Shanghai, October 2005); 1st Mediterranean Clinical Immunology Meeting (Evora, October 2006); 3rd International Conference on Phospholipases and Lipid Mediators (Naples, May 2007); 2nd Mediterranean Clinical Immunology Meeting (Antalya, October 2008); European Cystic Fibrosis Congress (Tavira, April, 2009); European workshop “Molecular and Cellular aspects of Chronic Lung Disease” (Rotterdam, June 2009); 3rd European Workshop on Lipid Mediators (Paris, June 2010); The 35th European Cystic Fibrosis Society Conference (Dublin, June 2012); ECFS conference - New Frontier in Basic Science of Cystic Fibrosis (Malaga, March 2013)

Antonio Vidal-Puig
University of Cambridge, UK

Fatty acid metabolism in obesity

Research Interests — Molecular Mechanisms of Energy Balance: Our program of research explores the molecular mechanisms involved in controlling energy expenditure, fat deposition, and the mechanisms controlling the partition of energy towards oxidation or storage. Specifically we are interested in the following interrelated questions: A. How the expansion of adipose tissue typically associated with obesity relates to the development of the Metabolic Syndrome. More specifically we are exploring whether lipotoxicity and/or changes in adipokines secreted by adipose tissue affect insulin sensitivity in other organs (skeletal muscle, heart, liver, brain, beta cells and macrophages). B. Whether modifications in adipogenesis and remodeling of adipose tissue may be good strategies to ameliorate the metabolic effects associated with obesity. C. The molecular mechanisms that control energy expenditure and brown fat activation. D. Whether modulation of partitioning of nutrients towards fatty acid oxidation in skeletal muscle and away from storage in adipose tissue may prevent the devastating metabolic effects of obesity.

To address these challenges is a daunting task that requires the modulation of highly integrated and complex mechanisms of energy homeostasis designed to prevent negative energy balances. According to this integrated concept of energy homeostasis, my laboratory is using an Integrated Physiology approach that relies greatly upon the generation and detailed in vivo phenotyping of genetically modified organisms. Together with Systems Biology approach integrating transcriptomic and lipidomic analysis, using bioinformatics to identify organ specific lipid metabolic networks relevant for insulin resistance and metabolic disease.

Our research is funded by the Wellcome Trust, MRC, Diabetes UK, British Heart Foundation, EU FP6 HEPADIP, EU FP7 MITIN, EU FP7 Etherpaths and BBSRC.
Poster Sessions
Poster Sessions

Posters listed in the following pages are indexed by location and also organized by the day on which the presenter will present their Poster, alphabetized by last name of the presenter. A floor plan of the Poster Hall is on page 10.

Posters will be presented in three halls at the upper floor of The Brewery – Nobelterassen (N), Mälarsalen (M) and Strindbergsalongen (S). Here you will also find the Exhibit Hall, where Coffee Breaks and Lunch will also be served on Sunday, Monday and Tuesday (please note that breakfast is on your own).

Posters will be available for review during all three full days of the Congress. Since we have a very full oral programme, it is important that all attendees have ample opportunity to see the Posters throughout the Congress. We have created a schedule whereby you will be able to see presentations formally on one day only during the lunch break, to facilitate discussion with those interested and also make it possible for you to be able to meet other presenters of topical interest to you.

VIEWING POSTERS

Posters have been given a number for easy identification by delegates. This number has three parts:

- The initial letter refers to the “Poster Area” (there are three) where the Poster will be presented (see the floor plan on page 10 and the table below).
- The next number refers to the designated screen row.
- The second number after the decimal refers to the specific screen within the designated row.

This identification number will be found on the specific location as described above. The number will also appear wherever the corresponding Abstract is listed in the Program and online.

### POSTER DISPLAY AREAS / PRESENTATION SCHEDULE

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**ATTENTION PRESENTERS:**

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Valger∂ur Edda Benediktsdóttir .......... M4.10
A comprehensive LC/MS/MS method for lipid profiling of murine hepatocytes-derived lipid droplets by reversed phase chromatography online-coupled to Fourier transform mass spectrometry

Anne-Laure Dinel .............................. N7.01
Dietary effects of omega 3 fatty acid response to high dose fish oil intervention

Magdalena Franczyk-Zarow ............... N1.07
Impact of dietary pomegranate seed oil on serum lipid profile and blood morphology parameters in broiler chickens

Karlheinz Grillitsch ............................ M4.12
Characterization of Pichia pastoris Golgi and plasma membrane

Stine Grimmer ................................. N1.08
Cellular effects of bioactive lipids of vegetable origin

Harald S. Hansen .............................. M1.04
The PPARalpha agonist, fenofibrate decreases omega-3 fatty acid response to high dose fish oil intervention

Pieter Giesbertz ............................... S4.04
Acylcarnitine profiling in plasma and tissues in mouse models of type I and type II diabetes

Karlheinz Grillitsch ............................ M4.12
Characterization of Pichia pastoris Golgi and plasma membrane

Stine Grimmer ................................. N1.08
Cellular effects of bioactive lipids of vegetable origin

Harald S. Hansen .............................. M1.04
The PPARalpha agonist, fenofibrate decreases levels of anorectic N-acylethanolamines in the small intestine of mice

Akiko Harauma ................................. S1.01
Stearidonic acid reduces growth of MDA-MB-231 breast cancer cells both in vitro and in vivo

Agneszka Filipiak-Florkiewicz ........... N1.06
Lipid profile of egg yolks from laying hens fed diets supplemented with pomegranate seed oil

Manjula Fischer ............................... S1.07
Effects of n-3 LC-PUFAs EPA and DHA on physical activity, BMI and body weight among eight year old children

Helena Fisk .................................... S10.06
Cannabidiol modifies endocannabinoid signaling in aorta of adult mice

Raphael Chouinard-Watkins ............. S10.06
Human apolipoprotein E epsilon 4 genotype disrupts fatty acids distribution in organs of transgenic mice

Valérie Conway ............................... S10.07
Postprandial omega-3 fatty acids in lipoproteins: Lack of an interaction with apolipoprotein E epsilon 4 genotype

Maria Fernanda Cury-Boaventura ......... S1.06
Effect of DHA-rich fish oil supplementation on plasma lipid metabolites in marathon runners before and after acute exercise

Alberto Dávalos ............................... N7.07
Docosahexaenoic acid modulates the expression of microRNAs involved in lipid metabolism

Anil Dijkstra-Brouwer ....................... N4.01
The current upper limit of 0.5 g% docosahexaenoic acid (DHA) in formulas for term infants is too conservative

Annie-Laure Dinel ............................. N7.01
Impact of lipid quality in perinatal period on inflammation and cognition

Simon C. Dyall ............................... S1.05
Blood DHA levels predict walking performance in older females

Ahlam ElShikkeri ............................. M7.08
Association between fatty acid intake and breast cancer in Sudan: A case-control study

Alexander Fauland ............................ S13.01
Lipid profiling of murine hepatocytes-derived lipid droplets by reversed phase chromatography online-coupled to Fourier transform mass spectrometry

Alexander Fauland ............................ S13.05
A comprehensive LC/MS/MS method for lipid mediator quantification

Moncef Feki .................................. S1.02
Low vitamin d status in athletes living in a sunny country (tunisia)

Moncef Feki .................................. S4.08
Plasma 25-hydroxy vitamin d is dramatically reduced in tunisian pregnant women

Jarlei Fiamoncini ............................ M4.02
Dietary n-3PUFA increase peroxisomal oxidation of fatty acids in mice, generating medium-chain, dicarboxylic acylcarnitines as marker metabolites

Catherine Field .............................. M7.07
Stearidonic acid reduces growth of MDA-MB-231 breast cancer cells both in vitro and in vivo

Vegetarian dietary patterns during pregnancy and breast cancer in Sudan: A case-control study

Ahlam ElShikieri .............................. M7.08
Association between fatty acid intake and breast cancer in Sudan: A case-control study

Karlheinz Grillitsch ............................ M4.12
Characterization of Pichia pastoris Golgi and plasma membrane

Stine Grimmer ................................. N1.08
Cellular effects of bioactive lipids of vegetable origin

Harald S. Hansen .............................. M1.04
The PPARalpha agonist, fenofibrate decreases levels of anorectic N-acylethanolamines in the small intestine of mice

Akiko Harauma ................................. S1.01
Influence of chronic administration of arachidonic acid on motor behavior in adult mice

William Harris ............................... N4.07
DHA and Trans Fatty Acid Levels in Breast Milk from Mothers in Bangladesh and Malawi: Analysis of Liquid vs. Dried Milk Spots

Joseph Hibbeln ............................... N7.02
Vegetarian dietary patterns during pregnancy and risk of early onset substance abuse among offspring

Samuel Hoile ................................. N7.04
Age and species differences in the methylation of the FADS2 promoter in rats and humans
Kathryn Hopperton .......................... S10.02
Amyloid-β induced inflammation and its resolution by omega-3 polyunsaturated fatty acids in a mouse model of Alzheimer’s Disease

Giorgis Isaac .................................. S13.08
Fast and Simple Free Fatty Acid Analysis Using Sub-2−m Particle CO2 Based Supercritical Chromatography

Suzu Iwanga ................................. S10.01
n-3 fatty acid deficiency accelerated the impairment of mouse brain function induced by stored amyloid beta protein

Jitcy Joseph .................................. S1.03
Exercise induced Calmodulin dependent protein kinase (CaMK)-II activation regulate total cholesterol and insulin sensitivity in rat skeletal muscle

Saki Kakutani ................................. M7.01
Arachidonic acid and cancer risk: a systematic review of observational studies

Galina Kalachova ............................ N1.02
Effect of way of cooking on content of essential polyunsaturated fatty acids in files of zander

Alex Kitson ................................. M4.04
Estrogen receptor α-knockout mice do not exhibit altered hepatic docosahexaenoic acid levels or Δ6- or Δ6-desaturase expression compared with wild-type

Kristina Klizaitė ............................ M1.08
The Role of LPCAT1 and LPCAT2 in Regulation of Lipid Droplets

Anna Kock ................................. M7.06
Characterization of Prostaglandin Signaling in Primary Neuroblastoma

Sophie Layé ................................. N10.07
N-3 polyunsaturated fatty acid nutritional deficiency alters microglial cells activity in the developing brain

Jetty Lee ................................. M4.07
Fish oil supplementation in CC14 injured rodents exclusively suppressed enzymatic and non-enzymatic lipid peroxidation of DHA and EPA

Duo Li ................................. M4.05
N-3 polyunsaturated fatty acids modulate homocysteine metabolism

Duo Li ................................. M7.09
Effect of ximemycin acid on apoptosis of HepG2 cells

Duo Li ................................. S7.07
Docosapentaenoic acid is responsible to mean platelet volume

Lin Lin ................................. M1.02
Regulation of fatty acid ethanalamides by dietary fatty acids and genetics

Yu-Hong Lin ................................. M1.12
Quantification of Endocannabinoids in Animal Organs and Human Fluids by Triple Quadrupole Gas Chromatography/Mass Spectrometry

Mads Vendelbo Lind ........................ N7.06
Oral fish oil administration of infants modifies DNA methylation profiles in mononuclear cells

Ge Liu ................................. S13.06
Stabilisation of long chain polyunsaturated fatty acids in human dried blood spots

Ge Liu ................................. S13.07
Clinical validation of a dried blood spot method for measuring fatty acid status

Linda Ljunghblad ........................ M7.02
Medulloblastoma growth inhibited by LCPUFA DHA and EPA

Olesia Makhutova ........................ N1.04
Evaluation of different fish products as a source of essential PUFA’s, and benefit-risk ratio of fish intake in human nutrition.

Julie Mason ................................. M7.12
α-linolenic acid reduces the growth of HER2-overexpressing breast cancer cells that are sensitive or resistant to trastuzumab (TRAS) and prevents TRAS resistance development

Peter McLennan ........................ S1.08
Resistance to muscle fatigue with low dose dietary fish oil supplement and membrane incorporation of DHA.

John Miklavcic ........................ M1.03
IBD intestine is characterized by gangliosides with fewer unsaturated bonds

Magdalene Montgomery .................. S4.01
Unique changes in hepatic sphingolipid species after high-fat feeding in BALB/c mice correlate with protection from diet-induced glucose intolerance

Shin-ya Morita ........................ M4.09
Efflux and compositional changes of cellular phospholipids mediated by ABCB4 localized in canalicular nonraft membranes

Hye-kyung Na .............................. N7.08
15-Deoxy-D12,14-prostaglandin J2 Upregulates the Expression of 15-Hydroxyprostaglandin Dehydrogenase through DNA Methyltransferase 1 Inactivation

Razieh Niazmand .......................... N1.03
Fatty acids composition and oxidation kinetic parameters of purslane (Portulaca oleracea L) seed oil

Laureane Nunes Masi ...................... S4.03
Effects of fish oil supplementation on inflammation and insulin resistance in mice fed a balanced or high fat diet

Anu Nuora ................................. N1.05
The effects of two different cooking methods on the lipid oxidation of beef steaks and on the postprandial lipid response and oxidative stress state in humans

Noriko Osumi .............................. N10.05
Impact of polyunsaturated fatty acids and fatty acid binding protein on neurogenesis

Jan Palmblad .............................. S10.03
Effects of omega-3 fatty acid supplementation on plasma fatty acids profiles in relation to gender and cognition in Alzheimer patients. The OmegAD study.

Kira Piotrowitz ........................ M4.01
Click-based method to trace lipid metabolism in primary hepatocytes under various metabolic conditions

Robert Purcell .......................... S7.01
Cytoprotective actions of postprandial EPA and DHA-enriched triglyceride-rich lipoproteins on human aortic endothelial cells

Robert Purcell .......................... S7.02
Oxylipin profiling of postprandial human plasma after EPA and/or DHA-enriched high fat meals and identification of direct endothelial actions in vitro

Harry Rice ................................. S7.03
Influence of EPA and DHA on Blood Pressure: A Meta-Analysis of Randomized Controlled Trials

Valenzuela Rodrigo ........................ N4.02
Modification of α-linolenic acid and docosahexaenoic acid composition of milk from Chilean lactating women who received pre- and post-partum α-linolenic acid intake from chia oil

Hadi Sabour .............................. M1.06
Is Omega 3 fatty acid effect on leptin and adiponectin?

Nicholas Salem .......................... M4.06
Rat Whole Body Distribution of Ω-6 and Ω-3 Polyunsaturated Fatty Acids

Linda Samuelsson ....................... N1.01
Digestion-resistant carbohydrates induce changes in the serum lipidome of rats

Concepción Sánchez-Moreno ............ S7.04
Positive effects on lipid metabolism in Wistar rats of hypercholesterolemic diets enhanced by onion intake

Svanhild Schønberg ..................... M7.03
Anticancer properties mediated by PUFA’s – DHA-induced stress response in human colon cancer cells

Gudrun Skuladottir ..................... S4.07
Association of plasma phospholipid docosahexaenoic acid and vitamin D subtypes on the risk of postoperative atrial fibrillation
Poster Sessions (continued)

Ken D. Stark ......................... N10.03
Phosphatidylyethanolamine Methyltransferase, Δ6 Desaturase and Palmitoyldocosahexaenoyl Phosphatidylcholine are increased in Rats during Pregnancy

Xiao Su ............................. M7.05
Krill oil inhibits proliferation of human colorectal cancer cells

Hui-Min Su ......................... M7.11
DHA inhibit pAKT signaling for the expression of SREBP1 and FASN and cell proliferation in human breast cancer cell line

Marianela Vara-Messler ........ M7.04
Era expression is associated to antitumoral mental health score in healthy subjects and intestinal lipid metabolism.

Tetradecylthioacetic acid (TTA) - effect on liver thrombogenic responses postprandially in mild prone rats

Veronika Tillander ............... M4.08
High fat diets induce tissue-specific changes in critical nodes of insulin resistance in obese-prone rats

Yoshitaka Tatebayashi ........... N10.06
Development and Application of a Novel Statistical Analysis of Postmortem Human Brain Fatty Acid Composition – Abnormal Fatty Acid Composition in the Frontotemporal Cortex of Affective Disorders

Carla Taylor ....................... S4.05
High fat diets induce tissue-specific changes in critical nodes of insulin resistance in obese-prone rats

Kim-Tiu Teng ...................... S7.08
Palmitic acid in the sn-2 position does not alter thrombogenic responses postprandially in mild type 2 diabetes mellitus

Veronika Tillander ............... M4.08
Tetradecylthioacetic acid (TTA) - effect on liver and intestinal lipid metabolism.

Hans Van Rooijen .................. N4.08
High-potency EPA increases omega-3 index and mental health score in healthy subjects

Marianela Vará-Messler ........ M7.04
Era expression is associated to antitumoral activity of chia oil enriched diet

Alessandra Vogt ................... S7.05
Heart Rate Variability and Omega-3 Index in Euthyemic Patients with Bipolar Disorders

Clemens von Schacky ............. S1.04
The Omega-3 Index in 106 German Athletes – A pilot study

Tingting Wei ....................... S13.03
Analysis of phospholipid species and triglyceride species by LC/MS/MS in crude algal oil

Suzan Wopereis .................... S4.02
Biomarkers for phenotypic flexibility as evaluated in healthy and diabetic subjects

Hidetoshi Yamada .................. M1.01
Hydroxylation of eicosapentaenoic acid at the C-8 or C-9 position increases ligand activity for PPARs.

Hong Yang .......................... S13.02
Quantification and Classification of Corn, Soybean and Palm olein oils as Adulterants in Sesame oil Using Chromatography and Chemometrics

Alison Yeates ....................... N10.02
A systematic review of biomarkers of polyunsaturated fatty acid status among pregnant and non-pregnant women of reproductive age

Shlomo Yehuda ..................... S10.04
Olfactory bulbectomy as a putative model for Alzheimer’s: The protective role of essential fatty acids

Jiyao Zhang ......................... M4.11
Fatty acid desaturase 3 (Fads3) null mouse biochemical phenotype

Jinping Zhao ....................... N10.04
The absolute amount of plasma DHA increased significantly during pregnancy in healthy pregnant women but did not in women with gestational diabetes

Chuan Zhou ......................... S13.04
Determination of 16 phthalate esters in edible vegetable oils by GC-MS/MS with QuEChERS

POSTER SESSION II:
30 JUNE / MONDAY

Sami S. Al-Ghanami ................ N11.03
Fish consumption for a short period of time improves cognitive ability of healthy Omani school children

James Astwood ..................... S14.01
Unique composition of an algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

James Astwood ..................... S14.02
Safety of a unique algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

James Astwood ..................... S14.03
Acute toxicological evaluation of an algal oil that contains eicosapentaenoic acid (EPA, 20:5n-3) and palmitoleic acid (16:1n-7)

Harold Aukema ..................... M5.10
Amelioration of disease progression and oxylipin abnormalities in pcy mouse kidneys by dietary flax oil demonstrates that α-linolenic acid can be sufficiently converted to docosahexaenoic acid (DHA) to maintain DHA oxylipins levels

Harold Aukema ..................... S2.06
Modulation of Adipogenesis by Oxylipins - Differential Effects on Lipid Droplet Formation and Adipokine Production

Karina Barros ...................... S11.06
Effect of supplementation with fish oil-based lipid emulsion in critically ill elderly patients on cortisol, insulin and antioxidant enzymes

Daniela Barrosucci ................ N8.01
Is maternal intake of ALA from Flaxseed neuroprotective against neonatal hypoxic-ischemic brain injury?

Mariela Bernabe-Garcia .......... M5.04
Docosahexaenoic acid reduces the catabolic effect of sepsis on nutritional status of critically ill neonates

Delplanque Bernadette .......... N5.03
Brain dha restoration in young-deficient rat is better with pure or blended dairy-fat diets compared to similar ala-content vegetable blends

Delplanque Bernadette .......... N5.04
Protective effect of dairy fat on brain dha levels of young rats born from ala-deficient or ala-rich mothers

Elin Bjarnadottir ................... N11.06
Fish Oils Supplementation During Pregnancy and Child Neurodevelopment

Stephanie Caliguri ............... S8.04
A Novel Soluble Epoxyeicosatrienoic Acid Inhibitor: Flaxseed Alters the Plasma Oxylin Profile and Reduces Blood Pressure in a Randomized, Double-Blinded, Placebo Controlled Clinical Trial

Antonio Checa ..................... M8.09
Sphingolipid levels in cerebrospinal fluid serve as markers of disease progression in multiple sclerosis

Benjamin Choque .................. M5.09
Conversion of alpha-linolenic acid to longer chain n-3 fatty acids: competition with linoleic and oleic acids for the delta-6 desaturase

Benjamin Choque .................. M5.12
Reassessment of the linoleic acid requirement in presence of alpha-linolenic acid in the growing rat

M Tom Clandinin ................... M5.06
The influence of ARA intake and FADS SNPs on ARA and DHA level in infant plasma

Krista Coventry .................... S5.03
High-DHA Fish Oil Improves Fasting Lipoprotein Profiles in Adults Taking Statin Medication

Ahmed Daak ......................... M5.08
Omega 3 fatty acid supplementation down-regulates the expression of FADS1 (delta 6 desaturase) and FADS2 (delta 5 desaturase) genes in homozygous sickle cell patients

Albert de Graaf .................... S2.08
Metabolic Syndrome simulator for personal nutritional advice

Baukie de Roos ..................... N2.07
Health effects of consuming 2 portions per week of Scottish farmed salmon raised on different feeding regimes – the FISH DISH study
Ashish Dhyani ........................................... S8.03
The IDOL N342S gene variant is not associated with plasma lipid profile and pre-clinical carotid atherosclerosis in an Italian free living population

Paweł Dobrzyn ........................................ S5.01
Lipid-induced cardiac remodeling and left ventricular steatosis depend on the degree of saturation of fatty acids in dietary fats

Anthony Domenichelli ................................. N11.08
Whole body synthesis rates of DHA from alphalinolenic acid are greater than brain DHA accretion and uptake rates in adult rats

Marc Dubourdeau ...................................... S5.06
Development of a primary human macrophage-derived foam model to study statin on pro-resolving mediators isolated from arachidonic, eicosapentaenoic and docosahexaenoic acids

Simon Dyall .............................................. N11.08
The effects of Efalex Active 50+, an omega-3 fatty acid enriched supplement, on measures of frailty in the older adult - a case study

Naser Estuty ............................................. N2.01
Effects of dietary fat source on the rump muscle composition, n-3 PUFA content in Suffolk rams

Samaneh Ghasemi Fard ......................... S14.08
A comparative gender study on fish oil vs krill oil bioavailability

Martin Giera ............................................. M8.12
The presence of lipid mediators in human synovial fluid of arthritis patients

Renata B. Kostogrys ................................. M8.10
The effect of n3 polyunsaturated fatty acids on risk markers for cardiovascular disease and inflammation in patients with psoriatic arthritis

Kerry Lee ................................................. N11.04
Can fish oil supplementation influence 8-13 year olds’ school achievement?

Robert Hudek ........................................... M8.11
Shoulder orthopaedics and the omega 3 index: Is there an association to rotator cuff tendinopathy?

Bruce Holub ............................................. N2.03
Direct comparison of omega-3 phospholipid levels in krill oil supplements and omega-3 eggs

Robert Hudek ........................................... M8.11
Shoulder orthopaedics and the omega 3 index: Is there an association to rotator cuff tendinopathy?

Kamil Kozinski ........................................ M2.08
Wnt signaling increases rate of fatty acid oxidation in pancreatic beta-cells through specific activation of PPARalpha pathway

Sachiko Juman .......................................... M8.04
Effects of long-term oral administration of Arachidonic acid and Docosahexaenoic acid on the immune functions of young rats

Setsushi Kato ............................................ N11.03
Effects of docosahexaenoic acid intervention on cognitive function and mental health in Japanese oldest-elderly with dementia

Federica Laguzzi ...................................... S8.08
Impact of TT mutant homozygote in CDH13 genes on adiponectin level in patients with statin treatment

Yukihiro Ito ............................................. S8.05
Rice bran-derived acylated steryl glucoside fraction decreases high serum LDL cholesterol level in obese Japanese men

Kamil Kozinski ........................................ M2.08
Wnt signaling increases rate of fatty acid oxidation in pancreatic beta-cells through specific activation of PPARalpha pathway

Emma Kjellberg ........................................ N8.03
Dietary pomegranate seed oil had no effect on liver function in broiler chickens

Sachiko Juman .......................................... M8.04
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Setsushi Kato ............................................ N11.03
Effects of docosahexaenoic acid intervention on cognitive function and mental health in Japanese oldest-elderly with dementia

Federica Laguzzi ...................................... S8.08
Dietary fat and serum cholesterol fatty acids in a cohort of 60 years old men and women.

Yukihiro Ito ............................................. S8.05
Rice bran-derived acylated steryl glucoside fraction decreases high serum LDL cholesterol level in obese Japanese men

Kamil Kozinski ........................................ M2.08
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Kerry Lee ................................................. N11.04
Can fish oil supplementation influence 8-13 year olds’ school achievement?
Rashudy Mahomedradja .................. N5.08
Oxidized linoleic acid products in foods, a literature review

Linda Malan ................................. M8.03
Fatty acid composition of immune and red blood cell membranes differs between allergic and non-allergic rural South-African primary school children.

Asim Maqbool ......................... M8.08
Dietary and Clinical Implications of FA Status in Children with Cystic Fibrosis

Franca Marangoni ................. S5.05
Blood polyunsaturated fatty acids and cardiovascular risk

Justine Marchix ......................... M2.04
Dietary linoleic acid increases tumor necrosis factor alpha in adult rat plasma

Amanda R Martins ......................... M2.01
Influence of fish oil supplementation on skeletal muscle oxidative stress and mitochondrial function in insulin resistant mice

Toru Moriiuchii ......................... M2.09
The alteration of dietary polyunsaturated fatty acids in young and adult delta-6-desaturase null mice

Emmanuel Mukwevho ................. M2.03
Evaluation of the influence of thiosemicarbazone-triazole hybrids on genes implicated in lipid oxidation and accumulation as potential anti-obesity agents

Razieh Niazmand ......................... N2.05
Comparative Fatty Acids Composition and oxidative stability index of Black cumin, Coriander and Dill Seeds oil

Tone-Kari Østbye ......................... M2.12
Cellular responses to oxidized marine lipids

Hui Gyu Park ......................... M5.02
4-Desaturation of 7,10,13,16-22:4 to 4,7,10,13,16-22:5 (Adrenic Acid -> Osbond Acid) Mediated by FADS2 in Human Cells

Hui Gyu Park ......................... M5.07
Human breast cancer cells stably expressed FADS2 synthesize sapienic acid (16:1n-10) from palmitic acid (16:0)

Anna Maria Pauter ......................... S2.02
DHA supplementation abolished resistance of weight gain in Elov12-/- mice.

Anna Petroni ..................... N5.02
Unsaturated fatty acids esterified with androgens as active and safer compounds for androgen-required therapy

Natasa Petrovic ......................... S2.01
In humanized mice, Cidea improves metabolic profile through expansion of adipose tissue

Jason Polreis ...................... S14.04
Development of a liquid-based method for the analysis of unesterified EPA and DHA in plasma

David Pu .................................. M5.01
Polymorphism rs174583 in the FADS2 interacts with dietary fat consumption to modulate plasma fatty acid profiles in individuals with risk of metabolic syndrome

Danuta Radzioch ......................... M8.07
Correcting the polyunsaturated fatty acid imbalance in cystic fibrosis with fenretinide

Marie Sannes Ramsvik .............. M2.05
A Phospholipid-Peptid Complex from Krill reduces plasma triacylglycerol mainly due to reduced lipogenesis and not mitochondrial oxidation in low-fat fed rats

Amalie Ribel-Madsen .................. S2.05
The effect of a short-term high-fat overfeeding on plasma levels of amino acids in young, healthy men with low or normal birth weight.

Alex Richardson ......................... N1.05
Randomised Controlled Trials of Omega-3 LC-PUFA for Child Behaviour and Learning: Theoretical and Practical Considerations

Vincent Rioux ......................... M5.05
Identification of FADS3 (Fatty Acid Desaturase 3) as a trans-vaccenate D13-desaturase in mammals

Patrizia Rise ......................... N5.06
Effects of an eight-week consumption of milk enriched with Omega 3 fatty acids on lipid profile in adult healthy volunteers

Josina Rodrigues ......................... M5.03
n-3 fatty acids modulate the wound closure in mice

Adrien Rossary ......................... M2.10
Modulation of oxidative status in human mammary epithelial cells by leptin is dependent of neoplastic status.

Irina Shabalinina ......................... M2.07
Fatty acids as regulators of mitochondrial uncoupling protein 1: structural requirements and coactivator demands

Karen Simmer ......................... N8.06
Efficacy and safety of a novel fish oil based emulsion (SMOF®) compared with olive oil based lipid emulsion (Clinoleic®) in term and near-term (34 weeks)surgical neonates – A randomised controlled trial.

Karen Simmer ......................... N8.07
Choice of Parenteral Lipid Emulsion to maintain DHA status in Very Preterm Infants – Evidence from RCTs

Eleni Siorikl ......................... S5.08
Structure and cardioprotective functions of polar lipids of olive pomace-enriched and conventional gilthead sea bream (Sparus Aurata) and their fish feeds

Cornelius M Smuts ..................... N2.04
Red blood cell fatty acid status and dietary intake of children and their caregivers from three distinct communities in South Africa

Louise B. Sørensen .................... N11.02
n-3 LC-PUFA-status is associated with cognition and school performance in 8-11 year old Danish children

Toshiaki Sueyasu ......................... N11.01
Effect of long-chain polyunsaturated fatty acid on mood state in elderly Japanese men

Miyoungh Suh ......................... S2.03
High oleic acid provided in the diet reduces prostate enlargement by decreasing lipolysis in diet-induced obese rats

Maria das Graças Tavares do Carmo ...... N2.02
Fatty acid content of biscuits commercialized in Brazil

Noemi Tejera ......................... S8.07
Impact of dietary anthocyanins on long chain n-3 fatty acid status: Studies in cells, rodents and humans

Hisanori Tokuda ......................... S11.02
Effect of long-chain polyunsaturated fatty acid on cognitive function in elderly Japanese men

Inge van der Wurff ..................... N11.01
Food2Learn: Randomized control trial investigating influence of krill oil supplementation on learning, cognition, and behaviour in healthy adolescents. Design presentation

Clemens von Schacky ................... S5.04
Trans Fatty Acids in Erythrocytes from 17 European countries

Anna Walczewska ......................... M2.02
Docosahexaenoic acid attenuates oxidative stress and increases the mitochondrial membrane potential in human gingival fibroblasts.

Annette West ......................... S14.06
Incorporation of omega-3 fatty acids into plasma phosphatidylcholine when consumed in different structural forms
POSTER SESSION III: 1 JULY / TUESDAY

Mohammad Abdullah ........................................ S15.01
Economic Benefits of Mediterranean-Style Diet Consumption: Estimation of Healthcare Savings in Canada

Samia S. Al-Ghannami ........................................ S3.06
Low dose omega 3 fatty acids reduce fat mass and systolic blood pressure in school children

Eric Allain .......................................................... M6.03
5-lipoxygenase and its delta-13 isomerase occupy different subcellular compartments and delta-13 inhibits leukotriene biosynthesis independently of FLAP or CLP

Ali Arabi Arabani ................................................. N3.08
The effects of pretreatment processes on oil extraction from tomato wastes

Martine Armand ................................................... S6.05
Effect of a supplementation in dha provided by avian glycerophospholipids in pulmonary arterial hypertension and cardiac insufficiency in rats

Hildur Arnardottir ............................................... M3.03
Resolution of peritonitis is delayed in aged mice: DHA, Resolvis and Maresins shorten resolution in vivo

Narcisa Bandarra ................................................ S6.08
Effects of n-3 PUFA, ALA, SDA, EPA and DHA, on prevention of cardiovascular disease

Jeaninne Baumgartner ........................................ N3.05
N-3 fatty acid status affects peripheral and neuronal iron status and vice versa in rats

Gordon Bell .......................................................... N3.02
Salmon products purchased from UK retailers in 2013: a survey of oil and fatty acid compositions

Guy Ben Zvi ........................................................ N12.02
The Omega Protocol: Fish Oil Treatment for Neuropsychiatric Disorders as a Substitute for Drugs

Delplanque Bernadette .......................................... S12.05
Impact of denutrition and lipid quality for nutrition on plasma fatty acids and inflammatory markers in old rats

Ulrika Birberg Thornberg .................................... N6.07
Does LCPUFA supplemented to mothers during pregnancy and breast-feeding enhance cognitive performance in children at age eight years? An RCT study

Daniel Bittner ....................................................... S6.02
Correlation between Coronary Calcification Quantified by Dual Source Computed Tomography and Erythrocyte Fatty Acid Composition

Robert Block ......................................................... M6.09
Circulating levels of EPA and DHA potentially modulate the effects of aspirin on lysolipids

Benjamin Buaud ................................................... S9.04
Effects of dietary supplementation with n-3 long-chain polyunsaturated fatty acids and vitamin A on the spatial memory in aged rats

Patricia C. De Velasco .......................................... N6.01
Fatty acid profile and brain inflammatory status in adult offspring of dams fed with different lipid composition diets

Stephanie Caligiuri .............................................. M6.10
Dietary linoleic acid (LA) does not alter renal phospholipid arachidonic acid (ARA) but does significantly alter oxylipins in renal tissue of obese rats

Marta Citeli ........................................................ N9.05
Polyunsaturated fatty acid transfer across the placenta of adolescent mothers

Alison Coales ....................................................... S9.05
Relationship between erythrocyte content of long chain omega-3 polyunsaturated fatty acids and depression in patients with ischemic heart disease or heart failure

Alexandre Courchesne-Loyer ................................ S12.03
Effects of homogenization on ketone production and side effects of medium-chain triglycerides in humans.

Alexandre Courchesne-Loyer ................................ S12.04
Stimulating ketogenesis with a combination of bezafibrate and MCT in humans.

Dirk Dannenberger .............................................. M3.07
High fat diets rich in n-3 or n-6 polyunsaturated fatty acids have distinct effects on lipid profiles and lipid peroxidation in mice selected for either high body weight or leanness

Anna De Boer ....................................................... S3.07
n-3 PUFA decrease M1 macrophage polarization and inflammatory mediator secretion in an in vitro and ex vivo murine adipocyte macrophage co-culture model

Herbert Fuhrmann .............................................. M3.05
Arachidonic acid promotes the release of mast cell mediators by effecting both PLD isozymes

Jean-Marie Galano .............................................. S6.04
Novel Anti-Arrhythmic Compounds Originate from Non-Enzymatic Peroxidation of DHA

Kebreab Ghebremeskel ....................................... N12.05
High functioning autistic and Asperger’s syndrome children have an abnormal plasma fatty acid profile

Kebreab Ghebremeskel ....................................... S3.04
Erythrocyte palmitoleic acid correlates positively with fat mass and plasma triglycerides in normal weight school children

Sanjoy Ghosh ....................................................... S6.06
Dietary excess of linoleic acid stiffens the obese heart: A novel pathway for cardiaclipotoxicity of n-6 PUFA

Rachel V. Gow ..................................................... N12.06
The Neuroimaging Omega-3 Reward in Adults with ADHD (NORAA) Clinical trial

Kei Hamazaki ..................................................... S9.06
A Case-control Study for Fatty Acid Composition of the Postmortem Prefrontal Cortex from Patients with Schizophrenia

Lars Helgren ....................................................... N6.08
Exposure to a high-caloric diets in utero reduces fatty acid metabolic flexibility through hampered hepatic capacity for PUFA metabolism in the adult rat when fed a high-fat diet.

Marie Hennebelle ............................................... S12.01
A Western-style diet compromises the benefit of energy restriction on metabolite and lipid profiles in aged rats

Marie Hennebelle ............................................... S12.02
Flaxseed oil supplementation increased plasma eicosapentaenoic acid proportion, but did not stimulate ketogenesis in healthy young and older adults

Brandon Hidaka .................................................. M3.11
Erythrocyte DHA content is the most stable indicator of long-chain n-3 polyunsaturated fatty status in circulation

Helena Idborg ..................................................... M6.06
Effect of mPGES-1 targeting on lipid metabolism in human cells

Nicola Irvine ....................................................... M3.10
Polyunsaturated fatty acid synthesis de novo is required for calcium release in vascular smooth muscle

Thomas Jansson .................................................. N9.03
Transcriptional regulation of lipid metabolism and transport by mTOR signaling in primary human trophoblast cells

Peter Jones ........................................................ N3.01
Effect of phospholipid content of krill oil supplemented to healthy volunteers on incorporation of EPA and DHA in RBC

Hiroshi Kawashima ............................................. M6.02
FADS1 polymorphisms influence LCPUFA levels of plasma and erythrocyte phospholipids in elderly Japanese

Alex Kilson ........................................................ N12.04
Comparison of the effects of docosahexaenoic acid (DHA) provided as triacylglycerol, phospholipid, or a mixture of both on brain and serum DHA in rats

Kumar S. Kothapalli ............................................. M6.11
Allele frequency of a 22-bp insertion/deletion polymorphism of FADS2 in a US population

Marije Kuipers ................................................... M6.05
Adrenic Acid is a substrate of soybean 15-LOX and blocks leukotriene biosynthesis of primary human neutrophils in the micromolar range
Effects of dietary supplementation with omega-3s in TBI and Post-Concussive Syndrome

Maria Mulhern

Modifying dietary LA and ALA leads to favourable increases in n-3 status: A systematic review

Yutaka Matsuoka

Serum levels of polyunsaturated fatty acids and the risk of posttraumatic stress disorder

Yutaka Matsuoka

Docosahexaenoic acid for selective prevention of posttraumatic stress disorder among severely injured patients: A randomized, placebo-controlled trial

Barbara J. Meyer

Total lipid, specifically triacylglycerols, cholesterol esters and phospholipids, are increased in placental tissue from women with pre-eclampsia compared to healthy placenta tissue

Barbara J. Meyer

Women with pre-eclampsia have increased placental lipid but their increased plasma very low density lipoprotein particles is not associated with altered lipid and fatty acid composition

Luisa Minghetti

The α-linolenic acid oxidative product protect immature neurons from oxidative injury and promote differentiation of oligodendrocyte progenitors

Roel Mocking

Transdiagnostic Comparison of Fatty Acid Metabolism between Depression, Schizophrenia, Post-Traumatic Stress Disorder and Healthy Controls; Associations with Endocrinology, Neuroimaging, and Inflammation

Martine Morrison

Virgin pumpkin oil provides benefits beyond those of refined pumpkin oil on cardiometabolic risk factors and disease development

Maria Mulhern

Correlations between LCPUFA status and CRP concentrations during pregnancy in a high fish eating population

Yukiko Naito

Effects of dietary supplementation with omega-3 or omega-6 fatty acids in diabetic mice

Katherine Ness

Effects of targeted alterations in dietary n-3 and n-6 fatty acids on substance P, CGRP, oxytocin and vasopressin in chronic headache patients

Katherine Ness

The lipid autacoid-transcriptome and biosynthetic precursor fatty acid composition of pain-related tissues

Abbas Norouzi Javidan

Effect of omega-3 polyunsaturated fatty acids on lipid profile in spinal cord injury patients

Maretha Opperman

Analysis of the omega-3 fatty acid content of South African fish oil supplements: A follow-up study

Sarah K. Orr

Pro-resolving actions of a novel RvD1 analog qualifying as a lead immunoresolvant

Renata P. Assumpção

Fatty acid profile in maternal and umbilical cord erythrocytes and placental expression of fatty acid transporters in pregnancies with intrauterine growth restriction

Yongsoon Park

Association between Erythrocyte n-3 Polyunsaturated Fatty Acids and the Risk of Type 2 Diabetes in Koreans

Yongsoon Park

Synergistic anti-depressant effects of N-3 polyunsaturated fatty acids and 17β-estradiol in ovariectomized rats after forced swimming test

Natalie Parletta

People with serious mental illness have low omega-3 index – preliminary data from a pilot feasibility study (HELFIMED)

Theresa Powell

Differential effects of fatty acid species in modulating placental inflammation and function

Carlos Puebla

Linoleic acid induces hemichannel activity via gpr40 (ffar1) in human gastric epithelial cells

Amit Ringel

Dietary Linoleic Acid and Tissue Fatty Acid Content in Rats: Potential Implications for Idiopathic Pain Conditions

Martin Rossmesir

Metabolic effects of phosphatidylcholine-rich omega-3 phospholipids are superior to both fish oil or soy-derived phosphatidylcholine in dietary obese mice

Arild Rustan

Increased lipid oxidation and decreased lipid storage in myotubes from Plin2 knock-out mice

Lauri Sanborn

Unexpected Similarity in Red Blood Cell DHA and ARA Levels Between Bottlenose Dolphins and Humans

Andrew Scholefield

Fatty acid metabolism in a southern bluefin tuna (Thunnus maccoyii) cell line

Jan Philipp Schuchardt

A single dose of long-chain n-3 PUFA induces significant changes in oxylipin patterns of human plasma

Kenna Slim

The interactive impact of APOE genotype and fish oil fatty acids on glucose tolerance and fatty acid status

Flavia Spreafico Fernandes

Effects of different dietetic lipid sources consumed during pregnancy and lactation on the body composition and adiposity in male mice offspring in later life

Flavia Spreafico Fernandes

Dietary fat alternatives for trans fatty acids, palm oil and interesterified fats induce depression and memory deficit in C57BL/6 mice.

M. Elizabeth Sublette

Low Plasma Eicosapentaenoic Acid Levels Associated with Elevated Trait Aggression and Impulsivity in Major Depressive Disorder

Marc Surette

Promoter-dependent induction of 5-lipoxygenase expression in human monocytes cell lines

Nadezhda Sushchik

Comparison of polyunsaturated fatty acids content in files of anadromous and landlocked sockeye salmon Oncorhynchus nerka

Kim-Tiu Teng

Effects of saturated fatty acids on inflammatory and thrombogenic markers in subjects with abdominal obesity

Veronika Tillander

Acyl-CoA thioesterase 9 - A novel link between mitochondrial fatty acid and amino acid metabolism?

Yoshihisa Urita

Exogenous acetate metabolism is suppressed in patients with fatty liver diseases.

Inge van der Wurff

Relation between current and early LCPUFA exposure on academic achievements at age 7: Is there an early programming effect?

Francesco Visioli

Docosahexaenoic acid uptake by murine cardiomyocytes in vitro and in vivo: Significance to physiologically relevant studies.

Clemens von Schacky

The Omega-3 Index - a review of the current state of the evidence

Peter Y. Wielinga

Long-chain polyunsaturated fatty acids in early life can prevent inflammatory processes in the brain associated with an obesogenic diet later in life.
Ina Willenberg .......................... M6.04
Modulation of COX-2 Activity by Food Polyphenols
Suzan Wopereis ......................... S15.02
A high-fat, high-caloric drink as standard to perturb homeostasis: the PhenFlex challenge
Jeffrey Yao .............................. S9.08
Reduced Phospholipid-Arachidonate-Eicosanoid Signaling Underlying a Potential Endophenotype Marker in Schizophrenia
Karin Yurko-Mauro .................... N3.03
Efficacy and Safety of a new Microalgae DHA and EPA-containing Oil in Adults with Elevated Triglycerides
Zeinab Zayed ............................ N3.04
Effects Of Thymol and Eugenol On Biodegradation Of Fish Oil Fatty Acids By Rumen Microorganisms In vitro
Peter Zock ............................... S15.03
Intakes of saturated and polyunsaturated fatty acids in populations worldwide do not meet dietary recommendations to prevent coronary heart disease: a systematic review of data from 40 countries

Kudos and a heartfelt thank you to the ISSFAL 2014 Poster Presenters for their contributions to the field

THANK YOU 2014 CONGRESS FACULTY AND DELEGATES

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