



European Association for the Study of Obesity

Obesity: The Gateway to Ill Health

A statement from EASO on a rising public health problem and the need for research and innovation in Europe

Obesity is recognised as a global epidemic and the most prevalent metabolic disease world-wide. Despite significant recent research investment, obesity prevalence rates continue to rise throughout most countries of the world, not least in Europe. The disease therefore incurs an increasingly heavy burden not only on overweight and obese citizens themselves but also on health care systems, the efficiency of the workforce and society at large.

Obesity is a gateway to a host of other diseases, including but by no means limited to diabetes, cardiovascular disease, cancers, respiratory and joint problems. Thus, if we prevent and manage obesity, we will block a major supply route to these chronic diseases.

Research is part of the solution to the obesity epidemic. In recent decades, research has helped improve our understanding of the complex effects of increased fat tissue on the human body. It has enabled us to develop better evidence based guidelines to prevent, manage and treat obesity, including better bariatric surgery procedures to treat extreme obesity. But better coordination is still needed in order to increase the translation of research into better prevention and treatment strategies.

In response to this situation, EASO in 2010 established a Scientific Advisory Board (SAB), the aim of which is 'to challenge current thinking in European obesity research in order to identify the key issues that may push our scientific frontier in the field and which may achieve the greatest societal and economic impact in the next decade.

The EASO SAB has now completed a two year consultation process, culminating in a meeting of Europe's leading researchers and main stakeholders in the field with the aim of developing a clear research strategy, with consensus on what the key areas for European obesity research should be, the expected impact of this research and how we can achieve success in these areas in terms of novel approaches, and the development of significant innovative products and societal impact. The conference was organized by EASO on 29th February 2012 and hosted in Brussels by the European Commission (DG Research and Innovation).

The executive summary of the conference highlights a number of important European research priorities that were identified by leading international experts (see annex I and II). These priorities hold the key to advance obesity prevention and treatment in Europe, but we must understand that they require a political commitment on both member state and EU level. EASO recommends that a first priority is to **'Improve obesity diagnosis (beyond BMI) to categorize individuals for appropriate prevention and management, including critical periods of life'**.

For this and for all recommended research topics, a major focus is on transdisciplinary approach (integrating social sciences and humanities), societal impact and innovation/economic growth. EASO and its member organizations will continue to work towards achieving the research priorities identified, but a wider European effort is needed. EASO therefore asks the European Commission, the European Parliament and member states to help advance the coordination of obesity research in Europe to the benefits of citizens, society and industry.



Obesity Research in Europe

Themes

- Beyond BMI / Obesity Diagnosis
- Capacity building and multisectoral obesity-centred interventions
- Choice architecture and regulatory action
- Variability in response to obesity treatments
- Obesogenic environments
- Obesity and aging
- The biological-behavioural-environmental interface

Recommendations

- Improve obesity diagnosis (beyond BMI) to categorize individuals for appropriate prevention and management, including critical periods of life
- Develop frameworks and capacity building for effective implementation, integration and evaluation of multisectoral obesity-centred interventions, including “natural events”
- Strengthen the evidence base for ‘consumer behaviour’ and regulatory action to change obesity-related behaviours
- Understand the large interindividual variation (biological, behavioural) in response to obesity treatment, including surgery trials
- Determine characteristics of obesogenic environments for all ages, and propose validated instruments for assessing the “exposome” in relation to obesity
- Understand the adaptations (molecular, physiological, behavioural, social) to excess fat mass/triglyceride storage in ageing citizens
- Study the biological (brain, organ cross talk, metabolism, genetics)-behaviour (food choice, appetite, activity, sedentariness)-environment (physical, social) interface to change obesity-related behaviours

For all topics, a major focus is on: transdisciplinary approach (integrating social sciences and humanities), societal impact and innovation/economic growth

N.B. These key themes and recommendations are an output of EASO’s European Obesity Research Conference, held in Brussels on 29th February 2012. There is consensus that ‘Beyond BMI/Obesity Diagnosis’ is a first priority. The other themes and recommendations are listed in no particular order of priority.

Executive Summary

Mission Statement

To challenge current thinking in European obesity research in order to identify the key issues that may push our scientific frontier in the field and which may achieve the greatest societal and economic impact in the next decade.

Summary Introduction

Obesity is recognised as a global epidemic and the most prevalent metabolic disease world-wide. Despite significant recent research investment, obesity prevalence rates continue to rise throughout most countries of the world, not least in Europe. The disease therefore incurs an increasingly heavy burden not only on overweight and obese citizens themselves but also on health care systems, the efficiency of the workforce and society at large. Obesity is frequent, serious, complex and chronic. Moreover, it is recognised as a gateway to many other disease areas, including but by no means limited to diabetes, heart disease, cancers, respiratory problems and joint problems. Thus, if we manage and prevent obesity, we will block a major supply route to these diseases.

In response to this situation, EASO convened a meeting of Europe's leading researchers and main stakeholders in the field with the aim of developing a clear research strategy, with consensus on what the key areas for European obesity research should be, the expected impact of this research and how we can achieve success in these areas in terms of novel approaches, and the development of significant innovative products and societal impact.

The conference was the culmination of two years of discussion and consultation by EASO's Scientific Advisory Board (SAB) and other important stakeholders from both Europe and North America. The EASO SAB was established in 2010 to critically review and analyse the body of research being carried out in the field of obesity in Europe. It represents a body of experts in various obesity-related fields from biological to social sciences, which can be mobilized to assess the performance of obesity research and to highlight fruitful future avenues. The consultation process solicited inputs from EASO's 31 member National Obesity Associations, EASO's Task Forces and was linked to two national workshops on obesity research held in Denmark (August 2011) and Germany (December 2011).

The conference was organized and convened by EASO on 29th February 2012 and hosted in Brussels by the European Commission (DG Research and Innovation). The conference was opened by Professor Jean-Michel Oppert (France), the current President of EASO, with opening addresses by the DG Research & Innovation, Director for Health, Dr Ruxandra Draghia-Akli and by the Principal Adviser to the Director General of DG SANCO, Dr Despina Spanou.

The main program consisted of regional overviews, snapshot presentations and group discussion sessions. Regional overviews, presented by EASO's Regional Vice Presidents, highlighted the diversity of Europe but also the strong base for obesity research across the region. It is clear that most, but not all, countries in Europe possess infrastructures to facilitate and develop research but some of these infrastructures appear fragile. There is a great potential for sharing expertise and increasing collaboration between regions and countries. The major roadblock to research development in Europe is funding, but a lack of focus on transdisciplinary collaboration, lack of training, non-consistent pan European data and monitoring systems, the failure to recognise obesity as a chronic disease and other competing health priorities were seen as other limiting factors.

A series of snapshot presentations on important issues in the field outlined the current situation in European obesity research, with each presenter asked to address key strategic questions, as follows:

- What are the 5 main societal challenges related to obesity, that research should aim to address?
- Where are the new frontiers of obesity research that will expand the boundaries of our knowledge?
- How do we develop good transdisciplinary research around obesity research?
- How can we develop new products (technical, pharmaceutical or processual) from the outcomes of scientific research?

This gave a clear picture of the current strengths and limitations in European obesity research and highlighted the need for focussed evaluation of existing inputs, measures and impacts, so as to identify ways in which new models can be developed to increase the impact of research.

New research focuses were then debated and identified in cross disciplinary group sessions, the aim of which was the identification of the main research targets and the development of a series of recommendations on the key research priorities that will stimulate societal impact and innovation. It emerged that EASO has the capacity to organize and integrate thinking about research and management of obesity across Europe.

Key Issues in European Obesity Research

General recommendations

Obesity is a predisposing factor for other diseases

- Obesity is a significant cause of diabetes, heart disease, cancers, respiratory problems and joint problems. The prevention and management of obesity can reduce the cumulative effects of ill health

Transdisciplinary approach: obesity is a model

- Integrate social sciences and humanities to biomedical research, combine quantitative and qualitative methods, develop systems thinking and possibly new paradigms recognizing that obesity is the output of a complex system

Time course perspective: obesity develops and impacts over the lifespan

- Europe faces the first generation of ageing obese individuals and obesity appears earlier in childhood. Understand the impact of obesity in ageing populations and transgenerational effects from birth through infancy and childhood with a focus on prevention

Societal impact: obesity affects the most vulnerable segments of the population

- Understand the impact of the social gradient on the development, prevention and management of obesity; understand the impact of obesity on social integration

Innovation: obesity represents a large market for new products and economic growth in Europe

- Develop the use of new technologies (including IT and imaging technologies) for surveillance, biomonitoring, behaviour change in relation to body composition and obesity-related behaviours; design new products/procedures for health promotion, diagnostics, weight loss and weight maintenance (e.g. new pharmaceuticals, food products or surgical procedures)

Thematic recommendations

Behaviour change through the lifespan

- Develop measures and taxonomy of obesity-related behaviours that will help explain the differences in prevalence of overweight and obesity across Europe for better support of overweight or obese prone individuals. Investigate differences in age structure in each member states
- Develop strategies to counter inappropriate behaviours in childhood as a way of 'preventing' obesity
- Study the biological (brain, organ cross talk, metabolism, genetics)-behaviour (food choice, appetite, activity, sedentariness)-environment (physical, social) interface and particularly in the setting of changes occurring as "natural events"
- Explore potency and plausibility of 'choice architecture' interventions to change behaviour of populations or large groups
- Strengthen the evidence base (including laboratory studies and modelling) for regulatory action (labelling, marketing, fiscal measures) to change obesity-related behaviours

Public health and prevention

- Develop frameworks for effective implementation and integration of interventions (including sustainable public-private partnership and sustainable political commitment) and research tools for quantitative and qualitative evaluation of integrated approaches. Develop capacity building through multisectoral action
- Determine characteristics of favourable environments for all ages (especially for physical activity promotion) and key interactions of environment with perceptions of environments and personal/social determinants
- Assess the impact on obesity of the changing economic climate and the impact on inequalities of interventions
- Develop a pan-European surveillance system of obesity, its causes and consequences

Management/treatment

- Improve obesity diagnosis (go beyond BMI with a focus on "detrimental fat accumulation") to be able to categorize individuals for appropriate prevention and management incl. critical periods of life
- Identify treatment targets (weight loss/fat loss/weight maintenance or metabolic abnormality?) and better define what is understood by "success" at various ages
- Understand the large interindividual variation in response to treatment (including surgery)
- Perform studies comparing surgery to the best care programs (including therapies for comorbidities)

Causes, pathogenesis and consequences

- Propose validated instruments for assessing the "exposome" and risks related to obesity across Europe: questionnaires, objective tools, biomarkers to identify relevant phenotypes and sub phenotypes
- Understand the physiological and molecular adaptations to excess of fat mass/triglyceride storage in ageing individuals by integrating the multisystemic nature of frailty
- Develop systems biology/medicine applied to obesity - using computer modelling especially to integrate the flow of data arising from studies on genetics, transcriptomics, metabolomics and epigenetics and behaviour
- Invest in, and stimulate thinking about, innovative therapies