

PROFESSOR STEPHEN O'RAHILLY RECEIVES THE INBEV-BAILLET LATOUR HEALTH PRIZE 2010 FOR HIS PIONEERING RESEARCH IN THE FIELD OF OBESITY AND ITS RELATIONSHIP TO TYPE 2 DIABETES

The InBev-Baillet Latour Fund has awarded its 2010 Health Prize, the most important scientific Prize in Belgium, to the Irish Professor Stephen O'Rahilly of the University of Cambridge. The theme of this year's Prize is metabolic disorders. Professor O'Rahilly was honoured on account of his pioneering research in the field of human obesity and its relationship to type 2 diabetes. He was the first person to show that a change in one or two genetic factors may lead to serious forms of obesity and as a result he succeeded in negating the accepted hypothesis that obesity is mostly the result of individual behaviour.

Belgium's most important scientific Prize

The InBev-Baillet Latour Fund was established to promote an important realization in the area of science, academy or art. Since 1979, the InBev-Baillet Latour Fund has been awarding the InBev-Baillet Latour Health Prize to a scientist for his or her contribution in the ambit of medical scientific research and/or its practical application. Since 2000, the Prize has been awarded annually. Contrary to other international scientific prizes, this Prize is not only intended to promote fundamental research, but also its practical application. The Prize, for the value of 200,000 euro, is the most important science prize being awarded in Belgium.

The Prize awards medical research in one of the five research areas selected by a scientific committee. This Scientific Committee, chaired by Professor Rik Casteels (K.U.Leuven), organises the Prize with the support of the Fonds de la Recherche Scientifique-FNRS (F.R.S.-FNRS) and the Research Foundation Flanders (FWO). The Scientific Committee appoints an international jury annually, consisting of seven members, including one Belgian.

The InBev-Baillet Latour Health Prize 2010, on the theme of "Metabolic disorders", was awarded to Professor O'Rahilly for his pioneering research in the field of human **obesity** and its relationship to **type 2 diabetes**.

Obesity, a very common disorder

Obesity and overweight are defined by the World Health Organisation (WHO) as an accumulation of fat to an extent which endangers one's health.¹ This may include cardiovascular diseases, diabetes, disorders of the locomotor apparatus and certain forms of cancer. Overweight and obesity cause 80% of all cases of type 2 diabetes, 35% of ischemic heart diseases and 55% of diseases related to high blood pressure amongst adults in the European Union. In total, more than 1 million people die each year as a consequence of these conditions. The World Health Organisation also reports that the number of

¹ WHO, Obesity and overweight, <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>, 2006.

deaths as a result of diabetes will rise by more than 50% in the next 10 years. Currently more than 220 million people worldwide suffer from diabetes.²

In Belgium, the number of diabetes patients is estimated at 7% of the population.³ The Health Survey of 2008 revealed that the number of overweight people has increased linearly since 1997. 33% of the adult population is currently overweight (BMI of 25 or more) and 18% is suffering from obesity.⁴

Stephen O’Rahilly, Professor of Clinical Biochemistry and Internal Medicine: recipient of the InBev-Baillet Latour Health Prize 2010



Stephen O’Rahilly is Professor of Clinical Biochemistry and Internal Medicine and director of the Metabolic Research Laboratories at the University of Cambridge. He is also co-director of the Institute of Metabolic Research. This institute was established by the University of Cambridge, the Medical Research Council and Addenbrookes Hospital.

Professor Stephen O’Rahilly **was the first person to show that a change in one or two genetic factors can lead to serious forms of obesity.** He also discovered a genetic defect which leads to a reduction of the insulin sensitivity of tissues and, as a result, to diabetes.

Stephen O’Rahilly studied patients with pronounced metabolic disorders, such as obesity and insulin resistance, and succeeded in identifying several as yet unknown syndromes whereby defects in only one or two genes were enough to lead to serious illnesses. For example, he discovered the first mutations which lead to obesity in humans (in PCSK1 and LEP). Together with his colleague Sadaf Farooqui, he then described a whole series of genetic obesity syndromes, including a deficiency in the Melanocortin 4 receptor, a disorder which occurs in more than 1 million patients.

A deeper analysis of these patients also brought to light spectacular new insights into normal physiology. For example, it emerged that the most important mechanism in the development of obesity amongst these patients was based on a deficiency in appetite control. Professor O’Rahilly and his colleagues succeeded in showing that a daily administration of recombinant leptin produced a dramatic normalisation of body weight and health amongst patients with this life-threatening form of obesity. On the basis of these findings, Professor O’Rahilly also postulated that genetic variation could play an important role in the regulation of food intake with normal forms of obesity. The current extensive genome analyses confirm this hypothesis.

² WHO, Diabetes, <http://www.who.int/mediacentre/factsheets/fs312/en/>, 2009.

³ the Flemish Agency for Care and Health, <http://www.zorg-en-gezondheid.be/default.aspx?id=552&terms=diabetes>

⁴ Health Survey Belgium, 2008.

The clear role of hereditariness in the development of obesity has negated the common hypothesis that obesity is founded upon maladjusted individual choices. O’Rahilly’s research has delivered incontrovertible proof that the genetic variants which lie at the origin of obesity primarily determine brain control of food intake. Until now, it was assumed that they have an influence on the metabolism of the tissues.

Finally, O’Rahilly and his team discovered several genetic variations which can lead to diabetes by causing the body to become resistant to its own insulin. A thorough physiological analysis of patients with such disorders was the starting point for new insights into the regulation of insulin in humans.

Professor O’Rahilly’s research is **a classic example of the integration of meticulous clinical patient research and modern scientific research**. Through this combination, Professor O’Rahilly has succeeded in incorporating important scientific findings into practical patient care. His research is an ideal demonstration of clinical analysis and related fundamental research.

Stephen O’Rahilly is a member of a number of scientific research and advisory bodies and has been the recipient of numerous scientific prizes and distinctions. His work is regularly published in renowned scientific journals.⁵

Scientific Committee of the InBev-Baillet Latour Health Prize 2010

The Scientific Committee is responsible for the scientific supervision of the **InBev-Baillet Latour Health Prize**. The Committee is chaired by Professor Rik Casteels (K.U.Leuven). The other members are Prof. Jacques Brotchi (ULB), Prof. Désiré Collen (K.U.Leuven), Prof. Walter Fiers (UGent) and Prof. Guy Rousseau (UCL). The F.R.S-FNRS provides the administrative and logistical support.

Jury of the InBev-Baillet Latour Health Prize 2010

Chairman: Prof. Jean GIRARD, Université de Paris V

Jury members:

Prof. Peter ARNER, Huddinge Karolinska Institute

Prof. Keith FRAYN, University of Oxford

Prof. Folkert KUIPERS, University Medical Center Groningen (UMCG)

Prof. Guy ROUSSEAU, Université Catholique de Louvain

Prof. Markus STOFFEL, ETH Zurich

Prof. Bernard THORENS, Université de Lausanne

⁵For more detailed information concerning the educational background, awards and publications of Prof. O’Rahilly, please see the biography in the addendum.

For further information

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THE FUND INBEV - BAILLET LATOUR

The **INBEV-BAILLET LATOUR FUND** was founded in 1974 by Count Alfred de Baillet Latour, Member of the Board of Directors of Brasseries Artois from 1947 to 1980. Its objective is to encourage work of great value to humanity, of a mainly scientific, educational or artistic nature, and to reward such work by means of prizes or study grants, excluding any profit motive and regardless of political, trade union, philosophical or religious convictions. The InBev-Baillet Latour Fund is active in following main areas: medical research, Belgian heritage, university education and the Olympic movement.

In the area of medical research, the InBev-Baillet Latour Fund has been awarding the **InBev-Baillet Latour Health Prize** since 1979. This prize, currently worth 200,000 euros is one of the most important science prizes awarded in Belgium. Since 2006, the InBev-Baillet Latour Fund awards the **Clinical Research Prize**, which each year supports two young Belgian research scientists one from each community in the country. In addition, since 2008, the Fund is financing research into rare tropical diseases at the **Antwerp Institute for Tropical Medicine**.

In the field of education, the Fund finances the **University Chair at UCL/KUL (Catholic University of Louvain)**, established in June 2000 to promote research into relations between the European Union and Russia. The fund also finances a **Euromarketing Chair at the Solvay Business School**.

As from 2008/2009 the Fund will also finance a new **Chair with KUL/UCL on the relationship Europe-China**, as well as a **Chair** on the same subject at the **College of Europe**.

In addition, the Fund awards **study grants** to doctoral students conducting scientific research in the field of brewing, to students conducting research into relations between Russia and the European Union, to Belgian students attending the **College of Europe** and the **Royal Institute for cultural Heritage**. Since 2008 the Fund yearly contribute towards 5 young musicians at the **Queen Elisabeth College of Music**.

In 2002, the Fund launched a new initiative, the **InBev-Baillet Latour Programme for the Restoration of Belgian Cultural Heritage**, who yearly ensure for the restoration of important cultural objects. The Fund also finance the realisation of 6 rooms Art Deco/Art Nouveau at the KMKMG (Koninklijke Musea voor Kunst en Geschiedenis).

The Fund further intends to provide financial support to the Olympic movement and to Belgian athletes both through the **COIB-BOIC (Belgian Olympic and Interfederal Committee)** and with respect to the **Special Olympics** (mentally handicapped) and **Paralympics** (physically handicapped).

The Fund also finances an **Olympic Chair Henri de Baillet Latour - Jacques Rogge at the universities UGent and UCL**.

The Fund also demonstrates its concern for the environment and for sustainable development through the support of various initiatives in this field. It awards an **Environment Prize** to a private company manager for an ecological land management project in Belgium. It has also teamed up with the International Polar Foundation through the award of scientific research grants for the study of climate change, partly at the Princess Elisabeth Station, the **Antarctica InBev-Baillet Latour Fellowship Award**, as well as the funding of the scientific equipment for the station.

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