

Fundación Occident awards Andreea Ciudin and María Mittelbrunn for their research in food, nutrition and health

- The sixth edition of the **Jesús Serra Research Awards**, which acknowledges the careers of young scientists, has increased its prize this year to 50,000 euros for each category.
- **María Mittelbrunn**, tenured scientist at the Spanish National Research Council (CSIC) and director of the Immunometabolism and Inflammation Laboratory at the Severo Ochoa Molecular Biology Centre (CSIC-UAM), has been awarded for her research on **how to rejuvenate the immune system and delay the onset of age-related diseases**.
- **Andreea Ciudin**, researcher at the Vall d'Hebron Research Institute (VHIR), has been recognised for her **research into the artificial intelligence assessment of key factors in obesity**, which will allow for customised nutritional therapies to treat the disease.

The researchers María Mittelbrunn and Andreea Ciudin have won the Jesús Serra Research Awards in the basic and clinical research categories, respectively. In this **year's sixth edition, the Prize has increased to 50,000 euros in each category**, with the aim of reinforcing Fundación Occident's support and commitment to research.

"Fundación Occident continues to invest in the talent of young researchers to promote progress in food, nutrition and health. Our aim is to provide these scientists with the visibility they deserve and, by supporting their work, to actively contribute to building a healthier society" says Laura Halpern, Vice-President of the Occident Foundation.

María Mittelbrunn, tenured scientist at the Spanish National Research Council (CSIC) and director of the Immunometabolism and Inflammation Laboratory at the Severo Ochoa Molecular Biology Centre (CSIC-UAM), has received the award for her research **on how to rejuvenate the immune system and delay the onset of age-related diseases**. Specifically, she studies T cells, key immune system components that with age suffer from changes in their metabolism that affect their functionality, causing chronic inflammation. The prize will allow María and her team to invest in new nutritional strategies that stimulate the metabolism of T-lymphocytes. The aim is to reverse the deterioration of T cells and immune systems, thus delaying age-related diseases.

About Fundación Occident

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"We are seeing that nutrition can reactivate or rejuvenate the impaired immune system and thus delay age-related diseases such as cancer, cardiovascular and neurodegenerative diseases," Mittelbrunn declares.

Furthermore, the prize awarded to **Andreea Ciudin**, senior researcher at the Diabetes and Metabolism Research Group at Vall d'Hebron Research Institute (VHIR) and Coordinator of the Obesity Unit of the Vall Hebron University Hospital, recognises her outstanding career in research, specifically **in the treatment of obesity, where she has always explored new ways of understanding the origins and development of this disease**. Specifically, with the support of the award, she can continue to work on the development of software with artificial intelligence that accurately assesses body composition and energy expenditure at rest, which will allow personalised nutritional therapies in obesity management. Thanks to the monetary award, the researcher and her team aim to identify phenotypes with different patterns of obesity in patients, extracting information from the use of artificial intelligence (AI) and computed tomography images. **This will open the door to an integrated approach to obesity, which includes personalised nutritional therapies**, to improve adherence to early treatment and thus prevent the appearance of comorbidities associated with obesity.

It should be taken into account that these comorbidities, such as type 2 diabetes, advanced liver disease and cardiovascular diseases, cause a substantial cost to the NHS.

"Obesity is a disease that affects many people and has a wide range of factors that affect its development. This is why research is being undertaken from different angles. In our case, we use artificial intelligence to better understand its patterns and thus be able to approach it with a comprehensive and personalised treatments", says Ciudin.

Jesús Serra Research Awards Ceremony

The awards **ceremony will take place at 7:00pm on Wednesday, 20 November, at the Beatriz Auditorium in Madrid**. The presenter Jorge Fernández will be the master of ceremonies for the third year. The event can be followed online on the Fundación Occident YouTube channel.

In addition, with the aim of creating spaces for interaction between research on food, nutrition and health and its beneficiaries, **the workshop "Can obesity be prevented?" will also be held on 20 November**. As part of the celebration of World Children's Day, the event will focus on childhood

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obesity. The workshop, which will be held prior to the ceremony in the same venue at 17:00, will be attended by Andreea Ciudin as a guest researcher, among other speakers.

About the Jesús Serra Research Awards

The Fundación Jesús Serra Research Awards are the **first in Spain to focus on research in the fields of nutrition, diet and health** with a view to supporting young scientists carrying out innovative projects with social impact in the area of basic and clinical research. The jury, chaired since its first edition by María Blasco, Director of the National Cancer Research Centre, every year selects two young researchers with outstanding contributions in this field.

The immediate objective: **to recognise the careers of young research scientists working in Spain and their contributions to research in nutrition, diet and health**. The 50,000 euros in prize money in each category (basic and clinical), is a recognition to their career and also supports their research work, allowing them to continue their research projects.

Since their launch in 2018, **the awards have acknowledged research projects** in areas such as nutrition, cancer, cardiology, diabetes, epidemiology, public health and molecular biology. This has highlighted the importance of interdisciplinary research and diet as key tools in the prevention of some of the most prevalent diseases.

In addition to **Blasco**, the jury also includes **Lina Badimon**, coordinator of the cardiovascular area and director of the ICCC programme of the Research Institute of the Hospital de la Santa Creu and Sant Pau in Barcelona; **Carlos Macaya**, Professor Emeritus of Cardiology at the Faculty of Medicine at the Complutense University of Madrid; **Pedro Mata**, Chairman and founder of the Spanish Foundation of Familial Hypercholesterolaemia; **Mercedes Rincón**, Professor at the Department of Immunology and Microbiology at the University of Colorado School of Medicine and Co-Founder of the Mitotherapeutix startup, and this year, **Guadalupe Sabio**, director of the Organ Crosstalk in Metabolic Diseases Group at the Spanish National Cancer Research Center (CNIO).

The two winners of the current editions of these awards are included in this group of specialists, which in 2023 recognised **Manuel Irimia**, Research Professor at ICREA and Group Leader at the MELIS department at the Universidad Pompeu Fabra (UPF) in Barcelona, and **Maira Bes-Rastrollo**, Professor of Preventive Medicine and Public Health at the University of Navarra (UNAV).

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More information on these awards and the winners of previous editions on the website

<https://www.fundacionoccident.org/premios-investigacion>.

María Mittelbrunn, winner of the Jesús Serra Research Awards in the basic research category

María obtained her doctorate degree in Biomedicine, Biochemistry and Molecular Biology from the Autonomous University of Madrid (UAM) in 2006, and completed post-doctoral work at the National Centre for Cardiovascular Research (CNIC), the University of Oviedo, and at the Institut Curie in Paris, between 2007 and 2013. In 2015, she was principal investigator at Hospital 12 October. Since 2017, she has been the director of the Immunometabolism and Inflammation Laboratory at the Institute of Molecular Biology (CBM) in Madrid, and since 2021, she has been a tenured scientist at the Spanish National Research Council (CSIC).

Our immune system protects us from infections, pathogenic agents and diseases, such as cancer. However, as we age, it weakens and loses effectiveness. This process, called immunosenescence, also causes a chronic inflammation of the body, which increases the risk of diseases associated with age, such as cardiovascular conditions and neurodegenerative disorders.

Mittelbrunn and her research team study how to delay ageing by analysing the deterioration of the immune system that causes chronic inflammation. Specifically, she studies T cells, key immune system components that with age suffer from changes in their metabolism that affect their functionality, causing chronic inflammation. Thus, immune cell metabolism may act as a therapeutic target in delaying aging and age-associated diseases.

According to preliminary studies with older mice, certain dietary supplements can reverse multiple signs of immunosenescence. The Jesús Serra research Award will allow María and her team to continue their research in new nutritional strategies that stimulate T-cell metabolism, leading to the rejuvenation of the immune system, the control of chronic inflammation and delaying the onset of age-related diseases.

Andreea Ciudin, winner of the Fundación Jesús Serra Research Award in the clinical research category

Andreea trained as a MIR in Endocrinology and Nutrition at the Vall d'Hebron University Hospital between 2007 and 2011, and in 2017, she obtained a doctorate in Medicine “Excelente Cum Laude”.

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She holds Masters degrees in clinical management, leadership and tutoring of residents. She currently coordinates the Obesity Unit of the Vall Hebron University Hospital and is senior researcher of the Diabetes and Metabolism Research Group in Vall Hebron Institut de Recerca (VHIR), combining teaching, health care and research. Andreea has also held the post of Associated Professor of Physiology at the Universitat Autònoma de Barcelona since 2019, she is the treasurer of the Spanish Society for the Study of Obesity (SEEDO), and co-chair of the Obesity Management Working Group de la European Association for the Study of Obesity (EASO).

According to the WHO, one in eight people are now living with obesity, a medical condition in which excess body fat has accumulated and which can impair health. Obesity is a complex disease to treat, and factors such as liver steatoses and resting energy expenditure are key to determining successful obesity management, understanding the evolution of the disease and establishing a long-term treatment of the disease. This disease has been traditionally classified based on body mass index (BMI), the measure of body fat based on height and weight. However, this classification does not take into account the body composition or all these key factors for its comprehensive management.

In the last 3 years, Ciudin and her group have developed and validated a software for patients with obesity that allows an accurate assessment of body composition and resting metabolic rate from CT images. The results obtained have been very positive compared to other assessment methods. Thanks to the monetary prize, Andreea Ciudin and her team of researchers aim to identify phenotypes with different patterns of obesity in patients by extracting information with the use of artificial intelligence and computed tomography images. This will open the door to an integrated approach to obesity and personalised nutritional therapies for early prevention, and to prevent the appearance of comorbidities associated with obesity, such as type-2 diabetes, advanced liver disease and cardiovascular diseases, which represent a substantial cost for the national health system.

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