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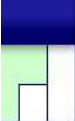
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Corn, Oats, Cherries And Red Wine's High Melatonin Content Can Help Delay Ageing

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The Spanish Ageing Research Network (Red Nacional de Investigación del Envejecimiento), funded by Carlos III Health Institute and headed by professor Darío Acuña Castroviejo, from the University of Granada (Universidad de Granada [<http://www.ugr.es>]), is very near to achieving one of today's Science greatest goals: allowing humans to age in the best possible health conditions.

As well as from the UGR [<http://www.ugr.es>], researchers from the Spanish universities of Seville, Oviedo, Saragossa, Barcelona and Reus also took part in this study, concluding that the consumption of melatonin a natural substance produced in small amounts by human beings and present in many types of food delays the oxidative damage and inflammatory processes typical of the old age. Melatonin can be found in small amounts in some fruits and vegetables, like onions, cherries and bananas, and in cereals like corn, oats and rice, as well as in some aromatic plants, such as mint, lemon verbena, sage or thyme, and in red wine.

UGR participation in this study was leaded by professor Darío Acuña Castroviejo, member of the Institute of Biotechnology and lecturer at this University's department of Physiology. Professor Acuña Castroviejo also coordinates the Spanish Ageing Research Network. Both normal and genetically-modified mice, with an accelerated cell ageing, were analysed. "We proved", says professor Acuña Castroviejo, "that the first signs of ageing in animal tissues start at the age of five months [in mice] equivalent to 30 human years of age due to an increase in free radicals (oxygen and nitrogen), which cause an inflammatory reaction."

The UGR researcher points out that such oxidative stress also has effects in animals' blood, as blood cells have been proven to be "more fragile with the years and, therefore, their cell membranes become easier to break".

Use in mice

The authors of this innovative finding administered small amounts of melatonin to mice and observed that not only did this substance neutralize the oxidative stress and the inflammatory process caused by ageing, but it also delayed its effects, thus increasing longevity. In particular, the University of Granada's goal was to analyse the mitochondrial function in mice and check their mitochondrial capacity to produce ATP adenosine triphosphate a molecule whose mission is to store the energy every cell needs to carry out its functions.

Professor Acuña Castroviejo highlights that chronic administration of melatonin in animals from the moment they stop producing this substance five months of age in mice helps counteract all age-related processes. Therefore, daily melatonin intake in humans from the age of 30 or 40 could prevent or, at least, delay illnesses related to ageing, free radicals and inflammatory processes, such as many neurodegenerative disorders (e.g. Parkinson's disease) and complications linked to other illnesses, like diabetes.

The researcher is confident that the Spanish Ministry of Health will soon legalise the use of melatonin since, being a substance naturally produced by the body, it cannot be patented and the drug industry would not make much profit out of its artificial production. However, "while the substance becomes legalised, humans should try to increase melatonin consumption through food", recommends professor Acuña Castroviejo.

The results of this study have been published in some of the world's most prestigious medical journals, such as Free Radical Research, Experimental Gerontology, Journal of Pineal Research and Frontiers in Bioscience.

About The UNIVERSITY OF GRANADA

The University of Granada (UGR) was founded in 1531, under the initiative of Emperor Charles V. In this way, Granada asserted its vocation as a university city, open to different cultures, peoples and beliefs, continuing the tradition of the Arab University of Yusuf I (Madrassa, 14th century). With 475 years of tradition, the University of Granada has been an exceptional witness to history, as its influence in the city's social and cultural environment grew until it was to become, over a period of almost five centuries, an intellectual and cultural nucleus in Southern Spain in its own right. The University of Granada has also made a strong commitment to its future by fostering the development of quality research, whose guiding criteria are to stress traditional lines of research, to support investigation which although less developed may prove useful to a changing society and to forge bonds with firms and institutions. As a result of its growth in scientific production, the UGR is among the top Spanish universities. More than 400 research groups are working in all different areas of knowledge, in collaboration with both national and international research groups. The University of Granada offers to 81,600 students 10 per cent of which are foreign students 75 degree courses distributed in 28 centres. The UGR is the leading European destination for Erasmus/Socrates students, the most important Spanish university in graduation prizes, the third in the number of doctoral courses with the Distinction of Quality granted by the Ministry of Education and Science and the sixth in scientific production.

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