NU-AGE Special edition
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A parallel randomized trial on the effect of a healthful diet on inflammageingand its consequences in European elderly people: Design of the NU-AGE dietary intervention study. *A.M. Berendsen / WU*
Iron status in the elderly. *S. Fairweather-Tait / UEA*
Micronutrient-gene interactions related to inflammatory /immune response and antioxidant activity in ageing and inflammation:A systematic review. *E. Mocchegiani / invited*
Water - loss dehydration and aging. *L. Hooper / UEA*
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Maintenance of a healthy trajectory of the intestinal microbiome during aging: a dietary approach. *M. Candela / UNIBO*
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Musculoskeletal system in the old age and the demand for healthy ageing biomarkers. *S. Collino / NESTEC*
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MECHANISMS OF AGING AND DEVELOPMENT

NU-AGE PROJECT SPECIAL ISSUE

SEVENTH FRAMEWORK PROGRAMME

The challenge

In the European Union, the proportion of older people has increased in recent decades and it is predicted to increase from 25 to 40% by 2030. Together with climate changes and the increase of energy demand the aging of the population is becoming a major challenge than humanity is going to cope with.

Therefore, population aging can reasonably be described as both an outcome of, and a challenge for, European health systems. This demographic explosion emphasizes the critical importance of identifying strategies able to counteract or delay aging and the onset of age-related diseases and disabilities, and thus contribute to increasing the number of elderly European citizens in good health, and reducing age-related medical and social cost.

The NU-AGE project

The NU-AGE coordinated from University of Bologna, **targets nutrition as a major modulator of inflammaging and other agerelated functional outcomes**.

The underlying hypothesis of NUAGE is that a whole diet approach will have greater beneficial effect on overall health than single nutrient interventions.

Simultaneous changes in a select range of dietary constituents, with a focus on reducing chronic low grade inflammation, will ensure that the subtle effects observed from single nutrients will act in concert to optimize healthy aging.

Thus, **the NU-AGE consortium will comprehensively study the effect of a Mediterranean diet newly designed according to the nutritional needs of people over 65 years of age, the so-called ''NU-AGE diet''.**

The study

A total of 1250 non-frail and pre-frail volunteers of 65–79 years old, equally subdivided into males and females, will be characterized before and after the dietary intervention by measuring a limited number of robust parameters capable of providing reliable data about different domains/subsystems. A sub-group of subjects will be further characterized by advanced techniques and high-throughput ''omics'' in order to identify cellular and molecular targets and mechanisms responsible for the effects of the whole diet intervention.

This approach will allow an evaluation of the whole-organism response by a systems biology approach, considering several tissues and organs/systems as a functional network instead of assessing the single tissue and organ responses separately.