

# Euro Health Care and Fitness Summit

September 01-03, 2015 Valencia, Spain

## Targeting the obesity-cancer link via adipose tissue inflammation

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The rates of obesity are rapidly rising worldwide. Obesity is now a leading cause of cancer incidence and mortality. One in five female and one in seven male cancer deaths are attributable to obesity. My research program is focused on the development of precision medicine-driven interventions to prevent obesity-related cancers and improve outcomes. Our team was the first to demonstrate that inflammation of breast white adipose tissue (WAT) occurs in association with obesity and is detected by the presence of crown-like structures (CLS). Consisting of a dead or dying adipocyte surrounded by macrophages, CLS are associated with increased levels of proinflammatory mediators and locally enhanced estrogen signaling, which directly promotes tumorigenesis. Additionally, we have discovered WAT inflammation at other organ sites, including the tongue and prostate, suggesting that adipose inflammation and its systemic effects have a role in the development of several cancers. Alarming, we have also identified WAT inflammation and its associated metabolic alterations in one third of lean women. It is particularly important to develop tools that identify this cohort of at-risk individuals, given their healthy appearance. The identification of these biologic processes underlying the obesity-cancer link has allowed us to begin developing novel and exciting interventions to combat the ill effects of obesity. This new mechanism-based understanding of the ways by which obesity promotes cancer is poised to transform the way we prevent and treat cancer.

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## Functional and physical retraining for elderly women

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Ageing is a natural process, progressive and can be disabling. Between 2000 and 2050, the proportion of the world's population over 60 years will increase from about 841 million today, up to 2 billion. Age-related global social expenditures go from an average of under 19% of Gross Domestic product in 2000 to almost 26% of GDP by 2050. Protecting this special population from disease and bad health conditions is one key to holding down health and social costs. Functional and physical retraining have been indicated as a successful way to minimize its impact and especially to maintain the functional capacity of elderly women for a longer period of time. The functional and physical capabilities are important markers of successful aging and a better quality of life. Thus, the maintenance and the preservation of these abilities to perform activities of daily living are essential points to prolong independence, providing opportunities for a healthier life for these elderly women. However, the prescription of a permanent routine functional and physical training are essential for the aging of these elderly women. Thus, this work suggests some exercises for practical experience and scientific evidence showing great results.

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