

International Conference on

# Cancer Diagnosis & Treatment

August 02-03, 2018 | Oslo, Norway

## Dietary restriction and intermittent fasting in cancer and diseases



**Francesco Spelta**

University of Verona, Italy

Several epidemiological surveys have highlighted a link between diet and cancer risk. New diet strategies have been proposed so far, to slow down cancer growth or to reduce chemotherapy side effects, i.e. dietary restriction and different fasting regimens. A substantial protein and calorie restriction may directly inhibit tumor cell growth via the inhibition of the IGF-1- mTORC1 axis, in a xenograft mouse model of breast cancer, while a moderate protein restriction may induce an anticancer response increasing IFN $\gamma$  expression (via immunomodulation of T-cells), leading to an increased “immunosurveillance” in the tumor microenvironment in mice. Moreover, downstream of different nutrient-sensitive pathways are regulated in an opposite way by fasting and fasting mimicking diets in normal and cancer cells, resulting in protection against chemotherapy of the normal cells and improving the inhibition of tumor growth by chemotherapy itself. Although randomized clinical studies have been conducted on a limited number of patients, the results of some pilot studies are supporting the efficacy of restricted diets in cancer therapy. These findings are in accordance with the overall health benefits provided by dietary restriction regimens in the cardiovascular system and in slowing the aging process, one of the most important risk factors for cancer development.

### Biography

Francesco Spelta is an Internal Medicine Specialist and a PhD student at the University of Verona, Italy (PhD program in Biomedical, Clinical and Experimental Sciences). He has spent more than one year at Washington University in St. Louis, USA as a Visiting Researcher, working with Dr. Luigi Fontana's group on clinical trials focused on the role of calorie restriction and intermittent fasting in longevity and health. His main interests are related to nutrition in different conditions, particularly regarding cardio-pulmonary diseases. Recently, he has joined the University of Oslo for a short term internship in Prof. Alessandro Cataliotti lab, working on heart failure. His research interest is nutrition in disease prevention.

Francesco.spelta@univr.it

### Notes: