Curriculum Vitae

Luana Toniolo **graduated in Biological Sciences in 1991**. In 1993 she obtained the professional qualification. In 1997 she obtained **a PhD in Environmental Medicine at the University of Padua**.

After the PhD she worked at the Interdepartmental Service Center C.U.G.A.S. of the University of Padua where she studied the issues related to scanning electron microscopy, the use of atomic absorption and rheometry on biological and non-biological samples. She worked as a biologist at the Operative Unit-Transfusion and Immunohematology Service-Hospital of Treviso following a regional project aimed at setting up a Bioreactor for the development of stem cells.

From 2001 to 2006 she worked at the Department of Human Anatomy and Physiology with some fixed-term contracts. In addition to the research activity, she had the opportunity to participate, as a teacher at the School of Physiology and Biophysics 2004 entitled "Heterogeneity and plasticity of skeletal muscle. Physiological and molecular methods for the study of the heterogeneity and plasticity of skeletal muscle "organized by the Italian Society of Physiology. Over the years she has gained technical-scientific skills related to the study of skeletal muscle. In particular, she has developed analytical techniques of both mono and two-dimensional electrophoresis and immunoblotting. she also specialized in preparation and manipulation of single skinned cells and ex-vivo muscle preparations for the study of the physiological characteristics of mammalian skeletal muscle.

From 2006 she has become a university Researcher and she continues to work **as Associate Professor** in the ***muscle physiology and biophysics laboratory*** of the Department of Biomedical Sciences as a member of the "Muscle Contractility and Plasticity" research group.

The research activity is centered on muscle physiology, in particular on the cellular and molecular aspects of the diversity between skeletal muscle fibers.

She has been interested in various problems related to muscle tissue, in particular the physiological responses of skeletal muscle and its adaptations to stimuli such as training, immobilization, denervation or its physiological changes such as aging. The spectrum of responses of the skeletal muscle ranges from the induction of hypertrophy to an opposite condition of atrophy. The aim of our group's research is to try to clarify the mechanisms and signaling pathways responsible for the physiological adaptations of the muscle according to the different conditions to which it is subjected.

The experimental work carried out is focused on **two main research themes:**

-***Muscle contractility of skeletal muscle fibres and their molecular basis***: analysis of fiber-type remodeling and fibres ability to undergo adaptive changes (switch in fiber types), in response to physical activity (exercise), inactivity, disuse, disease, aging. Description of molecular composition, functional and biochemical properties of single fibres with particular attention to the myo-fibrillar apparatus and the sarcoplasmic reticulum.

-***Muscle Contractility and Neuromuscular Plasticity***:

a) Response to use (physical activity) disuse, ageing and disease Specific focus is given to the changes in muscle fibre innervation and neuromuscular junction (NMJ) integrity with ageing (sarcopenia) and with inactivity (spaceflight, bed rest, step reduction), and their relation with alterations in muscle morphology and neuromuscular function.

b) Role of skeletal muscle structural remodeling (from whole muscle to the sarcomere) in the loss of muscle force due ageing and disuse and in response to exercise countermeasures

Affiliation to scientific societies:

Since 2007: IIM Interuniversity Institute of Myology

Since 2009: CirMYO

Since 2011 SIF member: Italian Society of Physiology

Since 2018 Enrolled in REPRISE (register of scientific experts established by MIUR) for the basic research section.

Publications:

The scientific production is ***75 publications*** in journals indexed with the following bibliometric parameters

N of citations: over 3061

h-index 30

Editorial Activities:

I carry out reviewing activities for several scientific journals and the reviewing activity is certified on the PUBLONS website.

I worked as GUEST EDITOR for:

Special Issue "Nutrition, Diet and Healthy Aging" for **Nutrients magazine**.
https://www.mdpi.com/journal/nutrients/special_issues/nutrition_diet_and_healthy_aging

Research Topic: "The Fiber Profile of Skeletal Muscles as a Fingerprint of Muscle Quality" for **FRONTIERS** (*https://www.frontiersin.org/research-topics/17072/the-fiber-profile-of-skeletal-muscles-as-a-fingerprint-of-muscle-quality.)*

Five recent publications

1: Toniolo L, Gazzin S, Rosso N, Giraudi P, Bonazza D, Concato M, Zanconati F, Tiribelli C, Giacomello E. Gender Differences in the Impact of a High-Fat, High-Sugar Diet in Skeletal Muscles of Young Female and Male Mice. Nutrients. 2024

2: Toniolo L, Concato M, Giacomello E. Resveratrol, a Multitasking Molecule That Improves Skeletal Muscle Health. Nutrients. 2023

3: Toniolo L, Sirago G, Giacomello E. Experimental models for ageing research. Histol Histopathol. 2023

4: Toniolo L, Sirago G, Fiotti N, Giacomello E. Golgi Complex form and Function:A Potential Hub Role Also in Skeletal Muscle Pathologies? Int J Mol Sci. 2022

5: Sirago G, Vaccari F, Lazzer S, D'Amuri A, Sanz JM, Narici MV, Reggiani C, Passaro A, Toniolo L. Skeletal Muscle Mitochondrial and Perilipin Content in aCohort of Obese Subjects Undergoing Moderate and High Intensity Training.Metabolites. 2022