Curriculum Vitae

PATRIZIA D'AMELIO

Nationality Italian

Place/date of birth Turin, Italy 3rd May 1974

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Current/past positions

2020	**Associate Professor**, Geriatric and Geriatric Rehabilitation Unit, Centre Hospitalier Universitaire Vaoudoise (CHUV), University of Lausanne.
2012-2019	**Assistant Professor**, Department of Medical Science, University of Turin, Italy
2010-2012	**Assistant Professor,** Department of Surgical and Medical Disciplines, University of Turin, Italy
2007-2010	**Post-Doctoral Research** Scientist, Department of Internal Medicine, University of Turin, Italy

Education

2004-2007	***Ph.D***. in Physiopathology (University of Turin, Italy)
1999-2004	***Specialization in Internal Medicine*** (University of Turin, Italy)
1993-1999	Degree in ***Medicine and Surgery*** (University of Turin, Italy)

Institutional Responsibilities

Clinical activity: in charge of the Acute Geriatric Care Unit at CHUV; the unit consist of 28 beds for acute patients and includes supervision of 5 MD.

Research activity: in charge of the lab of aging and age related disease at CHUV.

Teaching activity: Associated professor at the University of Lausanne, in charge of the post-graduation teaching to geriatricians

Awards

11 Young Investigator Awards between 1999 and 2015. Best presentation award for the start-up Novaicos iSrl obtained on 20th January 2017.

Approved research project (last 10 years)

2019-2024	WP5 leader with NOVAICOS srl in the project **"Active aGeIng and Osteoporosis: The next challenge for smarT nanobIOmaterials and 3D technologies" (GIOTTO)** Prof. C. Vitale-Brovarone PI (5.650 Mio Euros)
2017-2020	Partner in the project "**Role of the ICOS/ICOSL system in Frailty Syndrome**" (380000 Euros)

2014-2016 Principal Investigator in the project: "**Autoreactive T cells in peripheral blood of patients affected by severe form of osteoporosis**". (60000 Euros)

2012-2014 Principal Investigator in the project: "**The role of T cells in postmenopausal bone loss: focus on autoreactive T cells in peripheral blood of patients affected by severe form of osteoporosis**". (50000 Euros)

2008-2010 Principal Investigator in the project: "**Osteocytes and bone structure in osteoporotic fractures**". (40000 Euros)

Supervision activities

MD students: Luigia Fratangelo, Luca Barbarossa, Marco Ravazzoli, Giorgia Fornelli, Emanuella Strata, Eleonora Bonfanti, Becchero Paolo, Laura Schiara, Francesco Cattaneo. **Nurses students:** Giorgio Fiorenza, Monica Biglia, Alice Barberis **Post-graduate students** specialist in geriatrics and internal medicine: Cristina Tamone, Elena Spertino, Elisa Calvi, Lara Cordiano **Biomedical engineers**: Stefano Brianza, Marco Cerrato, Michele Petraroli **PhD**: Ilaria Buondonno, Elisa Centini, Andrea Palamenghi **Psychologist:** Lorenza Miss, Agnese Borello, Emma Calzoni.

Teaching

2006-2019 Course on bone metastases physiopathology at "master for prostatic oncology" University of Torino

2008-2019 Courses on bone diseases and bone bone metabolism for MD students University of Torino (Italy).

2008-2019 Courses on bone diseases and bone bone metabolism for post graduate MD (geriatrics) University of Torino (Italy)

2011-2019 Courses on geriatrics for nurses (coordinator of the course) University of Torino (Italy)

2011 -2019 Course on research methodology at master for ulcers treatment University of Torino (Italy)

2016 -2019 Courses on geriatrics for psychologists University of Torino (Italy)

Since 2020 Post-graduation teaching to geriatricians University of Lausanne (Switzerland)

Editorial activity

Associated Editor of *Clinical Reviews in Bone and Mineral Metabolism*, guest editor of a special issue on osteoimmunology.

Member of the Editorial Board of *World Journal of Orthopaedics*, *Advances in Medicine, International Journal of Orthopaedics*, *International Journal of Endocrinology*

Member of the Editorial Board of *Frontiers in Endocrinology*, guest editor of a special issue on osteoimmunology (2015-2019) and of a special issue on "Bone as endocrine target and organs" (2017)

Guest editor of a special issue on "Calcium, Vitamin D and Aging" for *Nutrients*

Active member of the following societies:

SIOMMS (Società Italiana Osteoporosi e Malattie Metaboliche dello Scheletro), SIGG (Società Italiana di Geriatria e Gerontologia), ECTS (European Society for Bone and Mineral Metabolism), Accademia di Medicina di Torino.

Major scientific achievements

Patrizia D'Amelio (PD) has a long lasting experience in translational research in the field of aging related diseases and on inflamm-aging, she founded more than 10 years ago the aging and bone diseases laboratory in Torino (Italy), the lab is dedicated to translational studies. Thanks to her experience as geriatrician, PD developed several studies on the role of immune system deregulation on age-related diseases and, in particular, in the field of osteimmunolgy. Within this field, she published seminal papers demonstrating, for the first time in literature, the phenomenon of spontaneous osteoclastogenesis [1] in relation with disease [2,3] and treatment [4–6]. She demonstrated how T cells hyperactivation play a key role in the control of bone metabolism in osteoporosis [7] and other diseases [8]. She also demonstrated how the effect of PTH is mediated through T cells [9,10].

PD's lab has ongoing research in the field of frailty and its relation with inflammaging ("Role of the ICOS/ICOSL system in Frailty Syndrome" founded by Cariplo foundation with 380000 Euros). Thanks to PD research on mechanisms of aging it has been possible to demonstrate the role of mitochondrial activity in muscle and brain performance (Buondonno I. et al, Clin Nutr. 2019).

Thanks to its translational approach PD developed a particular skill in multidisciplinary collaboration with different professional figures this multidisciplinary collaboration leads to the foundation of NOVAICOS srl, an academic spin-off that recently obtained founding as partner in the project "Active aGeIng and Osteoporosis: The next challenge for smarT nanobIOmaterials and 3D technologies" (GIOTTO) (founded by the EU 5.650 Mio Euros). Within GIOTTO, PD is the WP5 leader. PD has a strong expertise in conducting clinical and translational research as demonstrated by the found obtained and by her international collaborations.

-Research Performance:

82 publications in refereed international indexed journals with over 1600 citations, H index 22, 6 book chapters. Patent: Image analyses software (patent TO2006A00565 2006).

References.

1. D'Amelio, P. *et al.* Spontaneous osteoclast formation from peripheral blood mononuclear cells in postmenopausal osteoporosis. *FASEB J.* **19**, 410–412 (2005).
2. Roato, I. *et al.* Osteoclastogenesis in peripheral blood mononuclear cell cultures of periprosthetic osteolysis patients and the phenotype of T cells localized in periprosthetic tissues. *Biomaterials* **31**, 7519–7525 (2010).
3. Sassi, F. *et al.* Type 2 diabetes affects bone cells precursors and bone turnover. *BMC Endocr Disord* **18**, 55 (2018).
4. D'Amelio, P. *et al.* Risedronate reduces osteoclast precursors and cytokine production in postmenopausal osteoporotic women. *J. Bone Miner. Res.* **23**, 373–379 (2008).
5. D'Amelio, P. *et al.* Alendronate reduces osteoclast precursors in osteoporosis. *Osteoporos Int* **21**, 1741–1750 (2010).
6. D'Amelio, P. *et al.* The role of circulating bone cell precursors in fracture healing. *Calcif. Tissue Int.* **86**, 463–469 (2010).
7. D'Amelio, P. *et al.* Estrogen deficiency increases osteoclastogenesis up-regulating T cells activity: a key mechanism in osteoporosis. *Bone* **43**, 92–100 (2008).
8. Li, J.-Y. *et al.* IL-17A Is Increased in Humans with Primary Hyperparathyroidism and Mediates PTH-Induced Bone Loss in Mice. *Cell Metab.* **22**, 799–810 (2015).
9. Yu, M. *et al.* Regulatory T cells are expanded by Teriparatide treatment in humans and mediate intermittent PTH-induced bone anabolism in mice. *EMBO Rep.* **19**, 156–171 (2018).
10. D'Amelio, P. *et al.* Treatment with intermittent PTH increases Wnt10b production by T cells in osteoporotic patients. *Osteoporos Int* **26**, 2785–2791 (2015).