



Prof. Dr. med. Antonio Malgaroli

Specialist in Psychiatry and Psychotherapy, FMH member

Languages

EN,IT

Work Experience

- since 2020 Head of Field Project Master in Cognitive Psychology and H.C., USI - UniSR, Sant'Anna Clinic
- since 2017 Director of the Centre for the Study of Behaviour (International Center for Behavioral Neuroscience and Communication) University Vita-Salute San Raffaele, Milan, IT
- since 2016 Clinical Activity as Neuropsychiatrist, VilleTurro San Raffaele Hospital, San Donato Group, Milan, IT
- since 2000 Full Professor of Human Physiology, University Vita-Salute San Raffaele, Milan, IT
- 2017-2019 Clinical activity as Psychiatrist, The Tourette's Centre, IRCCS Galeazzi Hospital, San Donato group, Milan
- 1993-2000 Head of Unit of Neurobiology of Memory, San Raffaele Scientific Institute
- 1989-1992 Postdoctoral fellow, Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA, US
- 1985-1989 Clinical fellow in Psychiatry and Psychotherapy, Postgraduate Degree in Psychiatry, Department of Psychiatry, Faculty of Medicine, University of Milan, Milan, Italy
- 1982-1985 Research Fellow, Department of Pharmacology, Faculty of Medicine, University of Milan, Milan

Education

- 1991 University of Milan, Specialisation Diploma in Psychiatry and Psychotherapy
- 1985 University of Milan, Degree in Medicine and Surgery
- 1985 Licence to practise medicine and surgery

Memberships

- since 2016 Member of Scientific Board, Italian Tourette Syndrome Association (AIST)

Publications

Ferro M, Lamanna J, Spadini S, Nespoli A, Sulpizio S, Malgaroli A. Synaptic plasticity mechanisms behind TMS efficacy: insights from its application to animal models. J Neural Transm (Vienna). 2022 Jan;129(1):25-36. doi: 10.1007/s00702-021-02436-7.

Spadini S, Ferro M, Lamanna J, Malgaroli A. Activity-based anorexia animal model: a review of the main neurobiological findings. *J Eat Disord*. 2021 Oct 2;9(1):123. doi: 10.1186/s40337-021-00481-x

Spadini S, Racchetti G, Adiletta A, Lamanna J, Moro AS, Ferro M, Zimarino V, Malgaroli A. A novel integrated approach to estimate the mitochondrial content of neuronal cells and brain tissues. *J Neurosci Methods*. 2021 Nov 1;363:109351. doi: 10.1016/j.jneumeth.2021.109351

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Lamanna J, Isotti F, Ferro M, Racchetti G, Anchora L, Rucco D, Malgaroli A. Facilitation of dopamine-dependent long-term potentiation in the medial prefrontal cortex of male rats follows the behavioral effects of stress. *J Neurosci Res*. 2021 Feb;99(2):662-678. doi: 10.1002/jnr.24732

Jacopo Lamanna J, et al. Facilitation of dopamine-dependent long-term potentiation in the medial prefrontal cortex of male rats follows the behavioral effects of stress. *J Neuroscience Res*. In press

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Briguglio M, Dell'Osso B, Panzica G, Malgaroli A, Banfi G, Zanaboni Dina C, Galentino R, Porta M. (2018) Dietary Neurotransmitters: A Narrative Review on Current Knowledge. *Nutrients*. 10;10(5). pii: E591. doi: 10.3390/nu10050591.

M.Ferro, J. Lamanna, M. Ripamonti, G. Racchetti, A. Arena, S. Spadini, G. Montesano, R. Cortese, V.Zimarino & A. Malgaroli. (2017) Functional mapping of brain synapses by an enriching activity-marker. *Nature Communications*, Oct 31;8(1):1229. doi: 10.1038/s41467-017-01335-4.

A.Malgaroli The complexity of man and psychosomatics. à jour! *Psychotherapie Berufsentwicklung*, 4(2):71-74 - November 2018, Psychosozial Verlag doi.org/10.30820/8245.31

Briguglio M, Dell'Osso B, Panzica G, Malgaroli A, Banfi G, Zanaboni Dina C, Galentino R, Porta M. Dietary Neurotransmitters: A Narrative Review on Current Knowledge. *Nutrients*. 2018 May 10;10(5).

Putzu, S. Valtorta, G. Di Grigoli, M. Haenggi, A. Malgaroli, M. Gemma, G. Landoni, L. Beretta, RM Moresco (2017) Regional differences in cerebral glucose metabolism after cardiac arrest and resuscitation in rats using [18F]FDG positron emission tomography and autoradiography. *Neurocritical Care*, Sep 5.

C. Schulte, M. Ripamonti, E. Maffioli, M.A. Cappelluti, S. Nonnis, L. Puricelli, J. Lamanna, C. Piazzoni, A. Podestà, C. Lenardi, G. Tedeschi*, A. Malgaroli* & P. Milani* (2016) Scale invariant disordered nanotopography promotes hippocampal neuron development and maturation with involvement of mechanotransductive pathway. *Frontiers Cell Neuroscience*. 10:267. eCollection 2016. (* shared last authors)

Arena A, Lamanna J, Gemma M, Ripamonti M, Ravasio G, Zimarino V, De Vitis A, Beretta L, & Malgaroli A (2017) A linear transformation of the encoding mechanism for light-intensity underlies paradoxical enhancement of cortical visual responses by sevoflurane. *J Physiology J Physiol.* Jan 1;595(1):321-339

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Lamanna J, Signorini MG, Cerutti S, Malgaroli A. (2015) A pre-docking source for the power-law behavior of spontaneous quantal release: application to the analysis of LTP. *Front Cell Neurosci.* 9: 44, 1-13.

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Lamanna J, Malgaroli A, Cerutti S, Signorini MG. (2012) Detection of fractal behaviour in temporal series of synaptic quantal release events: a feasibility study. *Comput Intell Neurosci.* 704673: 1-9

Lamanna J, Esposti F, Malgaroli A, Signorini MG. (2011) Fractal behavior of spontaneous neurotransmitter release: from single-synapse to whole-cell recordings. *Conf Proc IEEE Eng Med Biol Soc.*;2011:3346-3349.

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Fanelli A, Titapiccolo JI, Esposti F, Ripamonti M, Malgaroli A, Signorini MG. (2011) Novel image processing methods for the analysis of calcium dynamics in glial cells. *IEEE Trans Biomed Eng.* 58(9):2640-7.

Croccolo F, Quintini A, Barni R, Ripamonti M, Malgaroli A, Riccardi C (2009). H-mode inductive coupling plasma for PVC surface treatment. *The European Physical Journal. d, atomic, molecular and optical physics*, vol. 54, p. 477-480.

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Camerini S, Polci ML, Restuccia U, Usuelli V, Malgaroli A, Bachi A. (2007) A novel approach to identify proteins modified by nitric oxide: the HIS-TAG switch method. *J Proteome Res*. 6:3224-31.

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Malgaroli A, Vallar L, Zimarino V. (2006) Links Protein homeostasis in neurons and its pathological alterations. *Current Opinion Neurobiology* 16:270-4.

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Abenavoli A, Forti L & Malgaroli A (2000) Mechanisms of spontaneous miniature activity at CA3-CA1 synapses: evidence for a divergence from a random Poisson process. *Biology Bull*. 199:184-6.

Malgaroli, A.(1999) Silent synapses: I can't hear you! Could you please speak aloud. *Nature Neuroscience*, 2: 3-5.

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- Malgaroli, A., Fesce R. & Meldolesi, J. (1990) Spontaneous Ca^{2+} fluctuations of rat chromaffin cells involve a caffeine- and ryanodine-sensitive intracellular Ca^{2+} store, apparently insensitive to inositol-1, 4, 5-trisphosphate. *J. Biol. Chem.*, 265: 3005-3008.
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- Malgaroli, A., Meldolesi, J., Zamboni Zallone, A. & Teti, A. (1989) Control of cytosolic free Ca^{2+} in rat and chicken osteoclasts. The role of extracellular Ca^{2+} and calcitonin. *J. Biol. Chem.*, 264: 14342- 14347.
- Colonna, R., Tatone, C., Malgaroli, A., Eusebi, F., & Mangia, F. (1989) Effects of protein kinase C stimulation and free Ca^{2+} rise in mammalian egg activation. *Gamete Res*, October 1, 1989; 24(2): 171-83.
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Wanke, E., Ferroni, A., Malgaroli, A., Ambrosini, A., Pozzan T. & Meldolesi, J.(1987) Activation of a muscarinic receptor selectively inhibits a rapidly inactivated Ca²⁺ current in rat sympathetic neurons. *Proc. Natl. Acad. Sci. USA*, 84: 4313-4317.

Malgaroli, A., Vallar, L. RezaElahi, F., Pozzan,T., Spada, A. & Meldolesi, J. (1987). Dopamine inhibits cytosolic Ca²⁺ increases in ratlactotroph cells: evidence of a dual mechanism of action *J. Biol. Chem.*, 262: 13920-13927.

Malgaroli, A. , Milani, D., Meldolesi, J. & Pozzan, T.(1987) Fura-2 measurement of cytosolic free Ca²⁺ in monolayers and suspensions of various types of animal cells. *J. Cell Biol.*, 105: 2145-2155.

Pandiella, A., Malgaroli, A. Vicentini, L.M. &Meldolesi, J. (1986) Early raise of cytosolic Ca²⁺ induced by NGF in PC12 and Chromaffin cells. *FEBS Letters*, 208: 48-51.

Awards

1985-88: Recipient of the AIRC research fellowship

1988-89: Recipient of the Monte Tabor research fellowship

1988: DeVisart award

1989-91: Recipient of the G. Moruzzi FIDIA research fellowship

1991: Chemofux prize, University of Vienna (Co-Recipient with Anna Teti)

1998-2001: Human Frontier grant award

1999: Herbert W. Rand Award, MBL

2000: Frank Lillie Award, MBL

2000: Elected as a member of the Physiological Society London

2000: Elected as a member of EMBO

Research

Antonio Malgaroli has published more than one hundred publications in the fields of neurophysiology, neuroscience, psychology and psychiatry, 58 of these are peer-reviewed articles with about 3500 citations in total; he has an h-index of 26, g-index of 58 (source: Google Scholar). His work has been widely described in many textbooks and reviews in the field of physiology and neuroscience. With regard to his current research activity, his interests focus on the mechanisms of brain synaptic plasticity. In addition to maladaptive aspects, which lead to functional and/or anatomical abnormalities and are therefore involved in the genesis of many neuropsychiatric diseases, plasticity phenomena underlie many compensatory processes, such as those induced by therapies, not only pharmacological but also psychoanalytical and psychotherapeutic. In detail, the main research interests focus on four thematic areas:

1. The plasticity of neural networks and its cellular and molecular mechanisms. In this field, he has obtained important results in understanding the mechanisms of induction and expression of synaptic plasticity, both in the hippocampus and in the prefrontal cortex.
2. Development of innovative techniques for the functional study of synaptic circuits in vitro and in vivo. His achievements include the first technology for the electrical measurement of the activity of a single central synapse, and the first technology for the functional assessment of synaptic activity changes in a neural network in vitro. Recently, after several years of work, he developed the only method available today to record synaptic activity in vivo (GreenZip), a technique that is used for many of the questions in section 3, below.
3. The neurobiological mechanisms and clinical aspects of certain psychopathological conditions such as anxiety and stress, anorexia, Tourette's syndrome, understanding the mechanism of action of certain psychoactive drugs such as ketamine, which is used today for the treatment of major depression that is not responsive to other treatments.

Human clinical projects include: the study of OCD in Tourette Syndrome; ii) The implementation of TMS brain magnetic stimulation protocols to induce lasting plastic changes in brain circuits involved in certain psychiatric disorders (OCD, anorexia, depression, S. Tourette); The use of TMS to assess the involvement of certain brain areas in attentional and decision-making aspects and the effect of emotional states.

Accreditation

[Clinica Sant'Anna](#)

Specialties

[Psychiatry and psychotherapy](#)

Contact

Clinica Sant'Anna Via Sant'Anna 1, 6924, Sorengo

T + 41 91 985 13 53

amalgaroli@clnicasantanna.ch

[Download vCard](#)