

Department of Clinical Neuroscience
Division of Insurance Medicine

Curriculum Vitae – Alejandra Machado

Current position

- Research specialist, Division of Insurance Medicine, Department of Clinical Neuroscience, Karolinska Institutet, Stockholm (Sweden)

Previous positions

Research

- Cognitive Consultant at Mindmore AB (Stockholm, Sweden). 2018-2020
- Postdoc, Division of Clinical Geriatrics, Center for Alzheimer Research, Department of Neurobiology, Care Sciences and Society. Karolinska Institutet, Stockholm (Sweden) – 2016-2019 (part-time position since March 2018).
- PhD-candidate, Department of Psychobiology and Methodological science, Faculty of Psychology, University of La Laguna, Tenerife (Spain). 2010-2016.

Clinical

- Clinical neuropsychological assessment at the Clinical Neuropsychological Unit in the Faculty of Psychology, University of La Laguna, Tenerife (Spain). 2010-2014
- Neurofeedback training and clinical therapy for children and adolescents. For NeuroVitalia - Ataman Science Investigation, Tenerife (Spain). 2013
- Neuropsychological assessment and rehabilitation at private medical centre GENPSYCA and MAYEUTICA centre, Tenerife (Spain). 2008-2009
- Intern Clinical Neuropsychologist at Clinical Neuropsychological Unit and GENPSYCA centre, Tenerife (Spain). 2007-2008

Academic Exams

- PhD in Psychology, University of La Laguna, Tenerife (Spain). 2010-2016
 - Thesis title: "Cognitive changes and neuroanatomical correlates in Normal Aging: Influence of cardiovascular risk factors and depressive symptomatology" (defended on 05.02.2016, Tenerife, Spain).
- Master in Clinical and Health Psychology, University of La Laguna, Tenerife (Spain). 2011-2013, with an extensive internship in the Legal Medicine Institute of Santa Cruz de Tenerife (in Forensic Psychology field)

- Dissertation title: “Marlowe and Crowne Social Desirable Scale: personality, lying conduct and response distortions” (defended on 17.07.2013, Tenerife, Spain).
- Diploma of Advanced Studies in Biomedical and Clinical Research, University of La Laguna, Tenerife (Spain). 2007-2009
 - Dissertation title: “Prefrontal and premotor functions study in amnesic and non-amnesic multidomain MCI subtypes” (defended on 30.10.2009, Tenerife, Spain).
- Bachelor in Psychology, University of La Laguna, Tenerife (Spain). 2002-2007
 - Practicum in Neuropsychology.

Publications

Publications submitted and preprints

- **Machado A**, Murley C, Andersson K, Hillert J, Friberg E. Self-employment, sickness absence and disability pension in multiple sclerosis. Manuscript submitted for publication.
- Ribbe M, Kern S, Lindberg L, **Machado A**, Westman E, Zetterberg H, Blennow K, Zettergren A, Skoog I. The effect of high blood pressure on Alzheimer’s specific brain regions. Manuscript submitted for publication.
- **Machado A**, Ferreira D, Grothe MJ, Eyjolfsdottir H, Almqvist PM, Cavallin L, Lind G, Linderöth B, Seiger Å, Teipel S, Wahlberg LU, Wahlund LO, Westman E, Eriksson M, for the Alzheimer’s Disease Neuroimaging Initiative (2020). The cholinergic system and treatment response in subtypes of Alzheimer’s disease. MedRxiv 2020.01.23.20018507; doi: <https://doi.org/10.1101/2020.01.23.20018507>

Publications in peer reviewed journals

19. Cedres N, Ferreira D, Nemy M, **Machado A**, Pereira J, Wahlund L-O, Zettergren A, Stepankova O, Vylousilova L, Eriksson M, Teipel S, Grothe M.J, Blennow K, Zetterberg HI, Schöll M, Kern S, Skoog I and Westman E. The contribution of white matter lesions and CSF biomarkers towards the integrity of the cholinergic projections. *Neurology* (accepted May 10th, 2022).
18. Dittrich A, Ashton NJ, Zetterberg H, Blennow K, Geiger F, Zettergren A, Arvidsson Rådestig M, Simrén J, **Machado A**, Westman E, Skoog I, Kern S. Plasma and CSF NfL are differentially associated with biomarker evidence of neurodegeneration in a community-based sample of 70-year olds (2022) *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*; 14(1), e12295. doi:10.1002/dad2.12295
17. Van den Hurk W, Bergman I, **Machado A**, Bjermo A and Gustavsson A. Swedish population normative data for Mindmore: a comprehensive cognitive screening

- battery, both digital and self-administrate. (2022) *Journal of International Neuropsychology*, 28(2):188-202. doi:10.1017/S135561772100045X
16. Bosma A, Murley C, Aspling J, Hillert J, Schaafsma F, Anema J, Boot CRL, Alexanderson K, **Machado A**, Friberg E. (2021). Trajectories of sickness absence and disability pension days among people with multiple sclerosis by type of occupation. *Multiple Sclerosis Journal*, 1-12. doi.org/10.1177/13524585211048759
 15. Lindberg O, Kern S, Skoog J, **Machado A**; Pereira JB, Sacuiu S; Zettergren A, Wahlund LO, Blennow K, Zetterberg H, Westman E, and Skoog I. Effects of amyloid pathology and the APOE ϵ 4 allele on the association between cerebrospinal fluid A β 38 and A β 40 and brain morphology in cognitively normal 70-years-olds. (2021). *Neurobiology of Aging*, 101:1-12. doi: 10.1016/j.neurobiolaging.2020.10.033.
 14. Skillbäck T, Blennow K, Zetterberg H, Shams S, **Machado A**, Pereira JB, Lindberg O, Mielke MM, Zettergren A, Ryden L, Westman E, Wahlund LO, Skoog I and, Kern S. Sex differences in CSF biomarkers for neurodegeneration and blood-brain barrier integrity (2021). *Alzheimer's & Dementia: diagnosis, assessment & disease monitoring*; 13(1):e12141. <https://doi.org/10.1002/dad2.12141>
 13. **Machado A**, Ferreira D, Grothe M, Almqvist, Eyjolfsdottir H, Lind G, Linderöth B, Seiger Å, Teipel S, Wahlberg LU, Westman E and Eriksdöter M. for the Alzheimer's Disease Neuroimaging Initiative. (2020). The cholinergic system in subtypes of Alzheimer's disease: an in vivo longitudinal MRI study. *Alzheimer's Research & Therapy*. 12:51. doi:10.1186/s13195-020-00620-7
 12. Cedres N, Ferreira D, **Machado A**, Shams S, Sacuiu S, Waern M, Wahlund LO, Zettergren A, Kern S, Skoog I, Westman E. Predicting Fazekas scores from automatic segmentations of white matter signal abnormalities. *Aging*. 2020 Jan 12;12(1):894-901. doi: 10.18632/aging.102662.
 11. Cedres N, **Machado A**, Molina Rodríguez Y, Diaz-Galvan, P, Hernandez-Cabrera, JA, Barroso, J, Westman, E and Ferreira, D. (2019) Subjective cognitive decline below and above the age of 60: a multivariate study on neuroimaging, cognitive, clinical, and demographic measures. *Journal of Alzheimer's disease*; 68(1):295-309. doi: 10.3233/JAD-180720.
 10. Björngrim S, van den Hurk W, Betancort M, **Machado A** and Lindau M. Comparing Traditional and Digitized Cognitive Tests Used in Standard Clinical Evaluation - A Study of the Digital Application Minnemera (2019). *Frontiers in Psychology*; 10:2327. doi: 10.3389/fpsyg.2019.02327.
 9. Rydberg Sterner T, Ahlner F, Blennow K, Dahlin-Ivanoff S, Falk H, Havstam Johansson L, Hoff M, Holm M, Hörder H, Jacobsson T, Johansson B, Johansson L, Kern J, Kern S, **Machado A**, Mellqvist Fässberg M, Nilsson J, Ribbe M, Rothenberg E, Rydén L, Sadeghi A, Sacuiu S, Samuelsson J, Sigström R, Skoog J, Thorvaldsson

- V, Waern M, Westman E, Wetterberg H, Zetterberg H, Zetterberg M, Zettergren A, Östling S, and Skoog I. (2019). The Gothenburg H70 Birth cohort study 2014-16: design, methods and study population. *Eur J Epidemiol.* 34(2):191-209. doi: 10.1007/s10654-018-0459-8.
8. **Machado A**, Barroso J, Molina Y, Nieto A, Diaz-Flores L, Westman E, and Ferreira D. Proposal for a hierarchical, multidimensional, and multivariate approach to investigate cognitive aging. *Neurobiology of Aging.* 71:179-188. <https://doi.org/10.1016/j.neurobiolaging.2018.07.017>
 7. Ferreira D, Hansson O, Barroso J, Molina Y, **Machado A**, Hernández-Cabrera JA, Muehlboeck J-S, Stomrud E, Nägga K, Lindberg O, Ames D, Kalpouzos G, Fratiglioni L, Bäckman L, Laukka EJ, Graff C, Mecocci P, Vellas B, Tsolaki M, Kłoszewska I, Soinen H, Lovestone S, Ahlström H, Lind L, Larsson E-M, Wahlund L-O, Simmons A, and Westman E. (2017). The interactive effect of demographic and clinical factors on hippocampal volume: a multi-cohort study on 1958 cognitively normal individuals. *Hippocampus,* 27(6),653-667. <https://doi.org/10.1002/hipo.22721>
 6. Ferreira D, **Machado A**, Molina, Y, Nieto A, Correia R, Westman E, and Barroso J. (2017). Cognitive Variability during Middle-Age: Possible Association with Neurodegeneration and Cognitive Reserve. *Frontiers in Aging Neuroscience* 9:188. <https://doi.org/10.3389/fnagi.2017.00188>
 5. Ferreira D, Bartrés-Faz D, Nygren L, Rundkvist LJ, Molina Y, **Machado A**, Junqué C, Barroso J, and Westman E. (2016). Different reserve proxies confer overlapping and unique endurance to cortical thinning in healthy middle-aged adults. *Behavioural Brain Research* 311:375-383. <https://doi.org/10.1016/j.bbr.2016.05.061>
 4. Ferreira D, Correia R, Nieto A, **Machado A**, Molina Y, and Barroso, J. (2015). Cognitive decline before the age of 50 can be detected with sensitive cognitive measures. *Psicothema,* 27(3), 216–222. <https://doi.org/10.7334/psicothema2014.192>
 3. Nieto A, Hernández-Rodríguez E, Hernández-Torres, A, Rodríguez-Solís PV, Hess-Medler S, **Machado-Fernández A**, Molina-Rodríguez Y, and Barroso, J. (2014). [Alternate form of the Test de Aprendizaje Verbal de España-Complutense (TAVEC) Reply]. *Revista de Neurologia,* 59: 480 <https://doi.org/10.33588/rn.5910.2014432>
 2. Nieto A, Hernández-Rodríguez E, Hernández-Torres, A, Rodríguez-Solís PV, Hess-Medler S, **Machado-Fernández A**, Molina-Rodríguez Y, and Barroso, J. (2014). [Alternate form of the Test de Aprendizaje Verbal de España-Complutense (TAVEC)]. *Revista de Neurologia,* 58(9), 389–395. <https://doi.org/10.33588/rn.5809.2013568>
 1. Ferreira D, Molina Y, **Machado A**, Westman E, Wahlund, LO, Nieto A, Correia R, Junqué C, Diaz Flores L, and Barroso, J. (2014). Cognitive decline is mediated by gray

matter changes during middle age. *Neurobiology of Aging*, 35(5), 1086–1094
<https://doi.org/10.1016/j.neurobiolaging.2013.10.095>

Conference Presentations (more than 40 abstracts accepted for presentation at international conferences: a selection)

- Bosma A, Murley C, Aspling J, Hillert J, Schaafsma F, Anema J, Boot C.R.L, Alexanderson K, **Machado** A, Friberg E. Trajectories of sickness absence and disability pension by type of occupation in multiple sclerosis. 14th European Public Health Conference 2021. Oral Presentation (**Machado**). Virtual event from 10 – 12 November 2021
- **Machado** A, Murley C, Hillert J, Andersson K, Friberg E. Sickness absence and disability pension within different employment status in multiple sclerosis. 14th European Public Health Conference 2021. Poster presentation. Virtual event from 10 – 12 November 2021
- Skillbäck T, Blennow K, Zetterberg H, Shams S, **Machado** A, Pereira JB, Lindberg O, Mielke MM, Zettergren A, Ryden L, Westman E, Wahlund LO, Skoog I and, Kern S. Sex differences in CSF biomarkers for neurodegeneration and blood-brain barrier integrity (2020). Poster presentation. *Alzheimer's & Dementia*; 16(Suppl. 4): e038588. <https://doi.org/0.1002/alz.038588>
- **Machado** A, Ferreira F, Eyjolfssdottir H, Poulakis K, Almqvist P, Lind G, Linderöth B, Seiger Å, Wahlberg L, Wahlund LO, Westman E, and Eriksson M. Gray matter changes associated to brain delivered nerve growth factor treatment. (Oral communication). International Geneva/Springfield Symposium on Advances in Alzheimer Therapy (AAT) and Alzheimer's and Parkinson's Disease (AD/PD). Torino (Italy), March, 2018.
- **Machado** A, Ferreira D, Molina Y, Nieto A, Westman E, & Barroso, J. Age prediction by means of multiple cognitive measures: a novel multivariate approach in Normal Aging. INS 2016 Mid-year. Poster presentation.
- Ferreira D, Hansson O, Barroso J, Molina Y, **Machado** A, Stomrud E, Nägga K, Lindberg O, Mecocci P... Comparing control groups from seven large-scale cohorts: differences in demographic-clinical factors and associations with imaging markers of Alzheimer's disease The 12th International Conference on Alzheimer's and Parkinson's Diseases and related neurological disorders (ADPD). Nice (France) March 2015.

Teaching activity

- Co-supervision of a PhD student, Division of Insurance Medicine, Department of Clinical Neuroscience, Karolinska Institutet, Stockholm. 2020- present
- Teaching participation in “Imaging in Neuroscience: with a focus on structural MRI” course. Karolinska Institutet, Stockholm. 2018
- Co-supervision of neuroimaging software training for undergraduate and postgraduate level, Karolinska Institutet, Stockholm. 2016 -2018
- Collaboration in supervising Neuropsychological assessment for undergraduate and postgraduate level, department of Clinical Psychology, Psychobiology and Methodology, Faculty of psychology. The University of La Laguna, Tenerife (Spain). 2014-2016
- Teaching participation and development of several audiovisual teaching materials for undergraduate students in Psychology (Neuropsychology I). Faculty of Psychology, University of La Laguna, Tenerife (Spain). 2013-2014
- Co-supervision of undergraduate students in Psychology (Neuropsychology practicum). Faculty of Psychology, University of La Laguna, Tenerife (Spain). 2011-2012

Commissions

- Member of the “FörsäkringsMedicinska Sällskapet” 2020 -
- Board member of the Canarian society of Neuropsychology. 2013-2014
- Member of the Canary Neuropsychological Society: 2008-2015
- Member of the Official College of Psychologies in Tenerife. Registration number: T-02622. for 2014 and T-03746 since 2019 -present.

Funding

Grants

- Stohnes Stifelse (Stockholm, Sweden). 2016, 2017, 2018
- Gamla tjänarinnor Foundation (Stockholm, Sweden) 2017, 2018
- Lindhès Advokatbyrå AB Stifelser (Stockholm, Sweden) 2016, 2017
- Grant for international research stays at Karolinska Institutet. University of La Laguna (Tenerife, Spain). 2014
- Grant for international research stays at IDIBAPS lab at Clinical Hospital in Barcelona. University of La Laguna (Tenerife, Spain). 2012

Scholarships

- Fundación Canaria Doctor Manuel Morales (La Palma, Spain). 2015
- PhD candidate scholarship, Fundación Caja Canarias (Tenerife, Spain). 2010-2014 (annual contest)
- Research fellowship for postgraduate. Canary Agency for Research, Innovation, and Society Information (Tenerife, Spain). 2009