

Cécilia SAMIERI



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Fonction : chargée de recherche INSERM

Spécialité : Nutritional epidemiology - brain aging epidemiology

BIOGRAPHICAL SKETCH

NAME: SAMIERI Cécilia

POSITION TITLE: Senior Researcher, INSERM (French National Institute for Health)

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Lycée Michel Montaigne, Bordeaux, France	Baccalaureate diploma (upper honours, Mention Très Bien)	1997	Mathematics
Université Paris XII, Paris, France	Doctorate	2004	Veterinary Medicine
Université Paris XI, Paris, France	M.Sc(upper honours, Mention Très Bien)	2006	Methodology and Statistics in Biomedical Research
Université de Bordeaux, Bordeaux, France	Ph.D (upper honours, Mention Très Honorable)	2007-2009	Epidemiology
Université de Bordeaux, Bordeaux, France	Postdoctoral Research fellow	2010-2011	Epidemiology - Biostatistics and neuro-imaging
Channing Division of Network Medicine, Harvard Medical School and Brigham and Women's Hospital, Boston, USA	Postdoctoral Research fellow	2011-2012	Epidemiology

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY
INSERM U897 and Université de Bordeaux, Bordeaux, France	Junior Research Position (French Fondation Plan Alzheimer grant)	2012-2015	Epidemiology – Alzheimer's disease

A. Personal Statement

My research has mainly focused on the epidemiology of aging, with the aim of understanding how environmental factors, in particular diet, influences the aetiology of brain diseases and conditions in aging, such as dementia, cognitive decline or stroke. Since environmental factors have a pleiotropic role in health, a broader perspective of my research has recently focused on environmental strategies to maintain overall health in aging. Specifically, I have contributed to demonstrate the impact of a healthier diet in midlife (eg., a Mediterranean diet) for healthy aging. There is indeed increasing evidence that a number of age-related diseases originate in midlife and even in earlier periods of life. For example, it is now recognized that lesions associated with age-related brain diseases accumulate silently over decades before brain diseases in the late-life. At the same time, brain plasticity, which provides more numerous neurons and connections - globally referred to as "brain reserve" - to cope with lesions and maintain optimal cognitive performances with aging, start developing in the first decades of life. While it has become more and more evident that future brain aging research should move on early prevention, the optimal strategy, including the most critical window of opportunity for prevention, remains to be elucidated. To inform early mechanisms underlying the relation of the environment and brain health, I am currently working on extending my research interests to the investigation of environmental factors and brain structure of young adults in a large ongoing cohort of French students. A better understanding on how the environment shapes brain structural plasticity in early adult life will eventually help designing future prevention strategies.

A. Positions and Honors.

Positions and employment

2012-15 Junior Research Position (French Fondation Plan Alzheimer grant), INSERM U897 and Université de Bordeaux, France.

2015- Permanent senior researcher, Bordeaux Population Health Center, INSERM U1219 (French National Institute for Health).

Tutor of the internet-based DIU "Nutritional Epidemiology" at the ISPED, Bordeaux, France.

Lecturer in Master 2 "Epidemiology" at the ISPED, Bordeaux France. Course: identification of dietary patterns.

Honors

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2010-12 Pilot Award from the LECMA (European League Against Alzheimer's Disease, France); Thesis prize from the SFEL (French Society for the Study of Lipids, France).

2011-12 Fulbright Research Scholar Award; Medical research award from the Philippe Foundation (USA & France); travel award from the International Conference on Alzheimer Disease (France).

2012-15 Junior Researcher Position grant from the French Fondation Plan Alzheimer; 1st prize for best free communication at the 2012 Aquitaine Conferences on Neurosciences, Université de Bordeaux (France); travel award, Alzheimer Association International Conference (Canada).

2016 Alzheimer's Association Research Grant AARG-16-439218.

B. Selected peer-reviewed publications (in chronological order).

- Publications in international peer-reviewed scientific journals

- 1 Lefèvre-Arbogast S, Féart C, Dartigues JF, Helmer C, Letenneur L, **Samieri C**. **Dietary B Vitamins and a 10-Year Risk of Dementia in Older Persons**. *Nutrients*. 2016 Nov 26;8(12).
- 2 Pilleron S, Ajana S, Jutand MA, Helmer C, Dartigues JF, **Samieri C**, Féart C. **Dietary Patterns and 12-Year Risk of Frailty: Results From the Three-City Bordeaux Study**. *J Am Med Dir Assoc*. 2016 Nov 12 [Epub ahead of print].
- 3 Cougnard-Grégoire A, Merle BM, Korobelnik JF, Rougier MB, Delyfer MN, Le Goff M, **Samieri C**, Dartigues JF, Delcourt C. **Olive Oil Consumption and Age-Related Macular Degeneration: The Alienor Study**. *PLoS One*. 2016 Jul 28;11(7):e0160240.
- 4 Del Gobbo LC, Imamura F, Aslibekyan S, Marklund M, Virtanen JK, Wennberg M, Yakoob MY, Chiuve SE, Dela Cruz L, Frazier-Wood AC, Fretts AM, Guallar E, Matsumoto C, Prem K, Tanaka T, Wu JH, Zhou X, Helmer C, Ingelsson E, Yuan JM, Barberger-Gateau P, Campos H, Chaves PH, Djoussé L, Giles GG, Gómez-Aracena J, Hodge AM, Hu FB, Jansson JH, Johansson I, Khaw KT, Koh WP, Lemaitre RN, Lind L, Luben RN, Rimm EB, Risérus U, **Samieri C**, Franks PW, Siscovick DS, Stampfer M, Steffen LM, Steffen BT, Tsai MY, van Dam RM, Voutilainen S, Willett WC, Woodward M, Mozaffarian D; Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE) Fatty Acids and Outcomes Research Consortium (FORCE). **ω -3 Polyunsaturated Fatty Acid Biomarkers and Coronary Heart Disease: Pooling Project of 19 Cohort Studies**. *JAMA Intern Med*. 2016 Aug 1;176(8):1155-66.
- 5 Allès B, **Samieri C**, Lorrain S, Jutand MA, Carmichael PH, Shatenstein B, Gaudreau P, Payette H, Laurin D, Barberger-Gateau P. **Nutrient Patterns and Their Food Sources in Older Persons from France and Quebec: Dietary and Lifestyle Characteristics**. *Nutrients*. 2016 Apr 19;8(4):225.
- 6 Ma Y, Follis JL, Smith CE, Tanaka T, Manichaikul AW, Chu AY, **Samieri C**, Zhou X, Guan W, Wang L, Biggs ML, Chen YI, Hernandez DG, Borecki I, Chasman DI, Rich SS, Ferrucci L, Irvin MR, Aslibekyan S, Zhi D, Tiwari HK, Claas SA, Sha J, Kabagambe EK, Lai CQ, Parnell LD, Lee YC, Amouyel P, Lambert JC, Psaty BM, King IB, Mozaffarian D, McKnight B, Bandinelli S, Tsai MY, Ridker PM, Ding J, Mstat KL, Liu Y, Sotoodehnia N, Barberger-Gateau P, Steffen LM, Siscovick DS, Absher D, Arnett DK, Ordovás JM, Lemaitre RN. **Interaction of methylation-related genetic variants with circulating fatty acids on plasma lipids: a meta-analysis of 7 studies and methylation analysis of 3 studies in the Cohorts for Heart and Aging Research in Genomic Epidemiology consortium**. *Am J Clin Nutr*. 2016 Feb;103(2):567-78.
- 7 Feart C, Letenneur L, Helmer C, **Samieri C**, Schalch W, Etheve S, Delcourt C, Dartigues JF, Barberger-Gateau P. **Plasma Carotenoids Are Inversely Associated With Dementia Risk in an Elderly French Cohort**. *J Gerontol A Biol Sci Med Sci*. 2015 Aug 18.

- 8 Pelletier A, Barul C, Féart C, Helmer C, Bernard C, Periot O, Dilharreguy B, Dartigues JF, Allard M, Barberger-Gateau P, Catheline G, **Samieri C**. *Mediterranean diet and preserved brain structural connectivity in older subjects*. *Alzheimers Dement*. 2015 Sep;11(9):1023-31.
- 9 Torres MJ, Féart C, **Samieri C**, Dorigny B, Luiking Y, Berr C, Barberger-Gateau P, Letenneur L. *Poor nutritional status is associated with a higher risk of falling and fracture in elderly people living at home in France: the Three-City cohort study*. *Osteoporos Int*. 2015 Aug;26(8):2157-64.
- 10 Commenges D, Proust-Lima C, **Samieri C**, Liqueur B. *A universal approximate cross-validation criterion for regular risk functions*. *Int J Biostat*. 2015 May 1;11(1):51-67.
- 11 Féart C, **Samieri C**, Barberger-Gateau P. *Mediterranean diet and cognitive health: an update of available knowledge*. *Curr Opin Clin Nutr Metab Care*. 2015 Jan;18(1):51-62.
- 12 **Samieri C**, Sun Q, Townsend MK, Rimm EB, Grodstein F. *Dietary flavonoid intake at midlife and healthy aging in women*. *Am J Clin Nutr*. 2014 Dec;100(6):1489-1497.
- 13 **Samieri C**, Amariglio RE, Proust-Lima C, Sperling RA, Glymour MM, Rentz DM, Okereke OI, Grodstein F. *Subjective cognitive concerns, episodic memory, and the APOE ε4 allele. Alzheimer's & dementia*. 2014 Sep 23; S1552-5260(14)02494-7.
- 14 Ancelin ML, Ripoche E, Dupuy AM, **Samieri C**, Rouaud O, Berr C, Carrière I, Ritchie K. *Gender-specific associations between lipids and cognitive decline in the elderly*. *Eur Neuropsychopharmacol*. 2014 Jul;24(7):1056-66.
- 15 **Samieri C**, Sun Q, Townsend MK, Chiuve SE, Okereke OI, Willett WC, Stampfer M, Grodstein F. *The association between dietary patterns at midlife and health in aging: an observational study*. *Ann Intern Med*. 2013 Nov 5;159(9):584-91.
- 16 **Samieri C**, Lorrain S, Buaud B, Vaysse C, Berr C, Peuchant E, Cunnane SC, Barberger-Gateau P. *Relationship between diet and plasma long-chain n-3 PUFAs in older people: impact of apolipoprotein E genotype*. *J Lipid Res*. 2013 Sep;54(9):2559-67.
- 17 Barberger-Gateau P, **Samieri C**, Féart C, Cunnane S. *Acides gras oméga-3 et déclin cognitif : la controverse*. *Cah Nutr Diét*. 2013 Sept ; 48(4) : 170-174.
- 18 Féart C, Lorrain S, Ginder Coupez V, **Samieri C**, Letenneur L, Paineau D, Barberger-Gateau P. *Adherence to a Mediterranean diet and risk of fractures in French older persons*. *Osteoporos Int*. Dec;24(12):3031-41.
- 19 **Samieri C**, Grodstein F, Rosner B, Kang JH, Cook NR, Manson JE, Buring JE, Willett WC, Okereke OI. *Mediterranean diet and cognitive function in older age*. *Epidemiology*. 2013 Jul;24(4):490-9.
- 20 **Samieri C**, Okereke OI, Devore EE, Grodstein F. *Long-term adherence to the Mediterranean diet is associated with overall cognitive status, but not cognitive decline, in women*. *J Nutr*. 2013 Apr;143(4):493-9.
- 21 Féart C, **Samieri C**, Allès B, Barberger-Gateau P. *Potential benefits of adherence to the Mediterranean diet on cognitive health*. *Proc Nutr Soc*. 2013 Feb;72(1):140-52.
- 22 **Samieri C**, Ginder Coupez V, Lorrain S, Letenneur L, Allès B, Féart C, Paineau D, Barberger-Gateau P. *Nutrient patterns and risk of fracture in older subjects: results from the Three-City Study*. *Osteoporos Int*. 2013 Apr;24(4):1295-305.
- 23 Barberger-Gateau P, **Samieri C**, Allès B., Féart C. *Could nutrition prevent the onset of dementia? Current evidence from epidemiological and intervention studies*. *Neurodegen Dis Manage*. 2012; 2(3):1-10.
- 24 Allès B, **Samieri C**, Féart C, Jutand MA, Laurin D, Barberger-Gateau P. *Dietary patterns: a novel approach to examine the link between nutrition and cognitive function in older individuals*. *Nutr Res Rev*. 2012 Dec;25(2):207-22.

- 25 **Samieri C**, Maillard P, Crivello F, Proust-Lima C, Peuchant E, Helmer C, Amieva H, Allard M, Dartigues JF, Cunnane SC, Mazoyer BM, Barberger-Gateau P. **Plasma long-chain omega-3 fatty acids and atrophy of the medial temporal lobe**. *Neurology*. 2012 Aug 14;79(7):642-50.
- 26 Feart C, Alles B, Merle B, **Samieri C**, Barberger-Gateau P. **Adherence to a Mediterranean diet and energy, macro-, and micronutrient intakes in older persons**. *J Physiol Biochem*. 2012 Dec;68(4):691-700.
- 27 Féart C, Pérès K, **Samieri C**, Letenneur L, Dartigues JF, Barberger-Gateau P. **Adherence to a Mediterranean diet and onset of disability in older persons**. *Eur J Epidemiol*. 2011 Sep;26(9):747-56.
- 28 **Samieri C**, Féart C, Proust-Lima C, Peuchant E, Tzourio C, Stapf C, Berr C, Barberger-Gateau P. Olive oil consumption, plasma oleic acid and stroke incidence: the Three-City study. *Neurology*. 2011 Aug 2;77(5):418-25.
- 29 Barberger-Gateau P, **Samieri C**, Féart C, Plourde M. **Dietary omega 3 polyunsaturated fatty acids and Alzheimer's disease: interaction with apolipoprotein E genotype**. *Curr Alzheimer Res*. 2011 Aug;8(5):479-91.
- 30 Féart C, Torrès M, **Samieri C**, Jutand MA, Peuchant E, Simopoulos AP, Barberger-Gateau P. Adherence to a Mediterranean diet and plasma fatty acids: data from the Bordeaux sample of the Three-City study. *Br J Nutr*. 2011 Jul;106(1):149-58.
- 31 **Samieri C**, Féart C, Proust-Lima C, Peuchant E, Dartigues J-F, Amieva H, Barberger-Gateau P. Omega-3 fatty acids and cognitive decline: modulation by ApoE4 and depressive status. *Neurobiol Aging*. 2011 Dec;32(12):2317.e13-22.
- 32 Feart C, Siewe A, **Samieri C**, Peuchant E, Helmer C, Alfos S, Pallet V, Barberger-Gateau P. Plasma retinol and association with socio-demographic and dietary characteristics of free-living older persons: the Bordeaux sample of the Three-City study. *Int J Vitam Nutr Res*. 2010 Jan;80(1):32-44.
- 33 Feart C, **Samieri C**, Barberger-Gateau P. Mediterranean diet and cognitive function in older adults. *Curr Opin Clin Nutr Metab Care*. 2010 Jan;13(1):14-8.
- 34 Feart C, **Samieri C**, Rondeau V, Amieva H, Portet F, Dartigues JF, Scarmeas N, Barberger Gateau P. Adherence to a Mediterranean diet, cognitive decline, and risk for dementia. *Jama*. 2009 Aug 12;302(6):638-48.
- 35 Feart C, **Samieri C**, Barberger-Gateau P. Mediterranean Diet and Cognitive Decline. [Letter]. *Jama*, 2009, 302: 2432.
- 36 Feart C, Peuchant E, Letenneur L, **Samieri C**, Montagnier D, Fourier-Reglat A, Barberger Gateau P. Plasma eicosapentaenoic acid (EPA) is inversely associated with severity of depressive symptomatology in the elderly: data from the Bordeaux sample of the Three-City study. *Am J Clin Nutr*. 2008 May;87(5):1156-62.
- 37 **Samieri C**, Feart C, Letenneur L, Dartigues JF, Peres K, Auriacombe S, Peuchant E, Delcourt C, Barberger-Gateau P. Low plasma eicosapentaenoic acid and depressive symptomatology are independent predictors of dementia risk. *Am J Clin Nutr*. 2008 Sep;88(3):714-21.
- 38 **Samieri C**, Jutand MA, Feart C, Capuron L, Letenneur L, Barberger-Gateau P. Dietary patterns derived by hybrid clustering method in older people: association with cognition, mood, and self-rated health. *J Am Diet Assoc*. 2008 Sep;108(9):1461-71.

• Selected publications in leading international peer-reviewed conference proceedings

- 1 Samieri C*, Morris MC, Bennett D, Berr C, Amouyel P, Tzourio C, Chasman D, Grodstein F, Barberger-Gateau P. Fish Intake, Alzheimer Disease Genes and Cognitive Decline in Five Cohorts of Older Subjects. *Alzheimers Dement*. 2015, Supplement Alzheimer's Association International Conference 19 July 2015 - 23 July 2015 (in press).

- 1 Pelletier A, Barul C, Féart C, Helmer C, Bernard C, Periot O, Dilharreguy B, Dartigues JF, Allard M, Barberger-Gateau P, Catheline G, Samieri C*. The Mediterranean Diet and Preservation of Brain Connectivity in Older Subjects. *Alzheimers Dement.* 2015, Supplement Alzheimer's Association International Conference 19 July 2015 - 23 July 2015 (in press).
- 1 Samieri C*, Glymour M., Okereke O., Grodstein F. Poster presentations. Subjective Memory Symptoms, verbal memory decline and the APOE ϵ 4 allele. *Alzheimers Dement.* 2013; 9(4): S779-779.
- 2 Okereke O., Samieri C*, Devore E., Grodstein F. Oral sessions: O3-10. Mediterranean Diet and Cognitive decline in the Nurses' Health Study. *Alzheimers Dement.* 2012; 7(4): S448.
- 3 Samieri C*, Maillard P., Crivello F., et al. International Conference on Alzheimer's disease (ICAD). Poster presentations. Plasma long-chain Omega-3 fatty acids and medial temporal lobe atrophy: a longitudinal MRI study. *Alzheimers Dement.* 2011;7(4): S363.

*Presenting author.

- Invited presentations to peer-reviewed, internationally established conferences

- 2nd symposium Kyoto-Bordeaux, 2015, Kyoto University, Kyoto (Japan). Session 7: Public Health; Healthy diet for a healthy brain with aging: current epidemiological evidence.

- 10th Congress of the International Society for the Study of Fatty Acids and Lipids (ISSFAL), Vancouver (Canada), 2012. Plasma long-chain omega-3 fatty acids and atrophy of the medial temporal lobe.

- Lipids and Brain II - Journées Chevreul 2011, Paris (France). Thesis award from the SFEL [French Society for the Study of Lipids]: Nutrition and brain aging: role of fatty acids with an epidemiological perspective.

C. Research Support.

- Ongoing:

- 2016-2018. Alzheimer's Association Research Grant. Network science tools to identify novel diet patterns in prodromal dementia. PI: C. Samieri (Univ Bordeaux); in collaboration with Channing Division of Network Medicine, Harvard Medical School (Boston, USA). This project will utilize novel analytic tools to explore the complex role of behavioral factors, in particular diet, in dementia risk

- 2016-2020. H2020 European Project Joint Programming Initiative « A healthy diet for a healthy life ». Identification of dietary modulators of cognitive ageing and brain plasticity and proof of concept of efficacy for preventing/reversing cognitive decline. PI: S. Thuret (King's College London). WP1 leader: C. Samieri. This project aims to uncover and validate food bioactives protecting against age-related cognitive decline triggered by brain plasticity alteration. WP1 will be dedicated to the project discovery stage, aimed at conducting a food metabolome-wide association study of dietary/bioactive compounds and accelerated cognitive decline, using data from the French 3C study.

- Completed:

- 2012-2015. Junior Research Position Fondation Plan Alzheimer. Fatty acids, genetics and Alzheimer's disease: exploring novel gene – environment interactions. PI: C. Samieri (INSERM and Univ Bordeaux). This grant awarded by the French Fondation Plan Alzheimer (which managed research measures of the 3rd National Alzheimer Plan) aimed at exploring nutrient-gene interactions in Alzheimer's disease, in a collaborative effort between 5 large European and US cohorts of cognitive decline (including the French 3C cohort and the US Nurses' Health Study, Women's Health Study, Chicago Health and Aging Project and Memory and Aging Project).

- 2010-2012. Pilot award LECMA (European League Against Alzheimer's Disease, France). Nutrition and neuroimaging markers of Alzheimer's Disease. PI: C. Samieri (INSERM and Univ Bordeaux). This grant aimed at investigating the association between diet and brain imaging markers in Alzheimer's disease.