

Local research on dementia 2011

Serum biomarkers

A range of studies are underway to investigate whether biomarkers of factors such as vitamin D deficiency and adipokine levels predict people's subsequent risk of cognitive decline and dementia. It is hoped that this approach will identify new potentially modifiable risk factors with therapeutic potential.

- Dickens, A.P., Lang I.A., Langa, K.M., Kos, K., & Llewellyn D.J. (2011). Vitamin D, cognitive dysfunction and dementia in older adults. *CNS Drugs*, 25, 8, 629-639.
- Llewellyn, D.J., Lang, I.A., Langa, K.M., & Melzer, D. (2011). Vitamin D and cognitive impairment in the elderly US population. *Journals of Gerontology A: Biological and Medical Sciences*, 66, 1, 59-65.
- Llewellyn, D.J., Lang, I.A., Langa, K.M., Muniz-Terrera, G., Phillips, C.L., Cherubini, A., Ferrucci, L., Melzer, D. (2010). Vitamin D and risk of cognitive decline in the elderly. *Archives of Internal Medicine*, 170, 13, 1135-1141.

Genetics

We are collaborating with international consortia to conduct genome-wide association studies to reveal new risk loci associated with Alzheimer's disease and aspects of cognitive function. We are also conducting an *in-vivo* genome-wide study of leukocyte transcript levels by microarray analysis in relation to cognitive function.

- Cluett, C., Brayne, C., Clarke, R., Evans, G., Matthews, F., Rubinsztein, D.C., Huppert, F., Llewellyn, D.J., Murray, A., Rice, N., Henley, W., Frayling, T.M., & Melzer, D. (2010). Polymorphisms in LMNA and near a SERPINA gene cluster are associated with cognitive function in older people. *Neurobiology of Aging*, 31, 1563-1568.
- Llewellyn D.J., Lang I.A., Matthews, F.E., Plassman, B.L., Rogers, M.A.M., Morgenstern, L.B., Fisher, G.G., Kabeto, M.U., & Langa, K.M. (2010). Vascular health, diabetes, APOE and dementia: The Aging Demographics and Memory Study. *Alzheimer's Research & Therapy*, 2, 19.

Vascular imaging

Local clinical studies such as ECHO-PIV are being conducted in Exeter bringing together novel vascular imaging technologies and cognitive assessments in a range of patient groups. We have also recently been joined by Prof Nitin Purandare who also has expertise in vascular imaging and has published extensively on the role of cerebral emboli in dementia.

- Llewellyn D.J., Lang I.A., Matthews, F.E., Plassman, B.L., Rogers, M.A.M., Morgenstern, L.B., Fisher, G.G., Kabeto, M.U., & Langa, K.M. (2010). Vascular health, diabetes, APOE and dementia: The Aging Demographics and Memory Study. *Alzheimer's Research & Therapy*, 2, 19.
- Purandare N. (2009). Preventing dementia: role of vascular risk factors and cerebral emboli. *Br Med Bull*. 2009; 91:49-59.
- Purandare N, Burns A, Daly KJ, Hardicre J, Morris J, Macfarlane G, McCollum C. (2006) Cerebral emboli as a potential cause of Alzheimer's disease and vascular dementia: case-control study. *BMJ*. 2006 May 13;332(7550):1119-24.

Health services research

Work being carried out under the auspices of the NIHR PenCLAHRC (Peninsula Collaboration for Leadership in Applied Health Research and Care) deals with the implementation and evaluation of services for people with dementia and their supporters. Projects underway include a PhD study of ways to support families and friends to identify early signs of dementia and take act on their concerns; a community-based evaluation of local peer-led dementia support groups; and a study investigating ways of engaging people with dementia and memory loss in identifying and prioritising research questions.

- Dickens AP, Boddy K, Gibson A, Litherland R, Milton S, Lang IA. Involving people with dementia in the development of a research question (in preparation).

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