

Dr. Jean-François Démonet, M.D., PhD

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SHORT BIOGRAPHY AND SUMMARY OF SCIENTIFIC WORK

Jean-François Démonet was born in 1956. He was trained as an MD and Neurologist at Toulouse University. He completed his training in **Neuropsychology** at Montreal University (1985-1986) and was trained to functional **Neuro-Imaging** at the MRC Cyclotron Unit (London, UK) during a one-year long stay (1992) and a sustained collaboration with the group of R. Frackowiak thanks his participation in a BIOMED project, the 'European Dyslexia Project'. More recent Europe-wide activities in the domain of brain imaging of language disorders are illustrated by his responsibility in the 'Neurodys' project (supported by the 6th European PCRD).

Démonet's current position is "Directeur de Recherche (1ère classe)" in a French INSERM laboratory (Inserm UMR 825) in which he has been recruited in 1989 and he is currently leading a research team.

JF Démonet **research domains** concern **mainly neuropsychological and neuroimaging studies of language, memory and perception, in patients suffering from vascular focal lesions, degenerative diseases and developmental disorders**. Aside from classical neuropsychological studies, his work involves various brain mapping methods (PET, fMRI, ERPs) to study the brain correlates of language and memory functions both in normal subjects and in patients presenting aphasia, agnosia, dementia or dyslexia. These research lines are being developed on-site by **a research team involving 7 scientists**, as well as via **multiple collaborations at both national and international levels**.

Démonet's main research domain concerns **language** and include two lines of research. The first line focuses on **basic processes of the 'physiology of language'** (see for instance Démonet et al., *Physiological Reviews*, 2005) relating to neuroimaging studies, mainly including normal subjects. The second research line involves more **disease-oriented studies** in patients suffering from a diversity of neurological conditions, Alzheimer's disease, Parkinson's disease, Huntington's disease, and stroke as well as subjects (children and adults) presenting with developmental dyslexia.

In the past few years, Démonet's team focused on the physiological brain substrates of **written language**, including studies of reading (e.g. Lévy et al., *NeuroImage* 2008, and *PlosONE* 2009), and with a special emphasis on **writing processes** (Roux et al., *Ann Neurol.*, 2009).

Recent works on **language disorders** concerned **post-stroke aphasia** and the neural bases of functional compensation of language deficits (e.g. de Boissezon et al., *Eur J Phys Rehabil Med.* 2009), **Parkinson's disease** (Peran et al., 2009), **Huntington's disease** (Lepron et al., 2009), and **developmental dyslexia** (e.g. Pernet et al., 2008 and 2009 illustrating the interest of VBM studies for localizing performance-related crucial sites in adult dyslexics; Dufor et al., *NeuroImage* 2009 demonstrating the involvement of "Broca's area" in the neural coding of, aberrant, within-category discrimination in some dyslexics).

Recent publications:

- Roux F-E, Dufor O, Giussani C, Wamain Y, Draper L, Longcamp M, **Démonet J-F**. The graphemic/motor frontal area (GMFA): Exner's area revisited. *Annals of Neurology*, 2009, 66:537-45
- Querbes O, Aubry F, Pariente J, Lotterie JA, **Démonet JF**, Duret V, Puel M, Berry I, Fort JC, Celsis P; The Alzheimer's Disease Neuroimaging Initiative. Early diagnosis of Alzheimer's disease using cortical thickness: impact of cognitive reserve. *Brain*. 2009
- Teichmann M, Gaura V, **Démonet JF**, Supiot F, Delliaux M, Verny C, Renou P, Remy P, Bachoud-Lévi AC. Language processing within the striatum: evidence from a PET correlation study in Huntington's disease. *Brain*. 2008
- Roux FE, Lubrano V, Lauwers-Cances V, Giussani C, **Démonet JF**. Cortical areas involved in Arabic number reading. *Neurology*. 2008
- Raboyeau G, De Boissezon X, Marie N, Balduyck S, Puel M, Bézy C, **Démonet JF**, Cardebat D. Right hemisphere activation in recovery from aphasia: lesion effect or function recruitment? *Neurology*. 2008