

Dear

Thank you very much indeed for taking part in the TIME project. The work that you have helped to make possible began in 2003, and has come to fruition over the past year with four publications describing the main features of Transient Epileptic Amnesia (TEA).

We mentioned the first of these in last year's Christmas update (*The syndrome of Transient Epileptic Amnesia*. *Annals of Neurology*, 2007; volume 61; pages 587-598). Since then, we have published a review of what is known about TEA and the persistent problems with memory that sometimes accompany it (*Recent insights into the impairment of memory in epilepsy: a systematic review of transient epileptic amnesia, accelerated long-term forgetting and remote memory impairment*. *Brain* 2008 131(9):2243-2263), together with a description of a single case illustrating the main features of the disorder (*Transient epileptic amnesia: a case study with radiological localisation*. *Nature Clinical Practice Neurology*, 2008;4:517-521). This case provided an important clue about the part of the brain from which this kind of epilepsy arises – the hippocampus – which, perhaps not surprisingly, is the single brain region most closely linked to memory.

A fourth paper, describing the findings of your MRI scans, performed as part of the MRI project, and the relationships between the scans, the results of the psychological tests you took part in, and the memory questionnaires you filled out, will be published soon (*Transient Epileptic Amnesia: regional brain atrophy and its relationship to memory deficits*. *Brain*, in press.). This work also suggests that the hippocampus is involved in TEA, though the persistent memory problems that sometimes occur were not clearly linked to changes in the hippocampus. If you would like us to send you copies of any of these papers, either electronically or by post, please let us know.

The work of the first author of these papers, Chris Butler, who has the first TIME research fellow, has won prizes over the past year from three different organizations involved in epilepsy. This reflects your contribution (thank you!), Chris's hard work, and the recognition that TEA is a neglected disorder from which we can learn both about epilepsy and about memory.

As some of you will know well, through recent involvement, the TIME project's work continues. Nils Muhlert, a research fellow funded by Microsoft Research from 2008, has been using an experimental camera, the SenseCam, which builds up a kind of photographic diary of the day's events, to assess the 'leakiness' of memory that occurs in some people with TEA ('accelerated long term forgetting' – the loss of memories, that at first appear to have been acquired normally, over the course of a day-weeks). This work involves spending a day in a distinctive setting, like a zoo or a museum, while SenseCam automatically records events. The resulting photos can then be used to test memory over the following hours-weeks. We are taking the opportunity to find out, at the same time, whether memories for procedures, 'how to' memory, is affected by accelerated forgetting. This work will be completed in January 2009.

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We are also studying the 'autobiographical amnesia' that occurs in some people with TEA (this is a patchy loss of memories for important past events, such as holidays and weddings, which can extend back several decades). Some of you will have met Dominika Pindus, who unfortunately left the project this year. Her work has been picked up by Fraser Milton, who is a post-doctoral fellow working with the TIME project for 3 years. Fraser's initial aim is to describe this problem more accurately than has been done before, to establish in detail the nature of the memory loss: for example, how far back does it really extend, and does it affect memories for public as well as personal events? This work will be completed early in the New Year, when Fraser will begin to invite some of you to take part in a 'functional imaging' study of autobiographical memory. This will involve recalling past events while lying in an MRI scanner, making it possible to visualize brain activity while remembering: we hope to discover how this changes in people with TEA, to gain a clearer understanding of the cause of this memory problem.

We hope to raise further funds in the coming year to enable the team to answer some outstanding questions. These include: what is the root cause of TEA (this remains uncertain)? Is there any progressive change in memory over the years in TEA (we think probably not, but this has not been studied)? Is there a link between the persistent memory problems that can occur in TEA and disturbance of the brain's electrical activity during sleep? Does treatment of TEA improve memory?

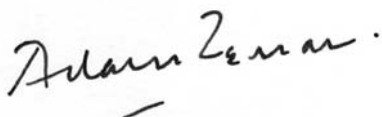
The other achievement of the TIME team this year was to complete the Exeter half-marathon in May. We have just begun training for the 2009 race.

More information about the project is available from the TIME website: <http://www.pms.ac.uk/time/index.php> - which is being update by Alicia Smith, an enthusiastic Psychology student who is working with us for the year.

We are very grateful to you for your help so far, which has helped to provide a much clearer picture of this type of epilepsy that than was available previously.

With all best wishes for Christmas and the New Year,

Yours sincerely,



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time

The Impairment of Memory in Epilepsy

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