Brain Scans and Chronic Pain

R.Kwaitek et al. Arthritis and Rheumatism (Dec 2000) Vol. 43 #12.

The brain scans of 17 women diagnosed with Fibromyalgia and 22 health women were compared. Scans were sensitive to blood flow in small volume segments of the brain.

Fibromyalgia is characterised by chronic pain among other symptoms.

Small reductions in blood flow were detected in the thalamus of the Fibromyalgia cases. These were not sufficiently distinct to be diagnostic.

The authors speculate that the reduced blood flow may be caused by reduced neural activity. An alternative is that the cases have less good circulation in this region.

Comment
Reduced blood flow could be associated with chronic pain, but could also be explained by other symptoms or even behaviors. If the differences could be reversed by therapy e.g. cognitive behaviour therapy then it would tend to indicate that they were acquired rather than innate.

Potential value for longitudinal studies. These would help establish the diagnostic status of Fibromyalgia and the cause of symptoms.

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I.Grachev et al. Pain (2000) Vol. 89 #1 Dec 2000 p 7 – 18.

Brain scans of 9 cases of chronic low back pain were compared with 11 controls. Scans were sensitive to the presence of several metabolites produced by normal brain activity.

Small differences in the average concentrations of several specific metabolites were found. These were not large differences and were too inconsistent to be diagnostic.

Differences were detected in the thalamus, cingulate cortex and dorsolateral prefrontal cortex.

Comment
Differences are ascribed to pain but could be explained by many factors. Larger studies which correct for activity, mental health and time course of pain would be of interest.

Longitudinal studies would help establish whether such differences were the cause of chronic back pain or acquired as a result.

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General comment
Brain scans will increasingly be used to develop understanding of any illness or disorder that involves perception or mental health. Such knowledge is in its infancy, but the costs of scans are now such that the techniques are accessible to experienced epidemiologists.

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