The Open University and Animal Experiments

The case against Animal Research

A substantial proportion of OU animal research is on the brain, purporting to have potential benefits for the much-feared Alzheimer's disease.

Professor Steven Rose continues his apparently interminable research on chicks, and Head of Biology Professor Mike Stewart is now studying rats, both claiming that their work has relevance for human memory. One of Stewart's own papers refers to the proliferation of neurons (nerve cells) in 'trained' chicks. This does not occur in humans after birth. Stewart's latest work involves drilling holes in rats' brains and stimulating them with electrodes, demonstrating that this causes changes in learning-related brain regions. However, rodents have far superior neuronal regenerative capacity to humans.

The research is excessively reductionist, and is unlikely to translate into benefits for human sufferers (Langley *et al*., 2000). There are, however, ample data (from **human** studies) on the benefits of nutritional supplementation, and other lifestyle changes, for the prevention and treatment of dementia (Pomfrey, 2002).

Even if an animal 'model' can be induced to develop illness similar to that seen in humans, and a drug is found that prevents or cures it in the animal, the following problems will still exist:

1. Humans and other animals do not react to drugs in the same way (Students for Ethical Science, 2004; Animal Aid, 2002).

2. It is likely to be impossible to correctly identify human sufferers on whom a clinical trial could be carried out, as diagnostic criteria are extremely inconsistent and unreliable, even when it comes to deciding whether or not someone is demented (Erkinjuntti *et al.,* 1997), before using further inconsistent and unreliable protocols to attempt to determine which kind of dementia they might have (Pohjasvaara *et al.,* 2000).

3. If a drug were to be approved following such a deeply flawed trial, the same problems would pertain in identifying patients 'suitable' for more widespread use of the drug.

4. Even post-mortem, pathologists cannot agree on whether brains come from demented or non-demented patients, or whether they had Alzheimer's or vascular dementia (Ince, 2001).

5. (This applies to all reductionist molecular research.) We are still discovering new roles for the body's own chemicals - for example vitamin D is now believed to be produced in the brain and to have a neuroprotective role, in addition to its production in the liver and kidney and role in bone maintenance. Yet we use foreign chemicals to disrupt tiny sections of biological pathways in the hope that they have just one specific effect. Poor specificity means that few animal research-derived drugs are without side effects, and hundreds of thousands of people, die every year from prescribed drugs.

Dr Caroline Pond has spent many years studying adipose tissue (fat) in animals and claiming that her research is relevant to humans. The report from the Biology department to the Animal Ethical Committee for 2001 claims relevance to HIV-associated fat redistribution syndrome, which it concedes was a completely unexpected side-effect of anti-viral drugs. These drugs had, of course, been tested on animals. Even our closest relatives - chimpanzees - do not develop AIDS, so it is difficult to see how experiments on rats and guinea pigs can produce any useful knowledge about this disease.

Most illness in the industrialised world is a result of diet and other lifestyle factors, stress and pollution. Health research should address these variables: observing correlations between them and the incidence of particular diseases.

It is disingenuous for animal researchers to keep restating the facts that their work meets the requirements of the Home Office. There are just 21 Home Office inspectors for 16,000 animal experiment licence-holders, and they failed to stop gross cruelty at Huntingdon Life Sciences and Cambridge University, which was eventually exposed by undercover animal rights activists.

It is perhaps worth noting that, following a challenge from Students for Ethical Science (SES) in January 2002, the OU Biology Department have withdrawn the claim in their annual report to the Animal Ethical Committee that there is no vivisection at the OU.

REFERENCES

Animal Aid (2002) *Bred to Suffer: Animals as Models of Human Disease*, Animal Aid, Tonbridge, Kent

Erkinjuntti, T., Østbye, T., Steenhuis, R. and Hachinski, V. (1997) The Effect of Different Diagnostic Criteria on the Prevalence of Dementia, *New England Journal of Medicine*, **vol. 37** pp. 1667-74

Ince, P.G. 2001) Pathological correlates of late-onset dementia in a multi-centre, community-based population in England and Wales, *The Lancet*, **vol.357**, issue 9251 pp. 169-75

Langley, G., Harding, G., Hawkins, P., Jones, A., Newman, C., Swithenby, S., Thompson, D., Tofts, P. and Walsh, V. (2000) Volunteer Studies Replacing Animal Experiments in Brain Research, *ATLA* **vol.28**, pp. 315-31

Pohjasvaara, T., Mäntylä, R., Ylikoski, R., Kaste, M. and Erkinjuntti, T. (2000) Comparison of different clinical criteria (DSM-III, ADDTC, ICD-10, NINDS-AIREN, DSM-IV) for the diagnosis of vascular dementia, *Stroke*, **vol.31**, issue 12 pp. 2952-57

Pomfrey, V.J. (2002) Oxidative stress and late-onset dementia - a mini-review (examinable component for OU course SD805, available from SES)

Students for Ethical Science (2004) 'Noteworthy Quotes' available from SES

Produced by
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