Letters

Pet Scan Controversy

In his article about the PET (position-emission tomography) scan controversy (Research News, 13 Apr., p. 143) Jeffrey L. Fox equates PET scanning, a *general* technique (*1*) for doing quantitative in vivo tissue autoradiography with a *specific* tracer technique designed to measure glucose use using the glucose analog 2-deoxy-D-glucose developed by Louis Sokoloff and his colleagues. The article clearly implies that the future of PET scanning depends on the resolution of a controversy currently surrounding the validity of the Sokoloff tracer kinetic model. Nothing could be further from the truth. For neurological studies PET scanning employs a wide variety of reliable, quantitative tracer kinetic models and appropriately labeled positron-emitting radiopharmaceuticals to measure such diverse things as local blood flow (*2*), blood volume (*3*), oxygen consumption (*4*), tissue *p*H (*5*), blood-brain barrier permeability (*6*), tissue drug distribution, and receptor pharmacology (*7*), as well as glucose metabolism. PET is also being applied in research on other organs, particularly the heart, to study a variety of functions (*8*). In fact, PET methodology can be effectively and successfully applied, as it is in our own laboratory, without ever relying on the use of deoxyglucose for the measurement of cerebral metabolism. An indictment of PET scanning on the basis of questions surrounding the performance of a single tracer model is equivalent to an indictment of tissue autoradiography on the basis of a single tracer or tracer model or of light microscopy on the basis of a flawed stain.

In the opening paragraph of the article, Fox implies that PET has been developed through the past 7 years. In fact, PET has been developing for at least 10 years (*9*). The implication in the last paragraph of the article that people are turning to single photon emission tomography and nuclear magnetic resonance (NMR) because of the shortcomings of PET is simply incorrect.

For the foreseeable future, radiotracer methodology and PET will be the most sensitive approaches to truly quantitative, regional, in vivo measurements of tissue biochemistry and metabolism in humans, notwithstanding the development of NMR spectroscopy and single photon emission tomography. Those who have supported PET development should be comfortable in the knowledge that, regardless of the outcome of the Sokoloff model controversy, PET is alive and well and will flourish in the hands of responsible competent investigators.

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M.D.'s in Research

Many would agree with Norman Geschwind's argument (Letters, 20 Apr., p. 239) that physician-scientists, by virtue of their clinical training, can make unique contributions to basic biomedical research, and that both clinician and nonclinician researchers are necessary in this field.

What offends me about the new National Institutes of Health (NIH) Physician Scientist Award (News and Comment, 13 Jan., p. 149) is the disparity between the financial support offered to Ph.D.'s and that offered to M.D.'s who choose to enter postdoctoral research training. The Physician Scientist Award provides 5 years of support, including a $30,000 annual stipend, plus a $10,000 to $20,000 institutional allowance. Thus, the investment made by NIH in training one M.D. is $200,000 to $250,000. This figure approaches the average amount ($270,000) awarded to established investigators who compete for regular NIH research grants. In contrast, the equivalent 3-year National Research Service Award available to Ph.D.'s offers only a $15,000 annual stipend and a $3,000 institutional allowance.

This implies one of two things. Either NIH considers the training of M.D.'s far more important than the training of Ph.D.'s, or NIH is establishing an incentive program for M.D.'s who are apparently unwilling to do research for less money. I hope the former is not true. If the latter is true, it seems appropriate to offer a similar incentive for Ph.D.'s to remain in basic research at a time when increasing numbers of Ph.D.'s are choosing alternative careers.

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Research Sites

The stunning photo of Mount Everest adorning the *Science* cover of 24 February was accompanied by the information that "more than 2 tons of equipment passed . . . to the main laboratory camp." As a biologist saddened by the despoiled conditions of many favorite research sites—visited only by professional colleagues—I cannot resist inquiring whether 2 tons of material were also removed after the work had been concluded.

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Klopfer's concern is very reasonable. However, we removed or burned everything in the main laboratory camp. Actually, Everest remains almost unspoiled with the exception of the Base Camp area and the South Col. We left the mountain cleaner than we found it.

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Erratum: In Table 1 of the report "Monoclonal antibody to Thy-1 enhances regeneration of processes by rat retinal ganglion cells in culture" by D. Leifer *et al.* (20 Apr., p. 303), the unit of measurement, micrometers, was omitted in the third column, "Mean length of processes per cell."