**References**

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As a jogger, I was interested in Bassler's statement that exercise, if sufficiently vigorous, provides "absolute" protection against coronary heart disease. To support this contention, he reports that "the American Medical Joggers Association [AMJA] has been unable to document a single death resulting from coronary heart disease among marathon finishers." But the conclusions to be drawn from this finding are seriously limited by a host of selective factors, both medical and psychological, which might induce a person to participate in marathons.

Since Bassler's statement does not brook exception, one cannot resist bringing up the case of the *first* marathon finisher, sometimes identified as Pheidippides, an Athenian courier. Tradition has it that after the Athenian victory over the Persians on the Plain of Marathon, he ran the more than 22 miles to Athens, cried out in the marketplace, "Rejoice, we conquer," and fell dead. A complicating factor in Pheidippides' demise is that the week before his marathon run, he was called upon to run from Athens to Sparta (in an unsuccessful search for aid in the forthcoming battle), a distance of 150 miles, which he reportedly completed in 36 hours. Since, in this case, documentation of the exact cause of death is unavailable, I, for one, am willing to give Bassler and the AMJA the benefit of the doubt.

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## Transplantation of Cultured Tissue

The report "Tissue cultures: Transplantation without immune suppression" by Thomas H. Maugh II (Research News, 7 Sept., p. 929) does not refer to published reports regarding the failure of animals to reject transplants of cultured cells. In 1966, while in the laboratory of the late I. L. Chaikoff at the University of California, Berkeley, I demonstrated (*1*) that cells dispersed from the thyroid glands of adult rats by treatment with proteolytic enzymes and cultured as monolayers for 3 days are readily accepted when implanted subcutaneously into the backs of thyroidectomized, outbred rats. The implanted cells undergo a complete reorganization, aggregating into follicles identical in structure with those seen in the normal rat thyroid gland, complete with colloid formation. The implants appeared to be in excellent condition as many as 151 days after implantation (the longest interval studied), which indicates that the implanted cells did not elicit an immune response in the recipient animals. However, fresh thyroid tissue implanted into rats thyroidectomized by the same procedure was rejected.

The glands formed from the cultured cells were completely functional, as indicated by their capacity to utilize injected radioiodine in a manner essentially similar to that of the thyroid tissue of normal control rats, even maintaining the same concentration of isotopically labeled thyroxine in the circulation. Normal follicular structure was restored after complete dispersal of adult thyroid tissue by proteolytic enzymes, and normal thyroid function was reinstituted in the recipients.

This work has been presented in seminars at a number of universities and research institutions in the United States, Canada, and England, and was included in the 1966–1967 *Year Book of Endocrinology* (2).

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## Administration of Grant Funds

The tight situation with respect to grant money has made it difficult for my bright, younger colleagues to obtain funding for research at a critical time in their careers. This makes it imperative that appropriations to the granting agencies be as effectively allocated as possible. Every dollar should go into the research for which Congress approved it. In these lean times, the investigator cannot support an institutional bureaucracy with his research funds. It is undeniable that the universities need and deserve federal assistance. However, this should come from programs specifically for such purpose, not from research funds.

I review proposals to the National Science Foundation and am upset by the large slice of potential research funds taken by institutions to administer the grants. These are calculated as a percentage of "salaries and wages," from 45 percent for on-campus research and from 30 percent for off-campus research. I am told that this is necessary to cover the expense of the paperwork.

This summer I had the enlightening experience of receiving a modest grant from a nongovernment organization. A check for the entire grant sum was sent to me. Thus I had all the administrative burdens of handling the paperwork, paying an assistant, and ordering supplies. I found that writing a letter and a check to cover a purchase took much less time than filling out a request form, having a requisition form typed, signing it, routing it for the signatures of three officials, and awaiting the happy day, a week or more later, when a purchase order finally made it off campus. Obviously my supplies arrive sooner if I do not have the expensive "help" of university red tape.

The message should be clear. Limited research funds could be spread productively to more investigators if grants could be awarded directly to the principal investigator to administer. If an institutional framework is necessary to prevent dishonesty or incompetence on the part of scientists, does the institution not receive sufficient reward in the form of recognition of its faculty's research, the intellectual sharpening of a faculty actively pursuing new knowledge, and the capital equipment it obtains for the research?

Even if a case could be made for indirect costs, some bureaucracies appear to be more efficient than others. My institution "gets by" on 46 percent of salaries and wages, while others need 60 to 65 percent. Does this not suggest that some red tape could be eliminated, permitting more research per dollar awarded?

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