LETTERS

Warnings

60 MINUTES (AUSTRALIA)

The funding of research on cardiovascular disease is encouraged by the president-elect of the American Heart Association, who calls for an end to this "major public health problem." Another reader expresses caution about "misplaced confidence" in cholesterol-lowering drugs, asking whether they can effectively lower the incidence of heart disease in the near future. Two critics of an Australian government program to infect rabbits, considered pests in Australia (at right, Australian rabbit), with a calicivirus which causes rabbit hemorrhagic disease warn that the virus may not be "species-specific" and urge that more research be conducted.

Battling Heart Disease

On behalf of the American Heart Association, I applaud *Science* for assembling the series of articles in the 3 May issue describing recent advances in our understanding of the molecular basis of cardiovascular disease, the number one killer and major cause of disability of people in the United States. As Michael S. Brown and Joseph L. Goldstein note in their editorial "Heart attacks: Gone with the century?" (p. 629), scientific understanding of the role of cholesterol in atherosclerotic coronary heart disease and medical treatment of hypercholesterolemia has advanced significantly. However, much more needs to be accomplished before the American Heart Association and the National Heart, Lung, and Blood Institute's Heart and Vascular Disease Division (HVDD) can close their doors.

Whether cardiovascular disease retains its deadly ranking into the next century will depend on whether our nation is willing to fund research in this important area in an amount that it deserves. In a recent public opinion survey, the overwhelming majority of Americans want to retain world leadership in cardiovascular and stroke research and are willing to spend more money to do so. Unfortunately, this has not been translated into the budgeting process at the National Institutes of Health (NIH). While the overall NIH budget increased 31.3% in constant dollars from 1985 to 1995, the budget for HVDD actually decreased 5% in constant dollars during the same time period. The fiscal year 1995 budget for HVDD was $669 million, whereas if the division had gotten its fair share of the overall NIH increase it would be $934 million, a shortfall in 1 year alone of $265 million. This persistent underfunding of heart disease research has discouraged young people from entering the field: In 1994 there were 45% fewer RPGs (Research Project Grants) and 63% fewer RO1 (investigator-initiated) grants awarded by HVDD to individuals under the age of 40 than there were in 1984.

Unless the trend of underfunding research in cardiovascular disease is reversed, Brown and Goldstein's vision of ending heart disease as a major public health problem early in the next century will not be realized.

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Response: We emphatically agree with Breslow.

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Several facts conflict with the assertion by Brown and Goldstein that "Exploitation of recent breakthroughs . . . may well end coronary disease as a major public health problem early in the next century."

First, in the United States alone, the incidence of coronary heart disease is more than 13 million and increasing. It remains the single most frequent cause of death. Despite a decrease in age-standardized coronary death *rates* of more than 50% since their peak in the 1960s, the *numbers* of deaths have remained approximately 500,000 per year and have increased from 1992 to 1993, the most recent years with final tabulations (*1*). This seeming paradox

results from growing numbers of the U.S. population attaining ages at which coronary death rates are highest.

Second, the same demographic process brings increasing proportions of the world's populations, especially in developing countries, to middle and later adult ages, at which coronary rates soar. The effect of this profound demographic change is compounded by adverse changes in diet, physical activity, and use of commercial tobacco products. These changes together are expected to produce major increases in coronary heart disease morbidity and mortality in coming decades and have done so in places as diverse as Scotland and Singapore. The World Bank is examining these trends and the potential for programs to combat them, especially in developing countries, as a major priority (*2*).

Third, the impressive outcomes of clinical trials with the cholesterol-lowering drugs called statins (*3*) are rightly hailed by Brown and Goldstein. But it should not be overlooked that the people studied in those trials were largely survivors of an earlier heart attack; those whose initial manifestations of coronary disease were fatal cannot be helped by medical interventions. Further, even under the exceptionally favorable conditions of closely monitored treatment in clinical trials, relative to medication use in the general patient population, the majority of expected deaths (based on rates in the placebo group in each trial) were not prevented in any of the trials. Hence the recent recommendation to the National Heart, Lung, and Blood Institute by its Task Force on Research in Epidemiology and Prevention to place the highest priority for coronary disease prevention on prevention of the risk factors—such as elevated cholesterol concentration—in the first place (*4*). This is a public health challenge of the first order.

Well-founded optimism is welcome, but misplaced confidence could undermine the intensified public health efforts needed to address the continuing epidemic of coronary heart disease and its risk factors, both in the United States and throughout the world, for the foreseeable future.

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Release of RHD Virus in Australia

The defenders of the rabbit hemorrhagic disease (RHD) virus release program (Dan Drollette, News & Comment, 12 Apr., p. 191; ScienceScope, 19 April, p. 341) appear to have confused the concepts of "host switching" and "host range" (*1*). Alvin Smith and I have raised the concern that the host range of this agent, first described in 1984, is not known. Our concern has been that widespread release of this virus to a continent apparently lacking experience