countries. To expect that large funding grants would spontaneously produce the ability to perform such activities is a logical leap.

In addition to concerns of institutional capacity, there are ethical implications of such work. Although Lemery notes the importance of ethical oversight, the risk of violating medical ethics may outweigh any potential goodwill such efforts might garner. When the focus of medical care turns from the patient to higher ideological purposes, there is a risk that physicians will violate their ethical obligations. These issues are complicated by the context of providing care in a foreign country in which physicians face cultural challenges and the potential for imperialistic overtones. It is not clear that the ethics of global health can withstand the burden of additional confusing guiding principles.

For partnerships between governments and academic institutions to be effective, the capacity of academic global health programs should be built over time in a way that focuses on the needs of low-resource populations without containing ulterior motives. These collaborative efforts should focus on the principles of humanitarianism more than those of diplomacy.

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Financial Disclosures: Mr Leeds reported serving on an advisory committee to the Emory University Global Health Institute. Mr Leeds and Ms Zaeh reported serving on the leadership committee for Emory Medishare, an affiliate of the international nongovernmental organization Project Medishare for Haiti. They do not receive compensation for these positions.


In Reply: Issues of global health have garnered more public and private resources in the past decade than ever before, and university-based global health programs have likewise emerged to promote welfare overseas through academic partnerships. Mr Leeds and Ms Zaeh suggest that the current capacity of these programs is too small to have a meaningful effect. Yet current trends suggest that these programs are indeed growing, and this nascent stage may be the best time to discuss and to shape their potential.

I agree that medical diplomacy is a concept that historically has raised concerns. But as the scope and practice of global health in the United States expands, there may be an opportunity to alleviate many of these suspicions and prejudices and to engage with the framers of US foreign policy in language they understand. To be sure, the ethical framework for governmental support of private or university-based initiatives must be solid; yet to insist they must be mutually exclusive is an opportunity lost.

Leeds and Zaeh caution against imperialistic overtones and wonder whether the ethics of global health can withstand the additional burden of confusing guiding principles. Their concerns are legitimate, yet few speak of Peace Corps volunteers as having ulterior motives. As part of a US government agency, these volunteers have earned an outstanding reputation for delivering on behalf of their overseas partners.

Engaging in robust dialogue on medical diplomacy within the medical profession and with colleagues in foreign policy can help prioritize policy issues of global health governance. It has the potential to better integrate health and human rights into a foreign policy that reflects the best traditions of its practitioners.

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RESEARCH LETTER

Effects of Low-Dose Growth Hormone Withdrawal in Patients With HIV

To the Editor: In an 18-month randomized placebo-controlled study of patients with human immunodeficiency virus (HIV) having abdominal fat accumulation and relative growth hormone (GH) deficiency, low-dose, long-term GH reduced visceral adipose tissue (VAT) but worsened glucose control.1 To investigate changes in VAT and other parameters after GH discontinuation, data from an extension in which participants crossed over from their initial treatment (months 0-18) to the opposite treatment (immediately after the month 18 visit through month 36) were analyzed.

Methods. Of 21 participants originally assigned to receive GH who finished initial treatment (months 0-18), 20 crossed over to receive placebo, 17 of whom (85%) completed the 36-month study. Of 27 participants originally assigned to placebo who finished initial treatment (months 0-18), 24 crossed over to receive GH, 20 of whom (83%) completed the study. Participants who dropped out were not different from completers. Patients but not researchers remained blinded to treatment status.

Determination of aggregate change for months 24, 30, and 36 vs initial baseline was performed as previously described3 for months 6, 12, and 18, using longitudinal mixed modeling and repeated-measures analysis of variance including all available data. All P values are 2-sided and P < .05 was significant. Power calculations were previously reported.4 Analyses were performed using SAS version 9.2 (SAS Institute, Cary,

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North Carolina). The study was approved by the Massachusetts General Hospital institutional review board, and participants provided written informed consent.

**Results.** Among participants who received GH during the first 18-month period, VAT increased 9.3% (95% confidence interval [CI], 2.9%-15.8%) within 6 months of crossover to placebo (P=.007 vs 18 months) (FIGURE). The rebound in VAT after GH discontinuation (months 24, 30, and 36) was large, with an aggregate increase over initial baseline of 8.3% (95% CI, 0.6%-15.9%; P=.046), much larger than the small decrease in VAT seen among those who received placebo during months 0 through 18 (P=.008) (Figure). This result remained significant in sensitivity analyses controlling for age, sex, physical activity, and dietary intake.

After discontinuation of GH, insulinlike growth factor 1 (IGF-1) returned rapidly to initial baseline levels (Figure). For metabolic variables that had changed significantly with GH during the primary efficacy phase, the aggregate changes in triglyceride and diastolic blood pressure values after crossover to placebo were not significantly different from initial baseline. However, aggregate 2-hour glucose levels were significantly higher by 9.8% (95% CI, 0.6%-19.0%; P=.048) after crossover compared with initial baseline, suggesting residual adverse effects after GH discontinuation. A detailed table of all outcome data is available from the authors on request.

None of the patients switching to placebo changed antiretroviral class after GH discontinuation.

**Comment.** Low-dose GH for 18 months significantly reduced VAT, but after GH was discontinued, VAT rebounded rapidly to a level that was significantly above initial baseline values. Rapid rebounds in VAT were seen in studies of HIV-infected patients receiving much higher-dose GH, but this study is the first to investigate the withdrawal of long-term, low-dose GH in this population. The change in VAT was larger in participants receiving placebo after GH crossover than in those receiving placebo in the first half of the study, and thus likely represents more than the natural history of change in visceral fat among HIV patients.

Levels of IGF-1, which is responsible for certain actions of GH, were not lower than baseline after GH withdrawal, but further studies are necessary to determine whether low-dose GH reduces endogenous GH activity, accounting for the changes seen after GH discontinuation. The conclusions in this study are limited to low-dose GH, and HIV patients using higher doses of GH may experience different changes in VAT and glucose during and after GH discontinuation.

Growth hormone is not approved by the Food and Drug Administration for use to reduce visceral fat in HIV and may be associated with a deleterious rebound in visceral adiposity after discontinuation.

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**Author Contributions:** Dr Grinspoon had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Study concept and design:** Lee, Grinspoon.

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Acquisition of data: Lo, You, Liebau, Grinspoon.

Analysis and interpretation of data: Lo, You, Lee, Grinspoon.

Drafting of the manuscript: Grinspoon.

Critical revision of the manuscript for important intellectual content: Lo, You, Liebau, Lee, Grinspoon.

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Disclaimer: The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center for Research Resources or the National Institutes of Health.

Additional Contributions: Jeffrey Wei, BA, Massachusetts General Hospital Program in Nutritional Metabolism, helped with data collection and analysis. Mr Wei did not receive compensation for his role in the study.


CORRECTION

Unreported Potential Competing Interest: In the book review of Acute Care Surgery: A Guide for General Surgeons, published in the June 9, 2010, issue of JAMA (2010;303[22]:2299-2300), information about a potential competing interest should have been reported. On page 2300, after the Financial Disclosures section, the following information should have been included: “Additional Information: Dr Alam is a faculty member of the academic division in which Dr Velmahos, one of the 4 editors of the book he reviewed, is the division chief.”