many of the problems ought not to go to the physician working with the limited resources he may have available or to the pharmaceutical house. A lot of our current problem is a reflection simply of our American lifestyle.

Mr. GORDON. May I interrupt for just a second? Do I understand what you are saying is that an additional danger of these oral hypoglycemic agents—I mean their very presence has been a danger—because it has taken the attention of the doctor and the patient away from the essentials of diet and exercise to a much less rigorous regimen of just taking pills?

Dr. SIMS. Thank you for stating it so well. That is precisely what I mean. The presence of this option over the 20 years that it has been available has been undesirable just for that reason. In the preinsulin days, when Dr. Allan did not have that particular option, he did very well with diet in this type of patient. I am pleased also to see that you mentioned exercise. That is about the fourth time the word has been mentioned in any of these hearings.

Mr. GORDON. And one other point: Am I also correct in that you are also saying—I am trying to summarize this in my own words—that insulin and the oral hypoglycemic agents are really treating or at least being used to treat symptoms and not the basic problem which would require a change in lifestyle, which would include diet and considerable exercise?

Dr. SIMS. Precisely. Consider the problem, say, of a relatively young housewife who has had a couple of babies and gained a lot of weight. Unfortunately she has selected the wrong parents, who are both diabetic, and her grandmother was obese. If she develops glucosuria, the odds are that the average dietary effort in the busy physician's office will not correct it. She is already running an elevated blood insulin and has an increased insulin response. If then we give her a shot of insulin every day, we are instituting a regimen that will just progressively make her gain more and more. And ultimately the increased weight is going to interfere with her well-being and probably will have a greater negative impact on her survival than might the toxicity of the oral agents itself had she been given them.

Now, the fourth option is exercise. I emphasize it as a potent means of treating a patient, although I am well aware that the patient applying to a large hospital clinic, elderly or far advanced in his disease, is not going to join the squash team.

Mr. GORDON. Dr. Sims, I might point out to you that there are certain hazards in exercise, too. One being the broken bone that I have in my foot. That is the result of playing tennis.

Dr. SIMS. Perhaps, Mr. Gordon, if you should have been exercising more, maybe your metatarsal bone would have stood up under the strain.

To resume, support for the use of exercise is given by some work by a Dr. Bjorntorp in Sweden, who measured the insulin response in obese, middle-aged men before and after a course of physical training, even though he urged them not to lose weight. The insulin response to glucose was markedly reduced. In other words, exercise alone did much to decrease the insulin resistance which is a major problem, in the maturity onset diabetic. The effect of exercise is