

terest in this problem, should read the whole document, and I will try to draw attention to those aspects which in my view are important.

I will refer to the page numbers, and to the various diagrams so that those who have copies of this statement will easily be able to follow the gist of my argument.¹

The first point I would like to make is this. That when contraceptive medication was introduced, the possibility that the biochemistry, the chemistry of the body would be modified in very many ways was not fully understood.

Now, it is all very well for doctors to say "Of course we understood it. We anticipated it. Pregnancy does the same thing," this is not true. I refer to Dr. Gregory Pincus' book published in 1965 and called *The Control of Fertility*.

Dr. Pincus, as you know, was a very great man, a great experimenter, endocrinologist, and the originator with others of this form of fertility control. But in his book, which is very comprehensive, he barely refers to the metabolic effects of the contraceptive medication.

Why is this? It is because when the book was published the metabolic effects were either inadequately understood or not understood at all. Now Dr. Doar and I had the opportunity of discussing this point in great detail with Dr. Pincus in the following year. He visited us in our laboratory, and we discussed the metabolic findings which we had made, and it was apparent to us that Dr. Pincus was unaware of a wideranging nature of metabolic intervention which follows and which must follow from the use of this type of chemical.

When I say these changes occur, I mean they occur in everybody, more in some than in others, but no person entirely escapes from the metabolic influence of these compounds. It is merely that some manifest the changes more obviously than others.

Now, before I discuss the contraceptive medication as such, I want very briefly to refer to my own personal interest in steroids and their effects on metabolism because I believe that this is relevant.

We had in 1953 the introduction of very potent steroids for the control of a certain aspect of metabolism called protein metabolism. These substances were derivatives of the male hormone testosterone and they were called anabolic steroids. We studied these compounds, which were very heavily promoted as the present oral contraceptive. We studied these compounds for a number of years, and we became aware of the fact that although they were anabolic in their effect on protein metabolism, they had very many untoward, that is to say undesirable and even harmful metabolic effects such as the following.

They altered carbohydrate or glucose metabolism.

They elevated the lipids in the blood, the fats in the blood.

They altered the metabolism or the ability of the body to handle other important hormones such as cortisone or cortisol as it should be more properly called, and they were even very effective oral contraceptives, both in men and in women.

My own personal experience of these compounds was that they were harmful. Some of my patients had undesirable clinical effects, such as coronary disease, and when I became aware of this potential it was no time at all before I had all my patients stop taking the medication,

¹ See information beginning at p. 6312.