

Dr. DAVIS. It is reversible up to a point. That is, irreversible changes can be produced if the dose is high enough and you give it long enough. The disturbing thing about some of the changes in metabolism is that they tend to be progressive. That is, in the first year of use you get X percent of people with an alteration in carbohydrate metabolism. If they continue on with the medication, in second year of use the fraction of women that are affected appears to increase, and by the third year of use you can have as much as 75 to 80 percent of the people who are taking the oral contraceptive with definite alterations of carbohydrate metabolism.

Now, most of these alterations after 1, 2, or 3 years appear to be reversible, but I don't think anyone is prepared to say what would happen if we were talking about 20 years.

We know, for example, that pregnancy, especially repeated pregnancies, which stress the body's metabolism in perhaps a similar way, increase the hazard of diabetes.

Senator NELSON. I note from some of the literature that very informed and distinguished physicians feel that a woman using the pill under the proper circumstances, that is with a physical examination semiannually and a Pap's smear and so forth, that in fact that woman is protected better against the occurrence of some disease, perhaps cancer, since this woman receives a regular physical examination which seeks to determine whether or not there is breast cancer, cervical cancer and so forth. What is your observation about that?

Dr. DAVIS. I would certainly agree with that, Senator Nelson, with respect to certain conditions. Unquestionably there are changes that can be discovered by careful and repeated medical examination, and I think that one of the greatest single contributions to the control of cervical cancer in this country has been birth control programs, not just pill birth control programs, but birth control programs in general.

For the first time this has caused large numbers of women to come for regular and periodic Papanicolaou smears, and with respect to carcinoma of the cervix, you know there has been some question whether cellular changes might have been produced by the use of oral contraceptives. I am unconvinced that this is so with regard to the cervix. I don't think this case is proven one way or the other. But what I am convinced of, is precisely what you say: That so long as the woman is getting regular examinations she can be effectively protected against cervical cancer because it can be found at such an early stage of development that it can be completely cured.

With regard to the breast we are in a different situation and that is, I think, one of the reasons for concern. In the first place, there is more breast carcinoma in this country than there is cervical cancer. But worse than that, the periodic examination for breast cancer is not of the same quality or effectiveness. By the time you find a lump, a palpable lump or nodule in the breast, many of these breast lesions have already been there for years, and have evolved to the point that they may have already spread to some other area.

Now, there are some 75 to 80,000 women in this country per year who are developing diagnosed carcinoma of the breast. If the chronic taking of steroid hormones eventually increased this by only 10 percent, we would have a very, very hazardous situation on our hands, but a very difficult situation to measure. In the first instance, you have to wait for years to get this kind of information and it took us 10 years