other studies (fatigue, tiredness, lethargy, mild to moderate depression, and loss of sexual desire), there has also been an alteration in neurohormone metabolite excretion. There also seems to be some variation in neurohormone excretion relative to size of dose of the pill. Again, I think, this would bear somewhat on the question Senator Javits made. At the present time, these studies are very preliminary, and number of patients studied must be increased before we may draw very many final conclusions from the data available. In another very interesting study, Morris and Udry demonstrated that the general physical activity level of women taking oral contraceptive pills is lower than that of women not taking pills, as measured by the use of a pedometer, which was used daily for a 90-day period. Dr. Morris commented in this study that these women did not complain of depression and had not had a great deal of difficulty with the pills. He pointed out that if there were any bias in the study, it would be on the side of women who had experienced the least side effects. Now, this is very similar to the running activity, depression of running activity that one sees in animals, and this is precisely why they did the study this way, a general lowering of the physical activity of animals, if you study them in running cages.

In summary, the studies I have discussed in some detail with you are in substantial agreement on a number of points. First, there is a considerable incidence of mild to moderate psychiatric morbidity associated with the use of combination oral contraceptive agents. The principal manifestation of this morbidity is in the form of feelings of depression, sleep disturbance, feelings of inferiority, and difficulty in starting work. Neuresthenic symptoms in the form of fatigability and increased emotional lability and irritability are also extremely common. In three of the four studies, there seems to be agreement that those who have required psychiatric care in the past will be more at risk for the development of morbidity, including psychosis. One study also suggests that there may be some increase in depth of illness the longer the medication is taken. The study of Doctors Morris and Udry with regard to the decline in activity would also seem to be in support of the clinical picture described. This would also seem to be compatible with the clinical phenomena generated when other drugs which affect neurohormone metabolism are used. These agents, too, have been associated with a 10- to 15-percent incidence of depression serious enough to warrant discontinuance of medication. These medications would be anti-hypertension agents such as Rauwolfia drugs and so on.

The clinical phenomena accompanying the pseudopregnancy induced by the pill are similar in kind and frequency to those seen during normal pregnancy. There is one significant difference, however, and that is the length of the pseudopregnancy may be much longer than the natural event.

The psychotic reactions seen after withdrawal of medication also resemble the clinical phenomena seen in the psychotic reactions at the termination of pregnancy.

With regard to the effects of combination oral contraceptives on sexual functioning in the human, the expression of sexuality is less closely tied to hormones, but the evidence does indicate that there is