again recognize the fact that women with liver disease, or women who have jaundice or itching while they are pregnant, are very prone to develop liver complications while they are taking oral contraceptives, and this then represents a clear contraindication to their usage. Fortunately, discontinuing the drug usually rapidly "cures" the patient. Finally, it should be pointed out that no deaths have been reported from liver disease in women using oral contraceptives.

It is concluded that several of the metabolic functions of the liver are altered by the steroids of the oral contraceptives, particularly the estrogen portion. The sequelae of these alterations over long-term usage is unknown. The immediate effects include the alteration of several of the laboratory tests used in medical diagnoses. Aggravation of existing liver disease, if present, to the point where jaundice may be seen has also been shown. There is no answer to the query of will permanent liver damage result from the use of the oral contraceptives.

Next, we turn to the lipids.

The lipids or fat in the blood are divided into four major groups: (1) free fatty acids; (2) phospholipids; (3) cholesterol; and (4) triglycerides. These individual lipids are bound to plasma proteins (termed lipoproteins) and carried in the blood. That way they are transported from the site of formation to the site of use. The blood levels of each lipid depends upon a variety of factors including age, diet, weight, sex, and heredity background. In order to meaningfully study any one of these broad groups, each of the variables must be carefully controlled. The importance of the lipids in disease is principally related to the vascular system. It has been found that there is an elevation of total blood cholesterol and the low density (light) lipoprotein levels in many individuals who demonstrate clinically symptomatic coronary heart disease.

A major component of this light lipoprotein group is the triglyceride fraction. Thus, cholesterol and triglycerides are suspect to being related to the cause of this vascular disease. It is also known that there is a markedly lower incidence of coronary artery disease in premenopausal women as compared to men of the same age group or postmenopausal women. These premenopausal women have ovaries that are producing these sex hormones. It has been postulated that (1) the blood lipid levels were altered by ovarian hormones and (2) the lipid levels may be causally related to vascular disease and (3) by altering the ovarian hormone levels in the blood one could also prevent or cause serious vascular disease. Accordingly, many investigators have been conducting experiments on the effects of ovarian hormones in men and post menopausal women, since they represent the most vascular-problem prone groups. Although the results of these studies are not necessarily applicable to the young girl taking oral contraceptives, they have shown essentially no change in blood lipids with progesterone injections whereas the cholesterol and the trigycerides are lowered by estrogens.

Less information is available for the premenopausal female using the oral contraceptives. A review of these studies can be divided into the four lipid groupings. Again it should be noted that these published reports involve different drugs, different dosages, and different durations of treatment in varying types of women and accordingly, cannot always be compared or the results combined. In 1966, Dr. Wynn