

**STUDY OF BIOLOGICAL VARIATION IN SERUM SEX  
HORMONE BINDING GLOBULIN, TESTOSTERONE  
AND INSULIN RESISTANCE IN OBESE WOMEN  
WITH PCOS OF REPRODUCTIVE AGE GROUP**

**A Thesis**

*Submitted by*

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## CONCLUSION

PCOS is becoming a more prevalent disorder among women of reproductive age with lifelong complications. One of the most challenging aspects of this syndrome is its ambiguous diagnostic criteria and vast complexity of characteristics. Metabolic abnormalities lead to an increased risk of cardiovascular problems in PCOS patients as the age and obesity exacerbates these risks.

In our study severity of PCOS phenotypes in PCOS obese patients have indicated high risk of cardiovascular disease (CVD) compared to normal subjects. Sex hormone binding globulin is reduced in case of insulin resistance and actually a very good marker for insulin resistance. Many women with polycystic ovarian syndrome have a high-normal or even a normal total testosterone but have a low SHBG because of they have insulin resistance. Meanwhile testosterone in conjunction with a high-calorie diet seems to promote visceral fat accumulation and insulin resistance in females by a combination of inhibiting lipolysis and promoting lipogenesis.

Based on our study, we conclude that with increased serum testosterone levels and decreased sex hormone binding globulin in polycystic women. Also in PCOS obese women a significant number showed the increase in insulin resistance compared to controls as shown by an increase in HOMA-IR levels. Thus the obese polycystic ovary syndrome (PCOS) woman has a synergistic deleterious effect on insulin, hyperinsulinemia is not the result of decreased insulin clearance, and also associated with a unique disorder of insulin action. Excessive body weight in polycystic ovarian syndrome (PCOS) hastens or exacerbates the complications of the disease.