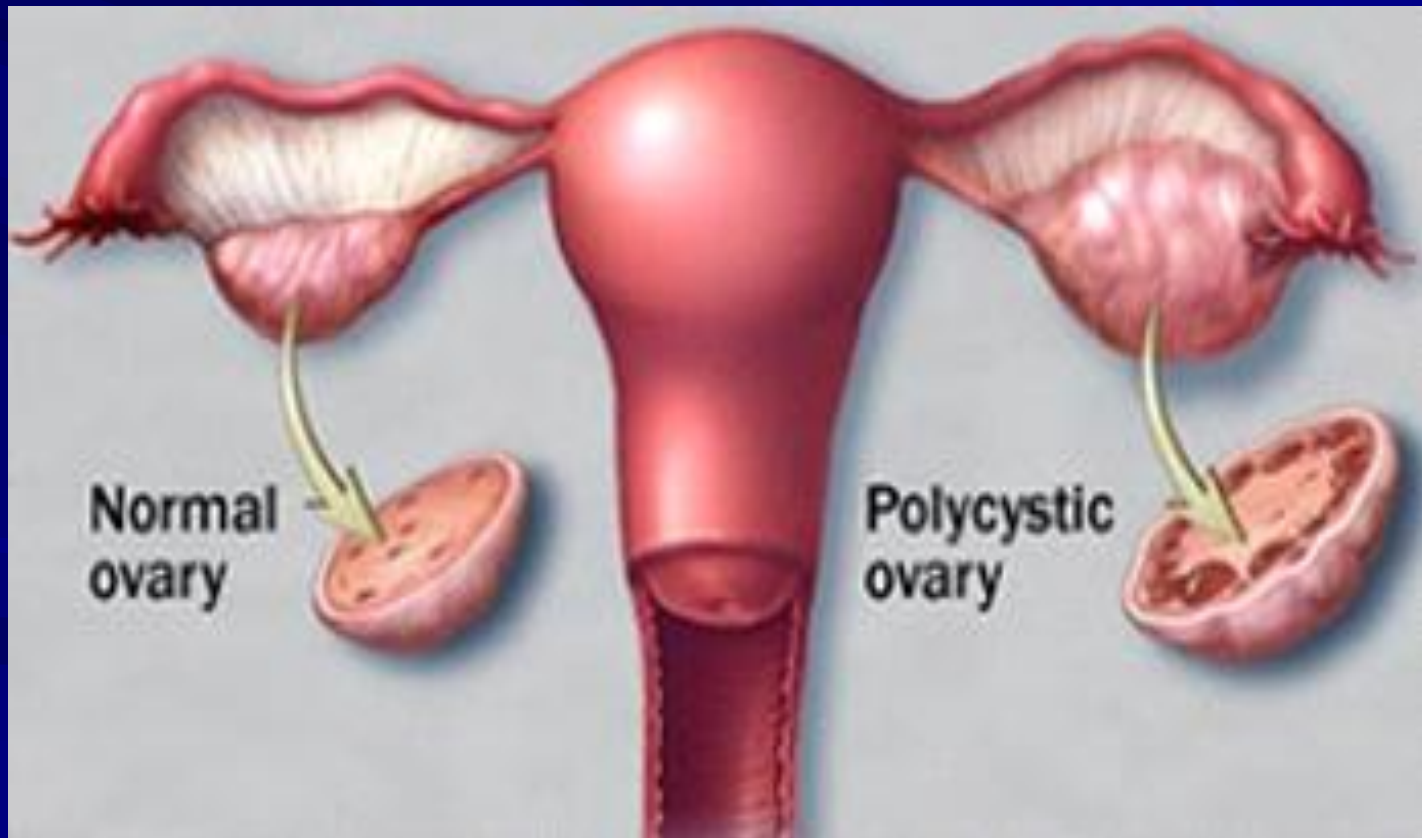


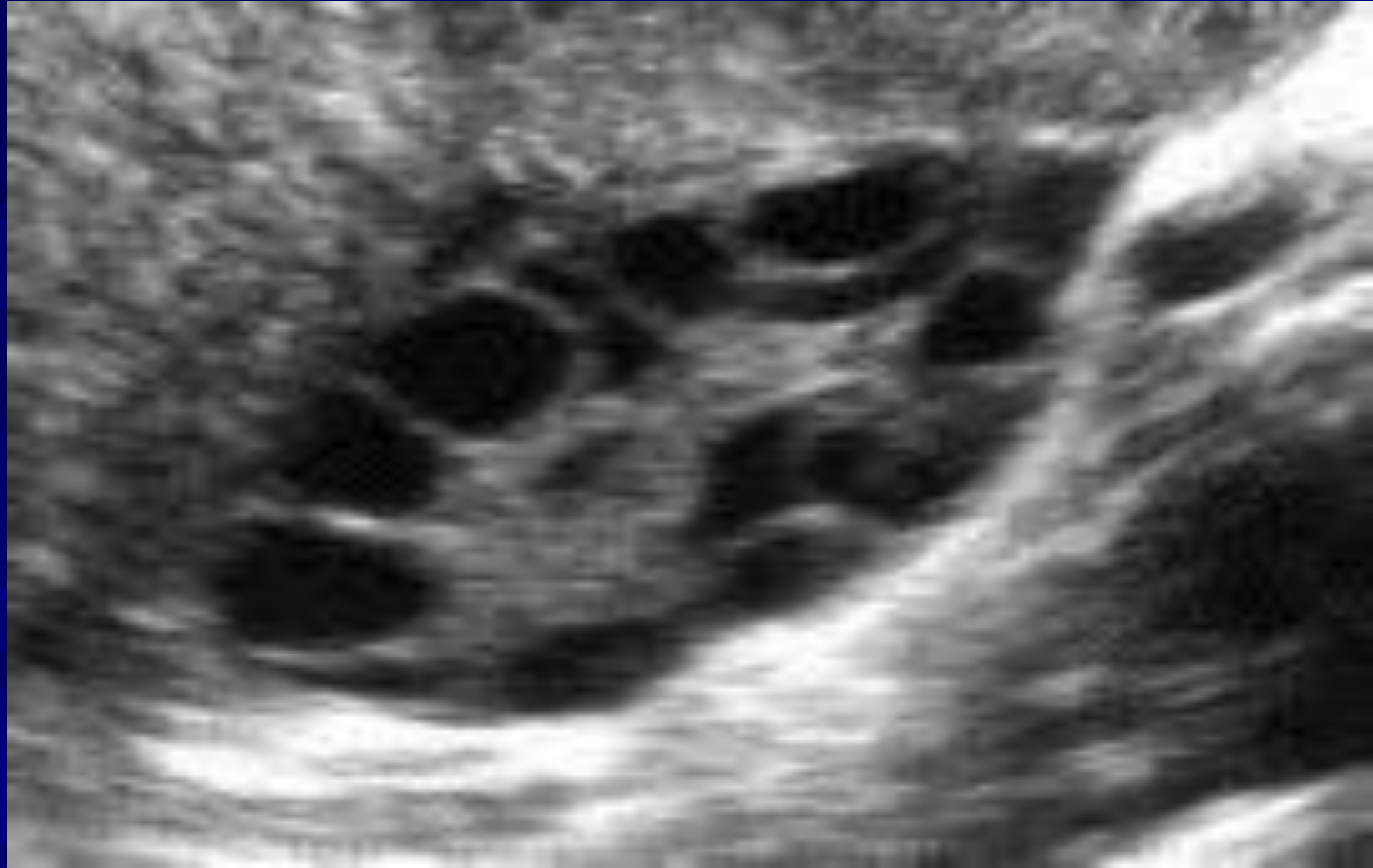
# Polycystic Ovary Syndrome




Definition:

the diagnostic criteria

- Evidence of hyperandrogenism, biochemical &/or clinical (hirsutism, acne & male pattern baldness).
- Ovulatory dysfunction; amenorrhoea; oligomenorrhoea
- Morphological polycystic ovaries (either 12 or more peripheral follicles or increased ovarian volume (greater than 10 cm<sup>3</sup>))





The most  
common  
endocrine  
disorder

**PCOS** AFFECTS 5 TO  
10 PERCENT OF THE  
FEMALE POPULATION.



**POLYCYSTIC OVARIAN SYNDROME** is a complex endocrine disorder that affects five to ten percent of all women. It is the most common endocrine disorder, and is also the leading cause of infertility. For more information about PCOS, visit [www.implementingdesignism.org](http://www.implementingdesignism.org).

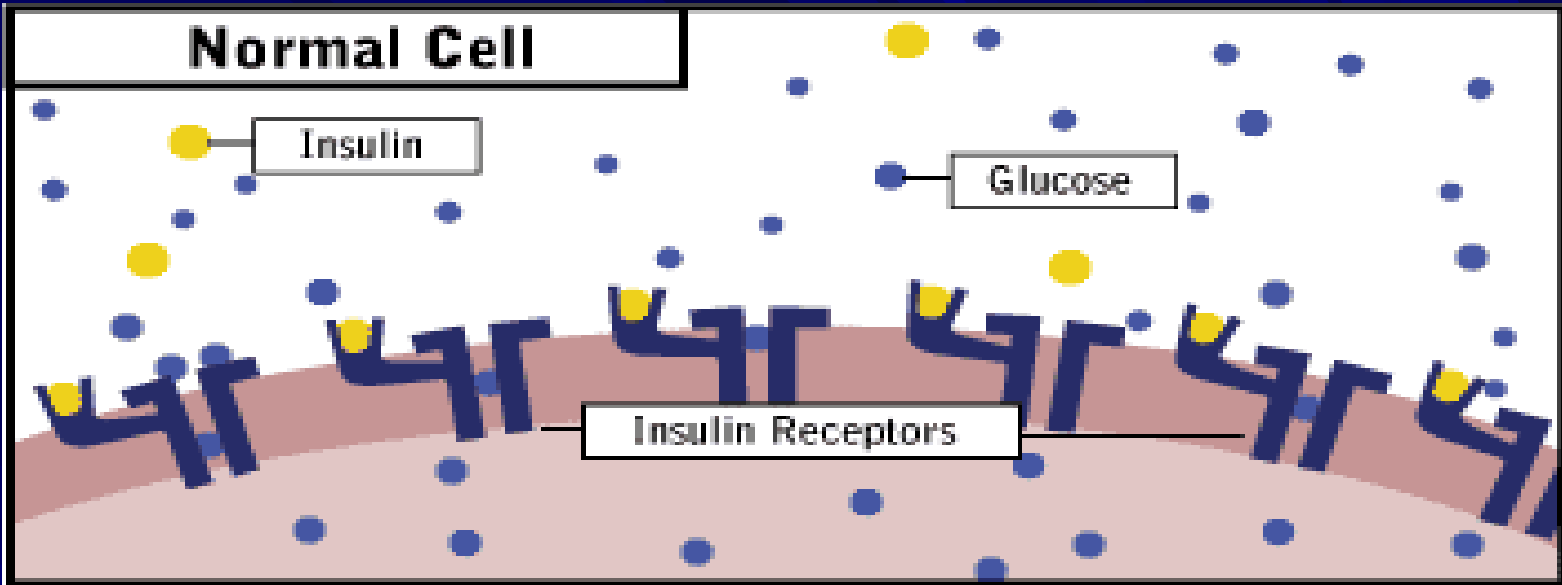
# Aetiology:

- Genetic factor: the prevalence in first degree relatives is 5-6 times higher than in the general population.

## Hormonal factors:

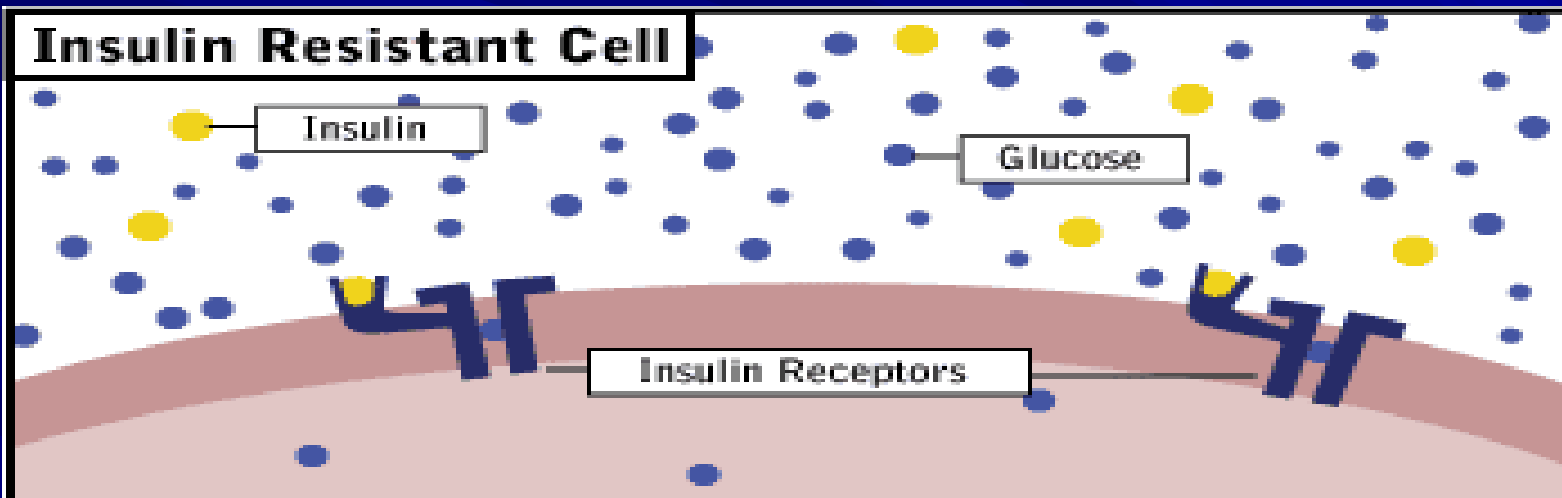
- Hypersecretion of LH
- Hypersecretion of androgens.
- Insulin resistance especially in those with high BMI. Lead to hyperinsulinaemia

## Normal Cell



A Normal Cell contains some 20,000 receptor sites

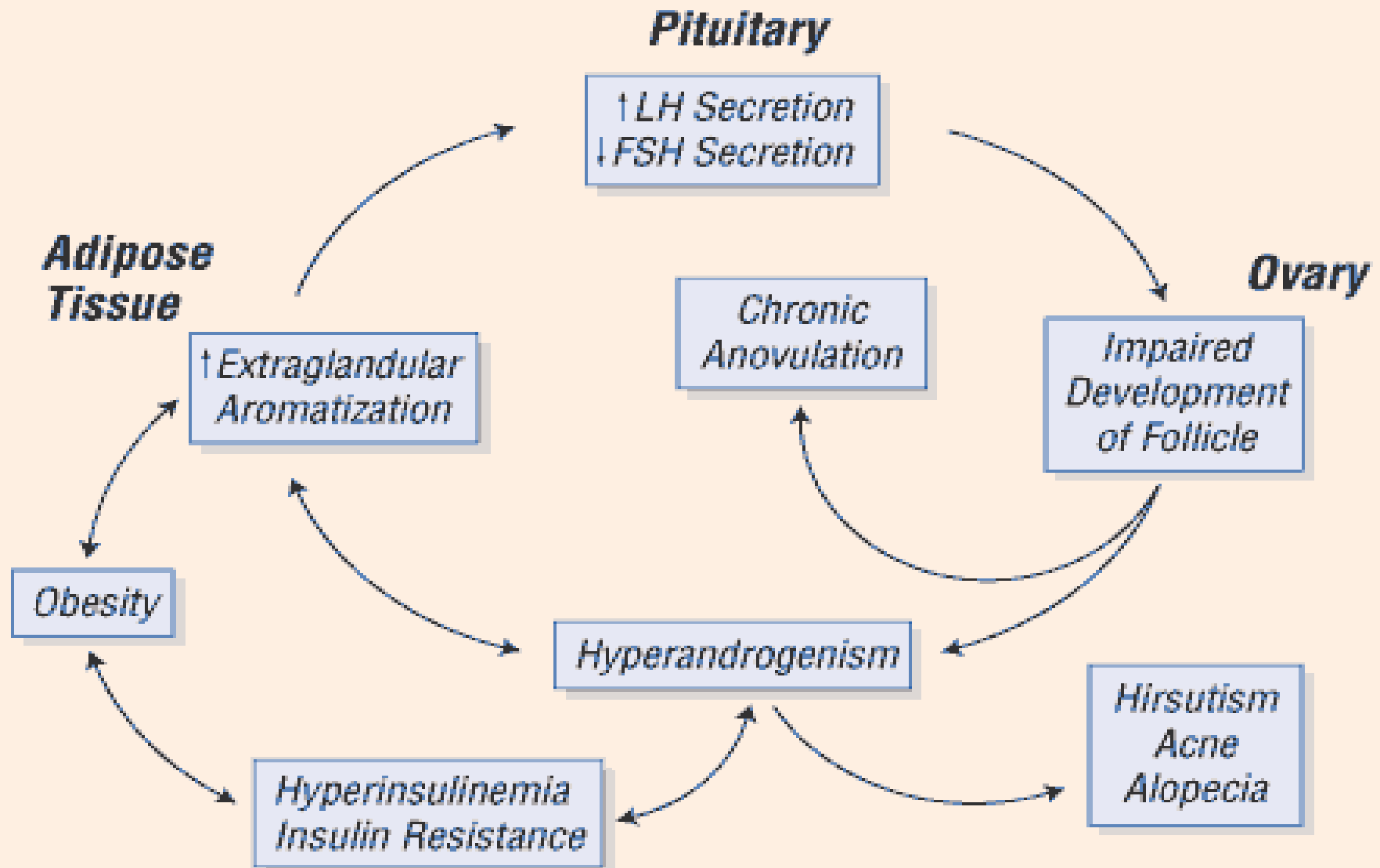
## Insulin Resistant Cell



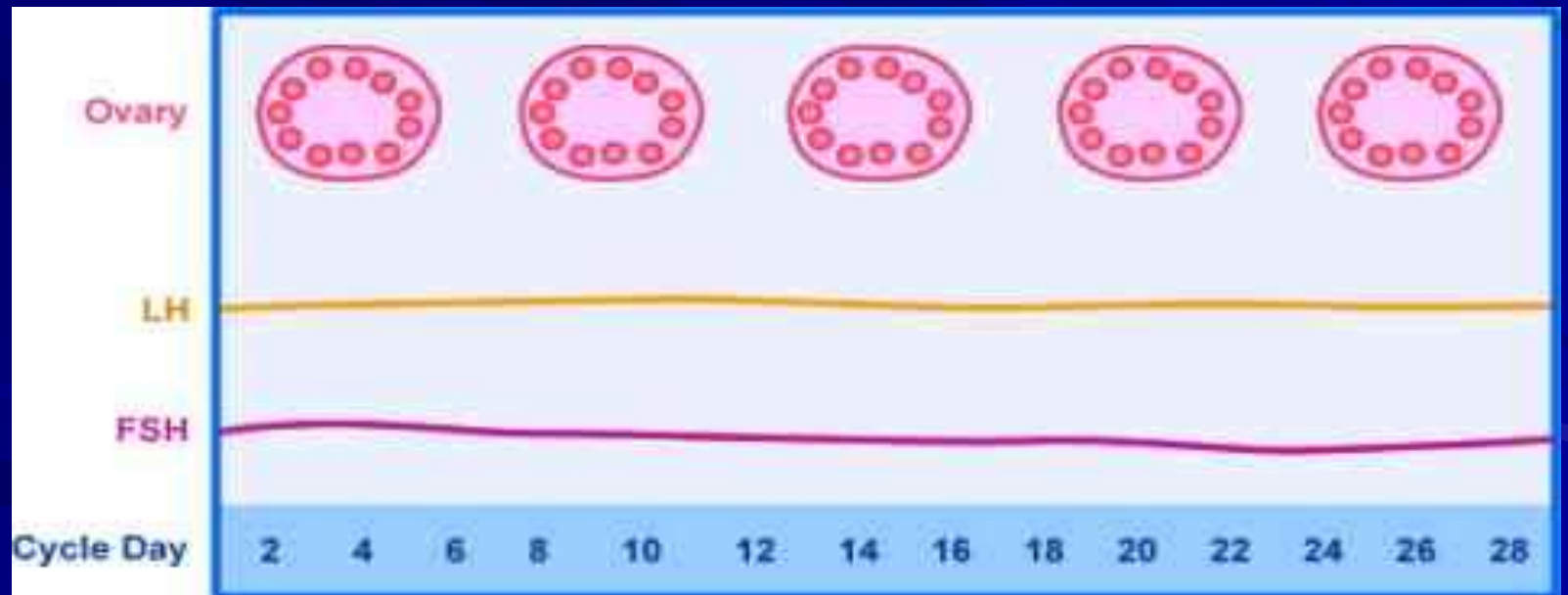
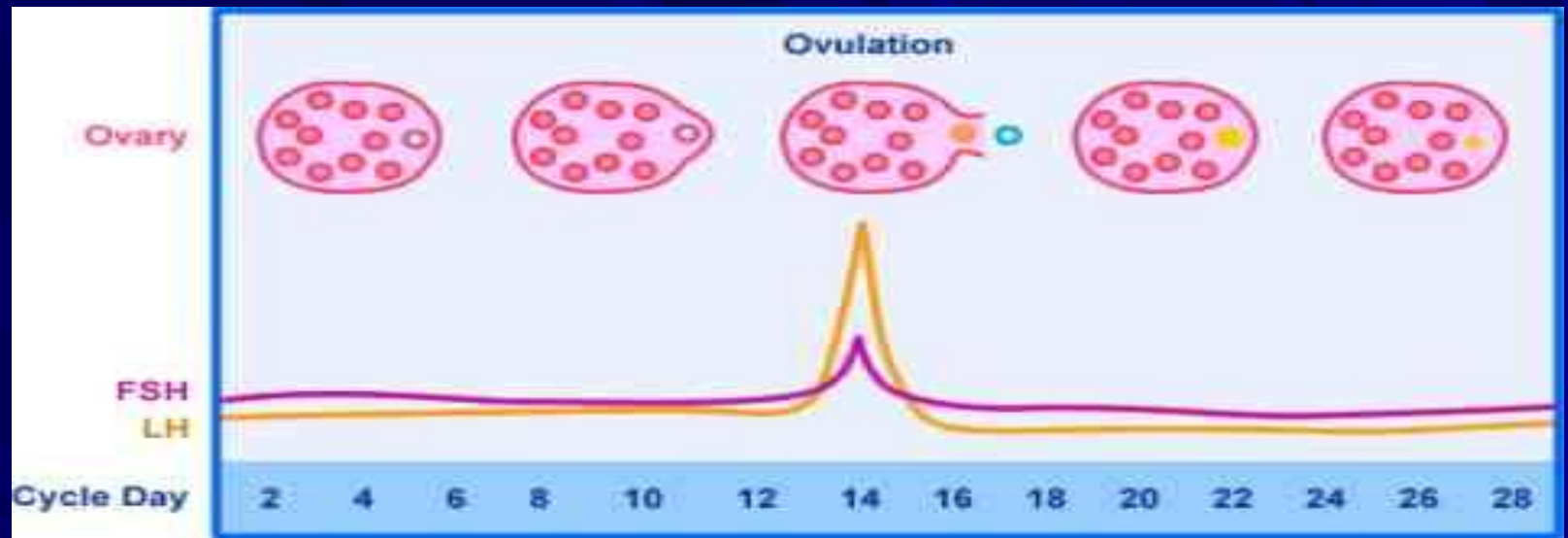
The Insulin Resistant cell has only 5,000 receptors, causing excess free-floating insulin and glucose

**Figure 1**

# ***Pathophysiology of Polycystic Ovary Syndrome***



Source: Rasgon NL (2001)



# Diagnosis:

Diagnosis of PCOS can only be made when other aetiologies have been excluded (thyroid dysfunction, congenital adrenal hyperplasia, hyperprolactinaemia, androgen-secreting tumours and Cushing syndrome).

## Clinical features:

- Oligomenorrhoea/ amenorrhoea: related to chronic anovulation.
- Hirsutism: Assessed by Ferriman-Gallwey hirsutism scoring system
- Subfertility
- Obesity: central fat excess
- Recurrent miscarriage
- Acanthosis nigricans: areas of increased skin pigmentation occur in axillae & other flexures.



Laboratory test:

A raised LH / FSH ratio is no longer a diagnostic criteria for PCOS owing to its inconsistency

The recommended baseline screening tests are

- thyroid function tests: normal
- serum prolactin: mild elevation.
- free androgen index (total testosterone divided by sex hormone binding globulin (SHBG) x 100 to give a calculated free testosterone level)

# Long-term health implications of PCOS:

- Increased incidence of multiple pregnancy, gestational diabetes & pregnancy-induced hypertension.
- Increased incidence of type II diabetes mellitus, hypertension & hyperlipidaemia due to insulin resistance & hyperandrogenism respectively.
- Increased incidence of endometrial hyperplasia & endometrial carcinoma due to unopposed estrogen stimulation.

# Treatment:

## Obesity:

Change in lifestyle with altered diet & exercise might be effective.

- no evidence of a long-term benefit for the use of insulin-sensitising agents (metformin).
- Use of weight-reduction drugs may be helpful in reducing insulin resistance through weight loss.
- Orlistat

## **Oligomenorrhoea/amenorrhoea:**

because of chronic anovulation there is increased risk of endometrial cancer

cyclical progesterone is useful to induce withdrawal bleeds & to protect the endometrium.

Alternatively for those who do not want to conceive oral contraceptive pills can be used.

# Infertility:

- Weight loss : improve both spontaneous & drug induced ovulation.
- Clomiphene citrate: anti-estrogen used for ovulation induction by blocking estrogen receptors with a resultant increase in endogenous FSH production.

used for six months only.

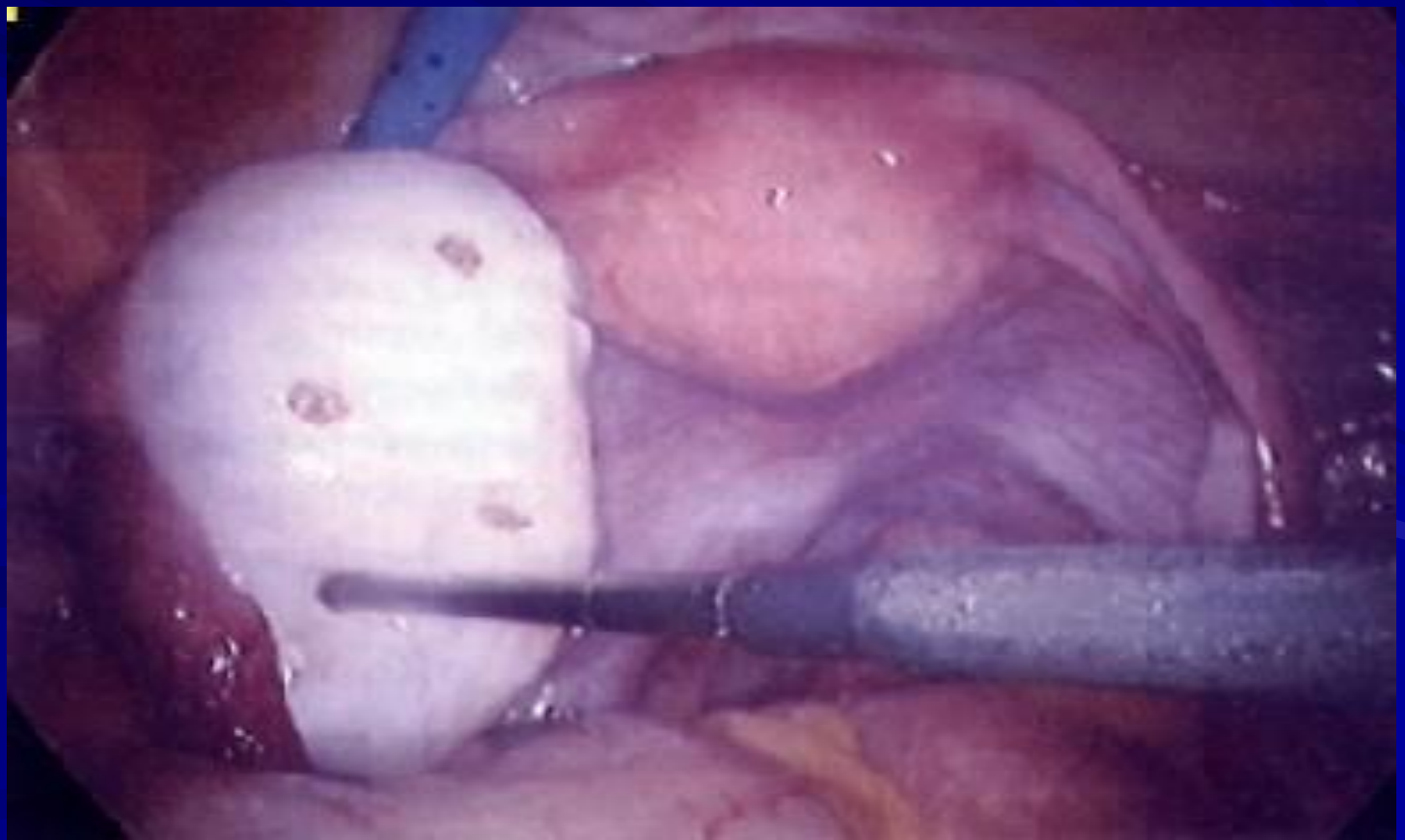
■ **Gonadotrophin therapy:** recombinant FSH & human menopausal gonadotrophin

Because the PCO is very sensitive to exogenous hormones, there is increased risk of developing ovarian hyperstimulation syndrome (OHSS).

- Metformin: biguanide inhibit the production of hepatic glucose & enhances the sensitivity of peripheral tissues to insulin, thereby reducing insulin secretion.

Metformin may also improve menstrual regularity & improve ovarian response to clomiphene.

- Laparoscopic ovarian drilling: with either diathermy or laser, lead to normalization of LH level with increasing ovulation & pregnancy rates.



# Hirsutism:

The aim of treatment is to reduce the androgen level, increase sex hormone-binding globulin or reduce the activity of 5 $\alpha$ -reductase enzyme at the level of the hair follicle.

- Oral contraceptive pills
- Cyproteron acetate
- Spironolactone
- Finasteride
- Physical methods of hair removal

# Acne:

chronic inflammation of pilosebaceous unit.

## Pathophysiology

Acne can be treated with keratolytic agents, antimicrobials & anti-androgenic drugs.

