

# What is happening in the body?

## What is happening in the body in pre-menopause

As the woman approaches the end of her child-bearing years the number of follicles in the ovary has reduced from 250,000 at puberty<sup>4</sup> to about 10,000 follicles at the age of 45.<sup>2</sup> At the menopause many of these remaining follicles become atretic (degenerate) without ever achieving an ovulation. This reduced ovarian activity results in **decreased levels** of the ovarian hormones, **oestrogen** and **progesterone** which is the basis of the symptoms of pre-menopause. This can result in **LONG** cycles or **SHORT** cycles.

### Long cycles

The long cycle may be one with **no ovulation** (anovulatory) or one with delayed ovulation.

### Short cycles

The short cycle may be due to either:

- a short **luteal phase** or
- a short **follicular phase** and **early ovulation**,<sup>2</sup> or
- the **LUF syndrome** (luteinized unruptured follicle syndrome).<sup>3</sup>

### FSH is increased

**FSH secretion** by the pituitary gland is increased due to the **absence** of the follicular fluid peptide **inhibin B**, as during normal reproductive life the secretion of FSH is inhibited by inhibin B. The earliest endocrine change marking entry into the menopausal transition is a major fall in inhibin B.<sup>1</sup> However inhibin B is a very difficult and relatively unavailable assay and would not contribute to the staging system.<sup>5</sup>

### References:

1. Liu JH, Gass ML; 'Management of the perimenopause'; 2006; Pub. McGraw-Hill, ISBN 0-0-142281-1
2. Flynn A, Worthington W; 'Teachers Training Manual'; 'symptothermal multiple index method' of natural family planning.
3. Brown JB; 'Types of ovarian activity in women and their significance: the continuum (a reinterpretation of early findings)'; Human Reproduction Update; 2011; Vol 17; No 2; p141-158. (*this is a classic article which gives a greater understanding of the menstrual cycle throughout the reproductive life of the woman*).
4. Alvero Ruben, Schlaaff William D; 'Reproductive endocrinology and infertility, The Requisites in Obstetrics and Gynecology'; 2007, page 229; ISBN-13:978-0-323-04054-9
5. Soules MR, Sherman S, Parrot E et al; Executive summary: Stages of Reproductive Aging Workshop (STRAW). Fertil Steril. 2001; 76: 874