



Menopause basics

Definitions and symptoms

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Menopause: the reproductive cycle

Stages:	-5	-4	-3	-2	-1	0	+1	+2
Terminology:	Reproductive			Menopausal Transition		Perimenopause	Postmenopause	
	Early	Peak	Late	Early	Late*	Early*	Late	
Duration of Stage:	variable			variable		3-4 yr	until demise	
Menstrual Cycles:	variable to regular	regular	variable cycle length (>7 days different from normal)	≥2 skipped cycles and an interval of amenorrhoea (90 days)		none		
Endocrine:	normal FSH		↑ FSH	↑ FSH		↑ FSH		

Hansen et al. Menopause 2012

FMP average age 51.
*Window of opportunity: 50-60 years or within 10 years of the FMP
Perimenopause: average duration 4-6 years
High oestrogens, ovulation x2 per cycle

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Stages of menopause

Perimenopause

The lead-up to menopause

Menopause

The final menstrual period

Postmenopause

Starts 12 months after the final menstrual period

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Menopause: definition

Natural Menopause

- **Premenopause:** regular cycles
- **Perimenopause:** (menopause transition)
 - Erratic hormone levels including oestrogen swinging high or/and low leads to:
 - changing patterns of menstruation
 - other symptoms may occur
 - can last 2-10 years
- **Menopause:** final menstrual period (average age 51.7 years)
- **Post menopause:** from 12 months after the final menstrual period

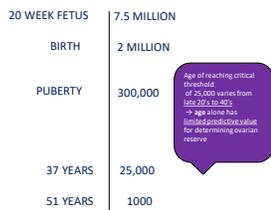
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Menopause: definition

- **Surgical Menopause:** due to removal of both ovaries before expected age of menopause
- **Premature menopause:**
 - prior to 40 years
 - POI 1% < 40, 0.1% < 30 years
 - other causes, chemotherapy or pelvic radiotherapy
- **Early menopause:** between 40-45 years

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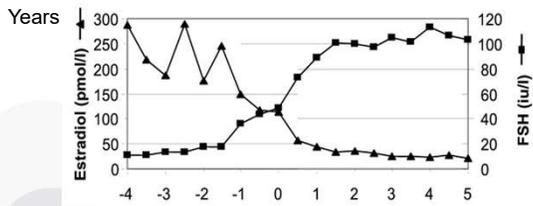
Physiology of menopause



AFTER MENOPAUSE FEW/ NONE LEFT

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Endocrinology

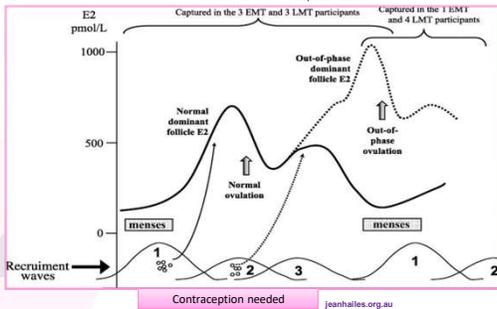


(Burger et al. Recent Prog Horm Res. 2002;57:257-75)

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Schematic luteal-out-of-phase(LOOP)event

Hale GE et al Menopause 2009



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Hormonal changes after menopause

- Oestradiol and oestrone are produced mainly by extragonadal tissues
 - adipose tissue, bone, vascular endothelium, aortic smooth muscle, some brain cells
 - oestrogens produced by these sites act locally, but some enters circulation
- Free testosterone, dehydroepiandrosterone sulfate, androstenedione fall gradually with time

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