SydPath
ST VINCENT'S PATHOLOGY

www.sydpath.com.au

OESTRADIOL INFORMATION SHEET

PHYSIOLOGY

17 beta oestradiol is a steroid hormone which is the main oestrogen in women of reproductive age. In the reproductive years oestradiol is secreted almost entirely by the ovaries in response to FSH and LH from anterior pituitary but is also produced by peripheral aromatisation from various precursor steroids including testosterone. Oestradiol acts via a cytosolic receptor to stimulate bone synthesis and produce the female phenotype. Most oestradiol circulates bound to SHBG (sex hormone binding globulin) however total oestradiol levels are used for clinical assessment. Oestradiol levels are low prior to puberty, after menopause and in men of all ages. During the menstrual cycle, the highest values are seen at ovulation and there is a second peak in the luteal phase due to secretion from the corpus luteum. During pregnancy levels rise from the expected values in the normal luteal cycle throughout pregnancy up to over 200,000 nmol/L (200 umol/L) in the third trimester.

INDICATIONS FOR TESTING

The main purpose for measuring serum oestradiol is assessment of ovarian function in women and is commonly co-requested with FSH for this purpose. Oestradiol is also important in the investigation of gynaecomastia in men. Oestradiol may have other indications in specific clinical circumstances. Note that routine oestradiol assays are not suitable for monitoring most oestrogen-containing hormone replacement therapy and are not sensitive enough to measure oestradiol in pre-pubertal patients.

OESTRADIOL REFERENCE INTERVALS AT SYDPATH

Male:	15 years of age and older:	0 - 150 pmol/L
	11 - 14 years of age:	0 - 100 pmol/L
	1 - 10 years of age:	0 - 50 pmol/L
Female:	Post-menopausal:	0 - 100 pmol/L
Reproductive years:	Follicular phase:	50 - 800 pmol/L
	Midcycle:	150 - 1500 pmol/L
	Luteal phase:	150 - 1000 pmol/L
11 - 14 years of age:		0 - 650 pmol/L
9 - 10 years of age:		0 - 200 pmol/L
1 - 8 years of age:		0 - 50 pmol/L
Pregnancy:		150 - 500,000 pmol/L

MEASUREMENT

Serum progesterone is measured in routine venous serum or heparin plasma collections with results available the same day as collection. SydPath uses the Roche Modular system for measurements. Note that requests for oestradiol for in-vitro fertilisation purposes are referred to an external laboratory.