

## Division of Laboratory Medicine

### Biochemistry

# Progesterone

**Pseudonyms:** none

Progesterone is predominantly measured in females in the investigation of infertility, its concentration in the luteal phase is used as a marker of ovulation.

Progesterone concentration correlates with the development and regression of the corpus luteum. From close to undetectable concentrations in the follicular phase, a rise in progesterone is observed one day prior to ovulation and increases post ovulation during the luteal phase. If fertilisation has not occurred, the corpus luteum regresses and concentrations of progesterone fall triggering menstruation.

## General information

**Collection container:**

Adults – serum (with gel separator, 4.9mL brown top Sarstedt tube).

Paediatrics –lithium heparin plasma (1.2mL orange top Sarstedt tube, no gel separator).

**Type and volume of sample:**

The tubes should be thoroughly mixed before transport to the lab. 1mL whole blood is required as a minimum volume if only progesterone is requested.

**Specimen transport/special precautions:**

Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.

## Laboratory information

**Method principle:**

Progesterone is analysed on the automated instruments by competitive immunoassay with electrochemiluminescence detection.

**Biological reference ranges – females:**

Reference ranges are not provided for progesterone results as the concentration in the luteal phase can vary widely. However, a serum progesterone of 30nmol/L or greater when measured 7 days before the next predicted menstruation (e.g. day 21 of a 28 day cycle) is good evidence of ovulation. Lower progesterone levels do not exclude the possibility of an ovulatory cycle.

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#### Turnaround times:

Results should be available the same working day.

A request can be added on for this test to a sample collected no older than 5 days.

#### Clinical information

**Factors known to significantly affect the results:** none

#### Clinical decision points – females:

Luteal phase Progesterone >30 nmol/L consistent with ovulation.

Lower progesterone levels do not exclude the possibility of an ovulatory cycle.

#### References:

Hargreaves, T. B. & Mills, J. A. (1998) Investigating and managing infertility in general practice. *BMJ* 316; 1438-1441.

**(Last updated September 2020)**