

## HEM 115A – Heparin Anti-Xa

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**Formal name:** Heparin Anti-Xa

**Also known as:** Anti-10a; Low –Molecular Weight Heparin Assay; Lovenox (Enoxaparin)

**Asante order code:** HEPAXA

### The Test

How is it used?

When is it ordered?

What does the test result mean?

**How is it used?**

Heparin anti-Xa tests are sometimes ordered to monitor and adjust standard heparin unfractionated heparin, (UFH) therapy, though the primary monitoring tool for UFH is currently the **PTT test**. Heparin anti-Xa may be ordered to monitor some people who have “heparin resistance” who do not respond as expected to UFH or who have an underlying condition or interfering factor(s) such as lupus anticoagulant (LAC) that affects the PTT test result.

Low molecular weight heparin (LMWH) therapy is usually not monitored, but doctors may order heparin anti-Xa tests in some cases. These include women who are pregnant, people who are obese, very young, or elderly, and those who have **kidney disease or dysfunction**. LMWH is primarily cleared from the body by the kidneys. Any condition that decreases kidney function can potentially decrease LMWH clearance, increasing its concentration in the blood and increasing the potential for bleeding.

**When is it ordered?**

The heparin anti-Xa test is not routinely ordered, but may be performed whenever a doctor wants to evaluate UFH or LMWH concentrations in the blood. It may be ordered periodically to monitor UFH therapy, especially when a doctor feels that a person is not responding as expected to UFH or when the **PTT** is not useful.

When it is used as a LMWH monitoring tool, heparin anti-Xa is primarily ordered as a “peak” test. It is collected about 4 hours after an LMWH dose is given, when the concentration of LMWH in the blood is expected to be at its highest level. Random and “trough” anti-Xa tests may also be ordered when a doctor suspects that someone may not be clearing the LMWH at a normal rate. Trough tests are collected just prior to the next dose, when heparin concentrations are expected to be at their lowest.

**What does the test result mean?**

Heparin anti-Xa results must be evaluated in the context of the type of heparin that a person is receiving (UFH or LMWH and type of LMWH), the timing of the sample collection, and the condition that the person is being treated for. Results from different laboratories may not be interchangeable. Therapeutic reference intervals and the heparins that they are based on vary.

In general, for UFH and LMWH, if concentrations are within an established therapeutic interval and the person is doing well clinically – not clotting, bleeding excessively, or experiencing other complications – then the dosage is considered appropriate. If the heparin anti-Xa concentration is high, then the person may be getting an excessive dose and/or not be clearing the drug at an expected rate and may be at an increased risk for excessive bleeding.

If the heparin anti-Xa concentration is below the therapeutic range, then the dosage of heparin may need to be increased to prevent excessive clotting.

### REFERENCE

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