

## CRP and hs-CRP Measure the Same Thing

Based upon orders and ordering patterns seen at the Pathology Center, there remains confusion regarding the chemical nature and indications for CRP (C-reactive protein) and hs-CRP (high sensitivity C-reactive protein). This Technical Bulletin seeks to clarify the main points regarding these tests.

- **Does the Pathology Center offer both hs-CRP and CRP tests?** NO. hs-CRP is not a “special” or “heart specific” CRP. CRP is CRP. Pathology Center personnel are not always aware of whether the intent of testing is for cardiovascular disease risk profiling, or inflammatory marker measurement. The hs-CRP test offered by the Pathology Center serves well for either indication.
- **How do hs-CRP and CRP tests differ?** The hs-CRP assay design is technically optimized by the manufacturer to measure CRP at low levels, within the reference (normal) range (around 1 to 3 mg/L). Originally, CRP tests were not designed to quantitate CRP at such low concentrations. There was only medical interest if the CRP was increased, not if it was high normal or low normal. Nobody cared about normal values. Cardiovascular disease risk profiling changed that.
- **Why are the units of measure different?** The CDC recommends hs-CRP be reported as *mg/L*, in order to simplify provider and patient awareness of the cardiac risks associated with higher values as listed below:
  - hs-CRP < 1.0 mg/L Low risk
  - hs-CRP 1.0-3.0 mg/L Moderate risk
  - hs-CRP >3.0 mg/L High risk

The “routine” CRP reference range is 0.0-0.7 mg/dL (mg/DECILITER). If a “routine” CRP has been used as an inflammatory marker and a hs-CRP is performed, the results can in most cases be compared by simply dividing the hs-CRP value by 10 as this converts the value from mg/L to mg/dL.

- **Is there any medical reason why CRP should be ordered instead of hs-CRP?** NO.
- **Is there any medical reason why hs-CRP should be ordered instead of CRP?** SURE! Cardiovascular disease risk profiling.
- **Are there special considerations for using hs-CRP for cardiovascular risk profiling?** Yes, definitely! The test is intended to be useful only for patients found at moderate Framingham risk by ATP III criteria <sup>(1)(2)(3)(4)</sup>. It is not for everyone, and the Framingham risk score should be calculated, from the patient’s lipid profile results, first. If hs-CRP testing is then found to be indicated, two hs-CRP levels should be measured, fasting or non-fasting, two weeks apart; then *averaged*. The average result is the hs-CRP value which is used to guide further therapy. The patient should be metabolically stable and without obvious inflammatory or infectious conditions, which would elevate hs-CRP.

Please contact Dr. Tom Williams at (402)354-4540 or 888-432-8980 with any questions or comments.

## **REFERENCES:**

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3. ATP III Guidelines At A Glance Quick Desk Reference.  
[www.nhlbi.nih.gov/guidelines/cholesterol/atglance.pdf](http://www.nhlbi.nih.gov/guidelines/cholesterol/atglance.pdf)
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