

**Date:** March 19, 2014

**To:** All Zones  
Physicians, Laboratory Directors and Managers

**From:** AHS Laboratory Services – Hematology Network

**Re:** C-Reactive Protein (CRP) and Erythrocyte Sedimentation Rate (ESR) Testing

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### Background:

- CRP and ESR are commonly requested laboratory tests used to evaluate inflammation.
- Both tests are non-specific, and although ESR is an adequate test, CRP is a better test as it is more specific, more sensitive, and more analytically precise than the ESR test.
- Approximately 650,000 CRP's and ESR's were performed in Alberta in 2013. Although there has been a significant reduction in requesting both tests simultaneously since 2012, this ordering pattern still accounts for 45% of CRP and ESR testing.

The [Laboratory Report](#) (April 2013, Volume 3, Number 1)<sup>1</sup> made the following recommendations:

1. Routinely **CHOOSE CRP ALONE** as the better non-specific test for inflammation. \*
2. **DO NOT** routinely request **BOTH** CRP and ESR simultaneously. \*\*
3. **DO NOT** request either CRP or ESR on asymptomatic patients.

### Clinician Feedback:

- \*1. "What if CRP testing is not available in the local laboratory?"

REQUEST ESR testing ALONE.

If not urgent, request CRP testing ALONE, and it will be referred out.

- \*\*2. "Do I need both CRP and ESR to investigate the possibilities of either Temporal (Giant Cell) Arteritis (TA), or Periprosthetic Joint Infections (PJI)?"

Yes, BOTH tests should be ordered in these unique clinical situations (2, 3). If CRP testing is not locally available on-site, it will be referred out.

3. "Will the ESR disappear?"

Not for the foreseeable future; it is still considered useful in investigating TA and PJI, and will continue to be available in laboratories where CRP is not available on site. It will also need to be available for both rheumatology, and oncology for specific disease staging, prognosis and clinical trial requirements.

**Recommended Testing Algorithm:**

<b>Order based on Priority and CRP Availability</b>		
<b>Clinical Priority</b>	<b>CRP Availability</b>	
	<b>If On-Site</b>	<b>If Referred Out</b>
<b>Routine</b>	<b>Order: ONLY CRP</b>	<b>Order: ONLY CRP</b>
<b>Urgent</b>	<b>Order: ONLY CRP</b>	<b>Order: ONLY ESR</b>
<b>Exceptions: Order based on Specific Clinical Circumstances</b>		
Temporal Arteritis (TA) Periprosthetic Joint Infection (PJI)	<b>Order: ESR and CRP</b>	<b>Order: ESR and CRP</b>

**References:**

1. <http://www.albertahealthservices.ca/LabServices/wf-lab-nls-2013-04-crp.pdf>
2. <http://www.bpac.org.nz/BPJ/2013/June/arteritis.aspx>
3. <http://www.aaos.org/Research/guidelines/PJIguideline.pdf>

**Inquiries and feedback may be directed to:**

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**This bulletin has been reviewed and approved by:**

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