



Primary Care Laboratory Interface Group (PLIG)

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Dear Colleague

Assessment of inflammatory markers: recommended CRP test as first line

CRP - rather than ESR - is now recommended for baseline measurement of inflammation for primary care clinicians in NHS Lothian. This follows review of recent national guidance and laboratory costs, now demonstrating that the CRP test carries clinical benefits and is significantly more cost effective than the ESR. It also avoids the problems of spoiled samples due to labelling issues or under-filling and just requires a brown 'biochemistry' tube.

Clinical assessment of the acute phase response is of use in distinguishing inflammatory from non-inflammatory conditions. It is also of use in assessing the response to therapy and changes in serial measurements may be prognostic in some conditions.

Recommendations

- Unless there is a specific indication **only one inflammatory marker should be requested.**
- **CRP should be used as the inflammatory marker of choice** due to its greater specificity and rapid response.
- Test ESR first line in Monoclonal gammopathy of undetermined significance (MGUS) and myeloma.
- Seldom request both CRP and ESR simultaneously. However, the following conditions require an exception to this recommendation where **simultaneous CRP and ESR testing** is helpful:
 - **Suspected giant cell arteritis (GCA)**
SIGN Guideline 107 currently recommends that ESR and/or CRP (but preferably a combination of these diagnostic tests to maximize sensitivity and specificity) should be measured in patients in whom the diagnosis is being considered.
 - **Suspected polymyalgia rheumatica (PMR)**
The British Society for Rheumatology (BSR) / British Health Professionals in Rheumatology (BHPR) Guideline recommends measurement of both ESR and CRP when establishing a diagnosis of PMR, with measurement of CRP likely to be sufficient when monitoring a patient with known PMR.
 - **Systemic lupus erythematosus (SLE)/connective tissue diseases**
Measurement of ESR is a more sensitive indicator of inflammation than CRP

High ESR with normal CRP being a frequently encountered feature in disease activity, and both CRP and ESR raised in infection. Monitoring to be advised by secondary care.

Summary*

	CRP	ESR
Indications in primary care	<ul style="list-style-type: none"> • First choice inflammatory marker due to greater specificity and rapid response 	<ul style="list-style-type: none"> • Assessment of patients with suspected Polymyalgia rheumatica and temporal arteritis (alongside CRP measurement) • Monitoring of patients with SLE/myeloma (if advised to do so by secondary care)
Major factors influencing	<ul style="list-style-type: none"> • IL-6 and either IL-1 or TNFα 	<ul style="list-style-type: none"> • Fibrinogen • α and β globulins • Immunoglobulins
Also affected by	Nil	Age, gender, pregnancy, drugs, smoking, haematocrit, red cell morphology, delay in analysis
Speed of change	Begins to rise 4-6 hours after a stimulus peaking at 36-50 hours and normalises in in 3-7 days following resolution	Takes up to a week to peak following a stimulus and several weeks to normalise following resolution

Yours faithfully,

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*Summary table adapted from material originally produced by NHS Fife