


CRP ESR

Thyroid function testing

Latest data

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sample

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Professor Murray Tilyard

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Natasha Maraku
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Julie Knight
Noni Richards
Dr Tom Swire
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Dave Woods

Report Development Team

Justine Broadley
Todd Gillies
Lana Johnson

Web

Gordon Smith

Design

Michael Crawford

Management and Administration

Kaye Baldwin
Tony Fraser
Kyla Letman
Professor Murray Tilyard

Distribution

Lyn Thomlinson
Colleen Witchall

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Contact us:

Mail: P.O. Box 6032, Dunedin

Email: editor@bpac.org.nz

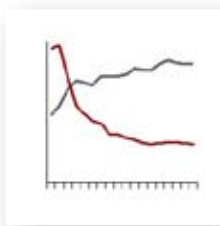
Free-fax: 0800 27 22 69

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Dear Dr

Over the last four years, there have been significant changes in how New Zealand GPs investigate the acute phase response and thyroid function. This report reviews your use of CRP/ESR and TSH/FT4.

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CRP and ESR

National Data

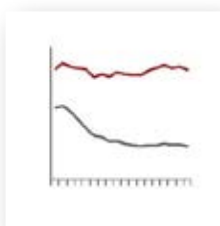
Your Data

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Best Practice use of CRP and ESR

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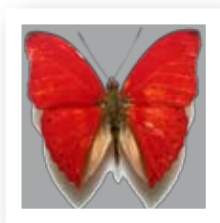


TSH and FT4

National Data

Your Data

7



Best Practice use of thyroid function tests

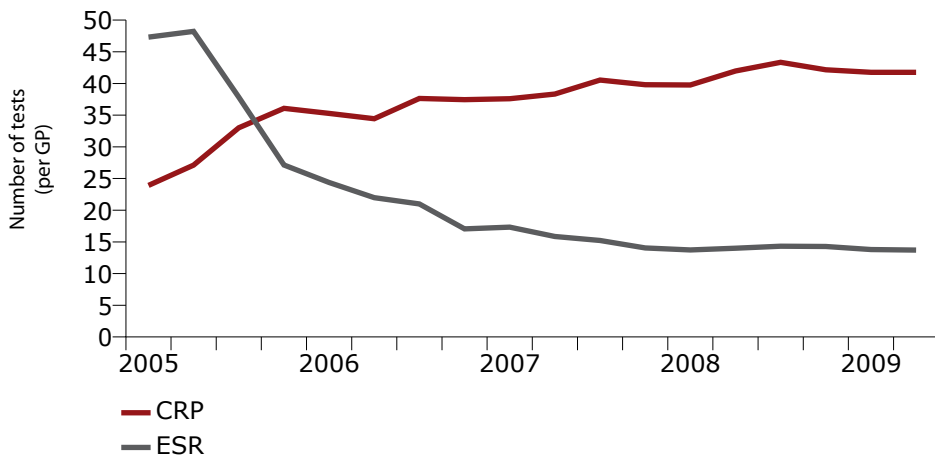
CRP and ESR

In 2005 CRP and ESR were two of the more commonly requested tests by New Zealand general practitioners. At that time ESR was being used about twice as often as CRP, however new evidence showed that in most situations CRP would provide more valuable information for the clinician.

On the basis of this evidence bpac^{nz} undertook a campaign to change the test ordering patterns of general practitioners, promoting greater use of CRP along with a reduction in the use of ESR.

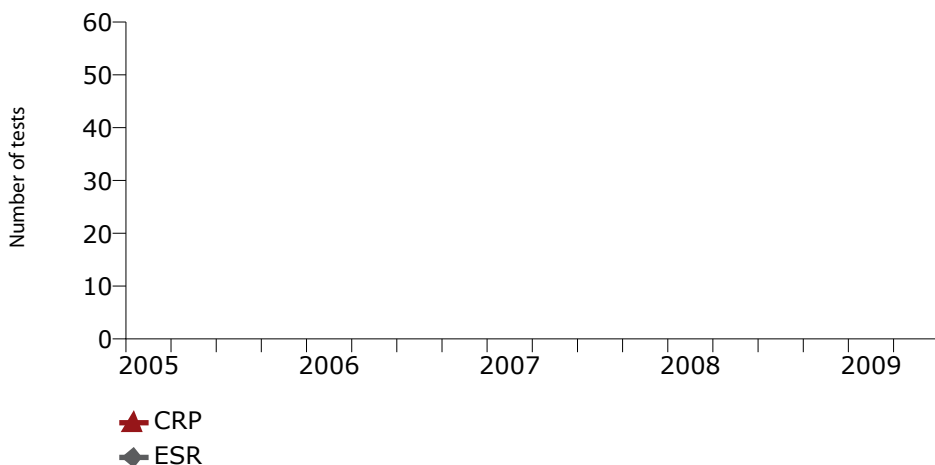
Four years on from the start of this campaign, the latest data shows general practitioners have made significant and sustained changes to their ordering of CRP and ESR (see Figure 1).

Figure 1: National ordering of CRP and ESR



Your data is presented in Figure 2.

Figure 2: Your ordering of CRP and ESR



How does your pattern of ordering (Figure 2) compare to your peers (Figure 1)?

Useful for:

Infection

CRP may be useful when considering an undifferentiated infection. As the CRP increases above 100 mg/L, the likelihood of a bacterial infection becomes greater than a viral infection.

Polymyalgia rheumatica (PMR)

CRP is recommended for diagnosis of PMR. A very small minority may have a normal CRP and raised ESR. If high index of suspicion and normal CRP result, then do ESR. CRP is recommended for monitoring. The initial CRP level should be used as the baseline for monitoring treatment. An absence of a clinical response or no improvement of the CRP within one to two weeks of therapy, should suggest reconsideration of the diagnosis.

Results not affected by:	CRP	ESR
Gender	✓	✗
Age	✓	✗
Pregnancy	✓	✗
Temperature	✓	✗
Drugs (e.g. steroids, salicylates)	✓	✗

Temporal (giant cell) arteritis

While overall there is good correlation between CRP and ESR in the diagnosis of temporal arteritis, cases with normal ESR and elevated CRP are reported. It is there recommend that CRP is done initially for diagnosis. Only do ESR if there is a high index of suspicion and normal CRP result. CRP is also recommended for the monitoring of temporal arteritis, and appropriate treatment results in improvement in the CRP level.

Rheumatoid arthritis

Neither CRP nor ESR are included in the diagnostic criteria for rheumatoid arthritis. However CRP should be used for monitoring because it is a better measure of the disease activity and it is known that sustained high levels of CRP are associated with worse outcomes.

Systemic lupus erythematosus (SLE)

There is a lack of correlation between CRP and disease activity in SLE. A more useful role of CRP is to distinguish between a lupus flare and infection: it usually remains normal in a flare but is elevated in infection, while the ESR is often elevated in both.

Not useful for:

Screening asymptomatic patients

CRP and ESR are not suitable for screening asymptomatic patients. When there is no strong evidence of disease, the tests are of little value.

Malignancy

Given the non-specific nature of the acute phase response, a definite role of CRP measurements in the management of cancer patients has not yet been established, other than in cases of intercurrent infection. Neither CRP nor ESR should be used as a screening test for malignancy in the general population, since any increase in these is non-specific.

CRP as a cardiovascular disease risk factor

High Sensitivity-CRP (Hs-CRP) has been reported as a predictor for cardiovascular disease, however it added only marginally to the predictive value of the current risk factors and therefore is not currently indicated in the investigation of CVD.

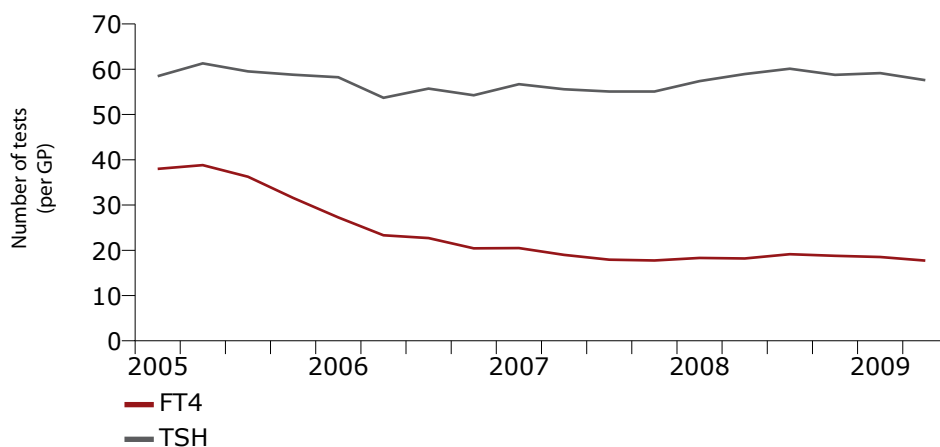
TSH and FT4

In 2005 TSH and FT4 (and FT3) were frequently ordered simultaneously to test thyroid function. However studies published around this time demonstrated that in most situations TSH was the most sensitive test of thyroid function and adding other tests was only of value in specific circumstances, e.g. if pituitary disease is suspected.

Based on this evidence bpac^{nz} undertook a campaign to change the test ordering patterns of general practitioners, promoting the use of TSH as the sole test of thyroid function in most situations.

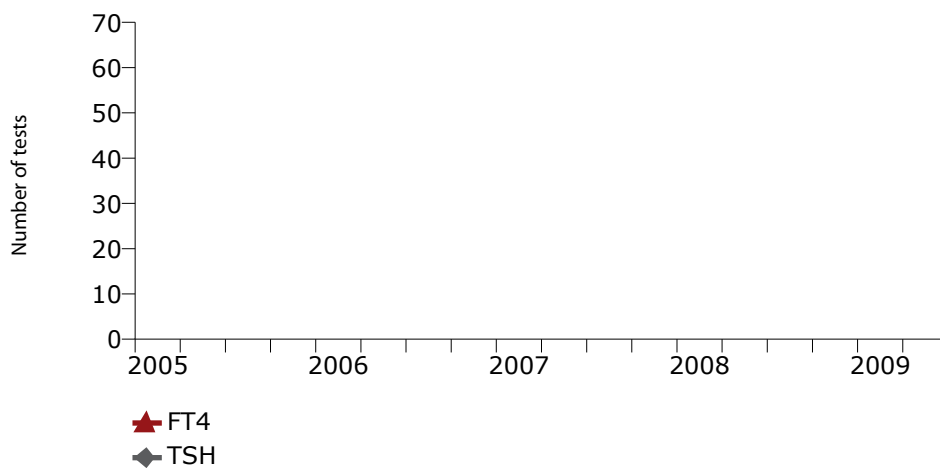
Four years on from the start of this campaign, the latest data shows general practitioners have made significant and sustained changes to their ordering of TSH and FT4 (see Figure 3).

Figure 3: National ordering of TSH and FT4



Your data is presented in Figure 4.

Figure 4: Your ordering of TSH and FT4



How does your pattern of ordering (Figure 4) compare to your peers (Figure 3)?

Notes:

This data is obtained from the NZHIS claims warehouse.

Data is assigned to you based on the recorded NZMC number for requested tests. Data has been excluded where the NZMC number was not recorded.

Best Practice use of thyroid function tests

Investigation

Testing asymptomatic patients

- No testing for thyroid dysfunction unless specifically indicated

Unwell patients

- During illness, there may be transient changes in TSH, FT4 and FT3
- Try to defer thyroid function testing until the illness has resolved

Untreated subclinical hypo- and hyperthyroidism

- An abnormal TSH should be confirmed several months later
- If still abnormal, monitor the TSH every 12 months unless symptoms develop
- Consider treatment if TSH becomes persistently unmeasurably low or if the patient becomes symptomatic
- Patients with positive thyroid antibodies may need closer monitoring

Monitoring

Monitoring patients on thyroxine

Men and non-pregnant women:

- Wait at least 6 weeks to test TSH after adjusting thyroxine dose
- Monitor stable patients annually with TSH only

Women planning pregnancy:

- Check TSH of women with past TSH elevation or positive thyroid antibodies (whether or not on treatment)

Pregnant women:

- Check TSH and FT4 early in pregnancy, and at the start of trimesters two and three
- Check thyroid function more frequently if there is a change in thyroxine dose

Monitoring anti-thyroid medication

- Test TSH and FT4 until TSH normalises, then
- Monitor every 2 months using TSH only

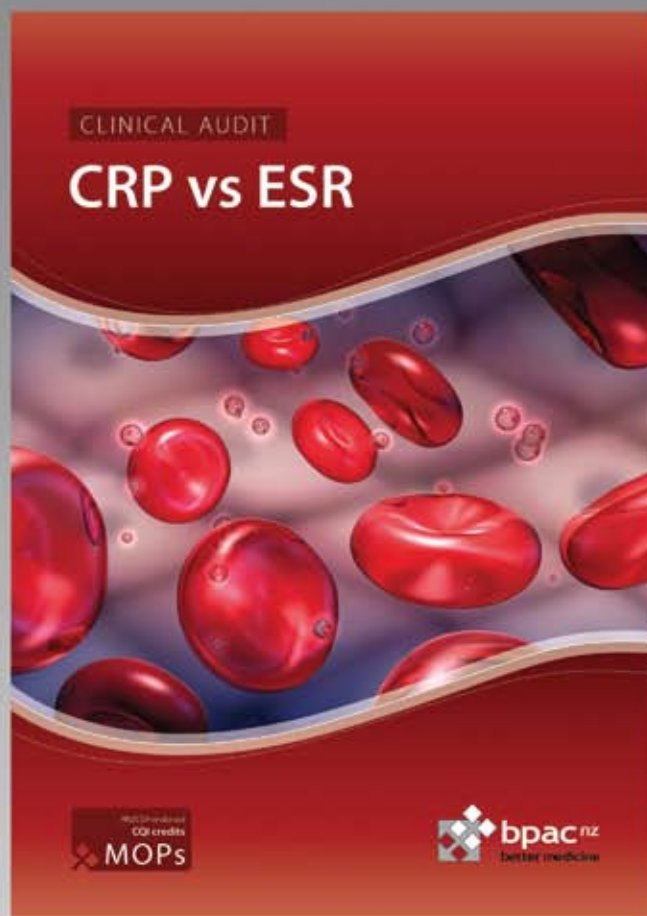
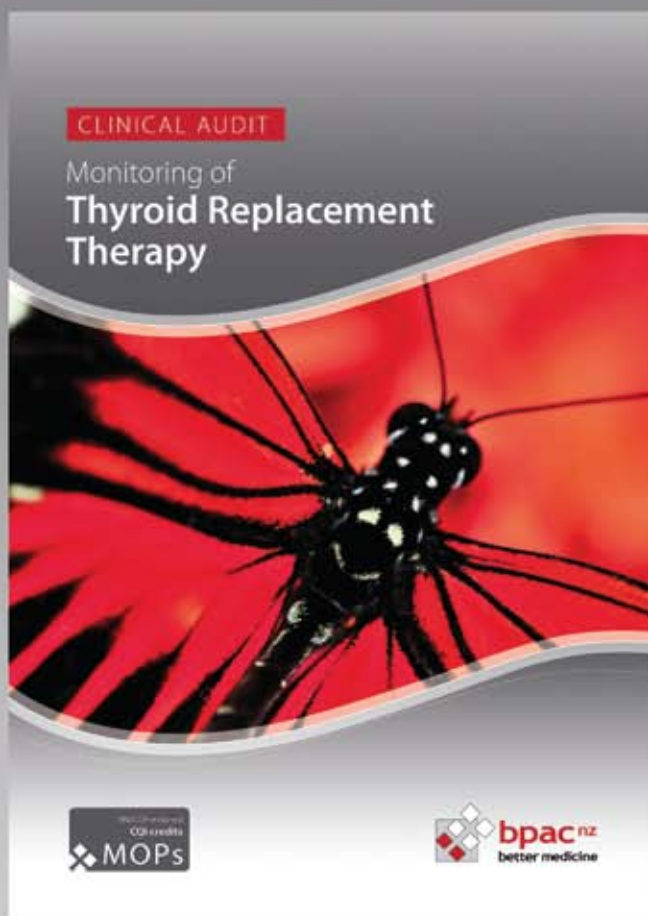
Patients on other drugs

- Amiodarone: Patients on long term therapy should have 6-monthly TSH and FT4 tests
- Lithium: Use TSH six monthly to check thyroid function

When to request both TSH and FT4

- During pregnancy
- Suspected non-adherence to thyroid replacement regimen
- When a patient is suspected of having pituitary failure both TSH and FT4 should be requested, as often the patient has a normal TSH with a decreased FT4

UPDATED FOR 2009



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