When requesting thyroid function tests, bpac\textsuperscript{nz} recommends

1. Asymptomatic patients are not screened for thyroid dysfunction
2. TSH is used as the sole initial test of thyroid function in most situations

Key points when requesting thyroid function tests

★ Testing asymptomatic patients
- Routine or opportunistic screening of asymptomatic patients is not recommended
- The return of positive results is low and there is controversy around the value of treatment in apparently healthy people

★ Monitoring patients on thyroxine

\textbf{Non-pregnant patients:}
- Wait at least 6 weeks to test TSH after adjusting thyroxine dose
- Monitor stable patients annually with TSH only

\textbf{Pregnant patients:}
- Check TSH of hypothyroid women who are planning pregnancy
- 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

★ 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
- Patients with positive thyroid antibodies may need closer monitoring

★ 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

★ Patients on other drugs

\textbf{Amiodarone:} Patients on long term therapy should have 6-monthly TSH and FT4 tests

\textbf{Lithium:} Use TSH annually 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
The tables and graphs below provide details of your patterns of requesting thyroid function tests. The purpose of this is to enable you to review your requesting and to compare yourself to other GP’s within your PHO and throughout New Zealand.

bpacnz recommends that TSH be used as the sole initial test of thyroid function in the majority of situations.

**Proportion of thyroid function tests requested simultaneously**

- Additional thyroid function tests should only be added when indicated by the TSH
BNP in heart failure

Heart failure can be difficult to diagnose, particularly in the early stages or when the disease is masked by other conditions. BNP and NT-proBNP are naturally occurring hormones synthesised in the cardiac ventricles. Levels are sensitive for elevated filling pressures in patients with left ventricular dysfunction, but the test may also be affected by age, gender, renal function, body habits, and underlying etiology of heart failure. The greatest clinical usefulness of BNP and NT-proBNP lies in excluding heart failure in a patient with equivocal symptoms.

- Testing is not recommended in patients with an obvious clinical diagnosis of heart failure but may be useful when the diagnosis is in doubt.
- BNP or NT-proBNP testing should not be used to replace conventional assessment of left ventricular structural or functional abnormalities (e.g. echocardiography, invasive haemodynamic assessment).
- The diagnostic ranges and cost-effectiveness of plasma BNP or NT-proBNP are controversial for the identification of patients with left ventricular systolic dysfunction in the post-MI setting, or in patients at high risk of developing heart failure (e.g. history of myocardial infarction, diabetes mellitus).

For further information visit: http://www.nacb.org/lmpg/biomark/card_biomarkers_chp2.doc

Recommendations against routine BRCA testing

Women may request the test for breast cancer associated (BRCA) mutations as it becomes more widely known; recently there have been several articles in popular New Zealand women's magazines. In New Zealand the tests are performed at Auckland Hospital. Because of the nature of the test, results take 6 months and costs $3000 per patient.

Recently the U.S Preventative Services Task Force (USPSTF) has prepared guidelines around genetic testing for BRCA genes.

- About 2% of women are at high risk for BRCA mutations, as determined by family history (i.e. 3 first or second degree relatives with breast cancer), and they should be referred for genetic counselling and evaluated for testing.
- The USPSTF recommends against genetic counselling and testing for BRCA genes in women without family histories that suggest risk for BRCA1 or BRCA2 mutations; in this group the harms (e.g. prophylactic surgery) outweigh the benefits.

For further information visit: http://www.ahrq.gov/clinic/uspstf05/brcagen/brcagenrs.htm

Estimated Glomerular Filtration rate (eGFR)

Even a small decline in renal function is associated with increased health risk (e.g. CVD risk). Early detection and management has the potential for significant health benefits. Serum creatinine levels are influenced by gender, muscle mass and activity. Up to 25% of patients with “normal” serum creatinine have early stage chronic kidney disease (CKD).

Many laboratories report an estimated GFR (eGFR) whenever a serum creatinine is requested. An eGFR based on the Modified Diet in Renal Disease (MDRD) equation does not need the patient’s weight and correlates well with true GFR in most patients with a degree of renal impairment. However, there are several limitations to consider when interpreting these results:

- The MDRD formula is not reliable in some settings (e.g. dialysis, acute renal failure, severe liver disease, people with low protein intake and children).
- It has not yet been validated in Māori, Pacific Island or Asian populations.
- A value of > 60 when the plasma creatinine is normal may be unreliable.
- A value of 60-90 may indicate mild kidney damage and further investigation is indicated if haematuria, proteinuria or hypertension are present.
- A value of 30-59 indicates a moderate decline in kidney function and the need for regular monitoring. ACE inhibitors for proteinuria or specialist referral may be appropriate.
- A value of ≤ 30 indicates possibly severe CKD and the need for specialist referral.
- The eGFR (MDRD) is not used for adjustment of drug doses, such as for allopurinol. In these situations the bpacnz creatinine clearance calculator or tables based on the Cockcroft & Gault equation is more appropriate.

For further information visit: http://www.kidney.org.au/?section=86&subsection=578