

## QUIZ FEEDBACK

# Troponin & Urea Testing

### Introduction

This quiz feedback provides an opportunity to revisit the last "Best Tests" document and accompanying quiz which focused on the role of troponin testing in primary care, and provided an update on whether we should still be measuring urea.

This feedback provides an overview of the key messages of the articles, in particular the benefits and pitfalls of the tests, and the best use of the tests. The most important message, of the troponin article is that if it is suspected that a patient has had an MI, they should be referred

immediately to hospital. Admission should not be delayed while waiting for a troponin result.

The urea test has fallen from favour over the last decade, as eGFR and creatinine have become the better choice when assessing renal failure.

All general practitioners who responded to this quiz, will receive personalised online feedback and CME points. The quiz can still be completed online. Currently, there are over 30 interactive quizzes available which provide an ongoing opportunity for the accumulation of points. Visit [www.bpac.org.nz](http://www.bpac.org.nz)

1. In which of the following situations would testing troponin levels be useful?		
	Your peers	GP panel
<input type="checkbox"/> To confirm a suspicious ECG	27%	✗
<input type="checkbox"/> Use to rule out MI, in someone presenting with acute chest pain	13%	✗
<input type="checkbox"/> Screening for people with high cardiovascular risk	0%	✗
<input type="checkbox"/> Delayed presentation of suspected MI	97%	✓

**Comment:**

Almost all of GPs correctly responded that one of the key situations in which troponin is useful in primary care, is for patients presenting 24–72 hours after a single episode of chest pain e.g. the “Monday morning” consultation. Measurement of troponin and ECG will establish whether or not the chest pain was due to a MI. If there has been a MI, troponin is likely to remain elevated for up to 10 days. A positive troponin result is indication for immediate referral. The use of troponin to confirm a suspicious ECG or to rule out an MI in someone presenting with acute chest pain is not recommended. These patients should be referred immediately to secondary care.

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2. For a patient presenting a few days after a single episode of chest pain, how can troponin be helpful?		
	Your peers	GP panel
<input type="checkbox"/> To establish if chest pain was due to MI, or other causes	94%	✓
<input type="checkbox"/> Help determine risk of future events	3%	✗
<input type="checkbox"/> For someone with atypical symptoms	81%	✓
<input type="checkbox"/> If no ECG changes	79%	✓

**Comment:**

The majority of GPs correctly identified that troponin is most helpful when there is delayed presentation, absence of ECG changes or the presence of atypical symptoms. In these situations, troponin can provide reassurance that no MI has occurred, or provide sufficient evidence to refer the patient to hospital.

3. Which of the following are true about the use of troponin as a screening test?		
	Your peers	GP panel
<input type="checkbox"/> Can provide additional information than just lipids and glucose for CVD risk assessment	1%	✗
<input type="checkbox"/> Troponin is being requested more frequently as a screening test	24%	✓
<input type="checkbox"/> Troponin testing is only indicated if there is some suspicion of MI	69%	✓
<input type="checkbox"/> There is no rationale for using troponin as a screening test	90%	✓

**Comment:**

There has been some concern expressed by Cardiologists that troponin may be being used for CVD risk assessments in primary care. However the responses to this question indicate general practitioners are well aware troponin does not provide any additional information for CVD risk assessment and that there is no indication for troponin testing in asymptomatic patients.

4. A negative troponin can only be used as a rule out test if it is:		
	Your peers	GP panel
<input type="checkbox"/> Laboratory measured	59%	✓
<input type="checkbox"/> From a point-of-care analyser	2%	✗
<input type="checkbox"/> Negative 4 hours post onset symptoms	3%	✗
<input type="checkbox"/> Negative 10 hours post onset symptoms	96%	✓

**Comment:**

Most respondents correctly identified that a negative troponin result is an appropriate “rule out” test for MI. But fewer recognised that a laboratory method must be used if the initial symptoms occurred more than 10 hours ago. Most point-of-care methods for troponin testing do not have sufficient sensitivity to “rule out” acute MI.

5. What is the appropriate action following a positive troponin test?		
	Your peers	GP panel
<input type="checkbox"/> Immediate referral to secondary care	99%	✓
<input type="checkbox"/> Confirm with ECG	3%	✗
<input type="checkbox"/> Perform repeat troponin test in 4 hours	2%	✗
<input type="checkbox"/> A positive troponin from a point-of-care analyser, should be confirmed with a laboratory tested specimen	11%	✗

**Comment (Question 5):**

A positive result for troponin, whether from the laboratory or from a point-of-care analyser, is significant and the patient should be referred immediately to secondary care. This should not be delayed by repeating the test (either by point-of-care or in the laboratory) or by confirming with ECG.

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6. Which of the following are true about the interpretation of a troponin test?		
	Your peers	GP panel
<input type="checkbox"/> A negative troponin at the time of presentation is a useful rule out test	5%	✗
<input type="checkbox"/> It takes 3–4 hours for troponin levels to begin to rise	86%	✓
<input type="checkbox"/> Troponin is useful for a delayed presentation, since troponins can remain elevated for up to 2 weeks	81%	✓
<input type="checkbox"/> In patient with no ST changes, but elevated troponin, it is worth considering other causes	48%	✗

**Comment:**

A patient with no ST changes but elevated troponin should be assumed to have had a MI and referred immediately to secondary care. There may be rare circumstances in which the troponin is elevated for a reason other than MI but it is not appropriate to delay referral.

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7. Which of the following are true about the use of urea as a 'renal function test'?		
	Your peers	GP panel
<input type="checkbox"/> Has been superseded by eGFR and creatinine	96%	✓
<input type="checkbox"/> Is generally an insensitive marker of renal failure	75%	✓
<input type="checkbox"/> Urea levels can be altered by a number of non-renal causes	95%	✓
<input type="checkbox"/> Urea:creatinine ratio remains a useful means of distinguishing between pre-renal and renal causes of renal failure	4%	✗

**Comment:**

Urea is generally an insensitive marker of renal failure as levels can vary for a number of reasons such as high/low protein diet, tissue breakdown, GI haemorrhage and liver disease. Note: using the urea:creatinine ratio to distinguish between pre-renal and renal causes is now considered unreliable; eGFR and creatinine are preferred instead.

8.	Indicate the situations where urea may have a role:		
		Your peers	GP panel
<input type="checkbox"/>	Management of a patient on dialysis	94%	✓
<input type="checkbox"/>	Occasionally for the assessment of dehydration in the frail elderly	89%	✓
<input type="checkbox"/>	Monitoring changes in renal function for people on ACE-inhibitors or diuretics	1%	✗
<input type="checkbox"/>	For areas of New Zealand that do not calculate eGFR	6%	✗

**Comment:**

Urea has a limited role in primary care, although it may be useful in some circumstances for assessing hydration status in frail elderly.

eGFR is now routinely reported by all laboratories throughout New Zealand, when creatinine is requested.

**Please note:** We no longer send out printed personalised quiz feedback. Personalised feedback is now available from [www.bpac.org.nz](http://www.bpac.org.nz). GPs who completed this quiz will receive an email with access instructions.