

## *Pathology and Laboratory Medicine Memorandum*

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**To:** NS Healthcare Providers and Health Service Directors  
**From:** Department of Pathology and Laboratory Medicine  
**Date:** April 25, 2022  
**Subject:** Changes associated with NT-ProBNP testing in NSH

In 2021, with testing platform upgrades NS Health provincial laboratories expanded testing capacity of B-Type natriuretic peptide, offered in Central, Western, Eastern and Northern Zones.

BNP or NT-proBNP testing is the test of choice when questioning the diagnosis of Heart Failure (HF). However, it should not be used in isolation as a diagnostic measure. Individuals suspected to have heart failure should undergo an initial evaluation that includes, at minimum, a medical history, a physical examination, initial laboratory investigations, an electrocardiogram, and a chest x-ray. If appropriate, BNP or NT-proBNP levels are tested to help formulate a diagnosis. If heart failure is confirmed or suspected, a consultation with internal medicine or cardiology would then be recommended.

All healthcare providers are now able to order this testing following the updated utilization rules:

**Since in most clinical scenarios, a repeat test is not required soon after the first one- commencing May 10, 2022 NT-ProBNP will be canceled in Central Zone (CZ) if a repeat request is made within 6 months of previous, unless for specific clinical reasons, “do not cancel NT-ProBNP” is written on the regular requisition form. This rule has been implemented in Western, Eastern and Northern zones as per locally circulated memos.**

**Interpretive Comments** for NT-ProBNP are as follows:

- Values  $\leq 125$  ng/L are normal in ambulatory care.  
NT-proBNP values  $<300$  ng/L have a 99% negative predictive value for excluding acute congestive heart failure (CHF)

CHF is likely in patients presenting with acute dyspnea at the following cut-off values (in the absence of renal failure):

- Age  $<50$  years and NT-proBNP  $>450$  ng/L
- Age 50 - 75 years and NT-proBNP  $>900$  ng/L
- Age  $>75$  years and NT-proBNP  $>1800$  ng/L

*(CHF is possible for values in between the above cut-offs- but other diagnoses need to be considered)*

Clinicians who are not familiar with interpreting BNP or NT-proBNP results should refer to NS Health BNP/NT-proBNP fact sheet for use and interpretation (see next page).

**For questions / concerns on the above, please contact:**

Central Zone, Dr. Manal Elnenaei, (902) 473-5194

Western Zone, Dr. Brian Jollymore, 902-679-2657, ext. 1053

Northern Zone, Dr. Robert Boutilier, 902-893-5554, 42185

Eastern Zone, Dr. Chris Lata, 902-567-7783

## Fact Sheet—Natriuretic Peptide Testing for Heart Failure

Developed from BC Guidelines for Chronic Heart Failure—Diagnosis and Management (2015); CCS HF Guidelines Update (2017); Health Quality Ontario: Heart Failure Care in the Community for Older Adults (2015)

### What is BNP and NT-proBNP?

B-type natriuretic peptide (BNP) and N-terminal prohormone of BNP (NT-proBNP) are biomarkers that are measured from a simple blood test. These neurohormones are produced by cardiac ventricles when under volume or pressure stretch. Both tests have a high sensitivity for the detection of HF. A low result for either test is associated with a high negative predictive value for the clinical syndrome of HF, while elevated values have a high positive predictive value for the diagnosis of HF. Either biomarker can be used for diagnostic purposes, however the results of these two assays are not comparable. **Depending on your area of work at NS Health, you will have access to either BNP or NT-pro BNP testing.**

### How do I interpret BNP and/or NT-pro BNP results? (note pg/mL is equivalent to ng/L)

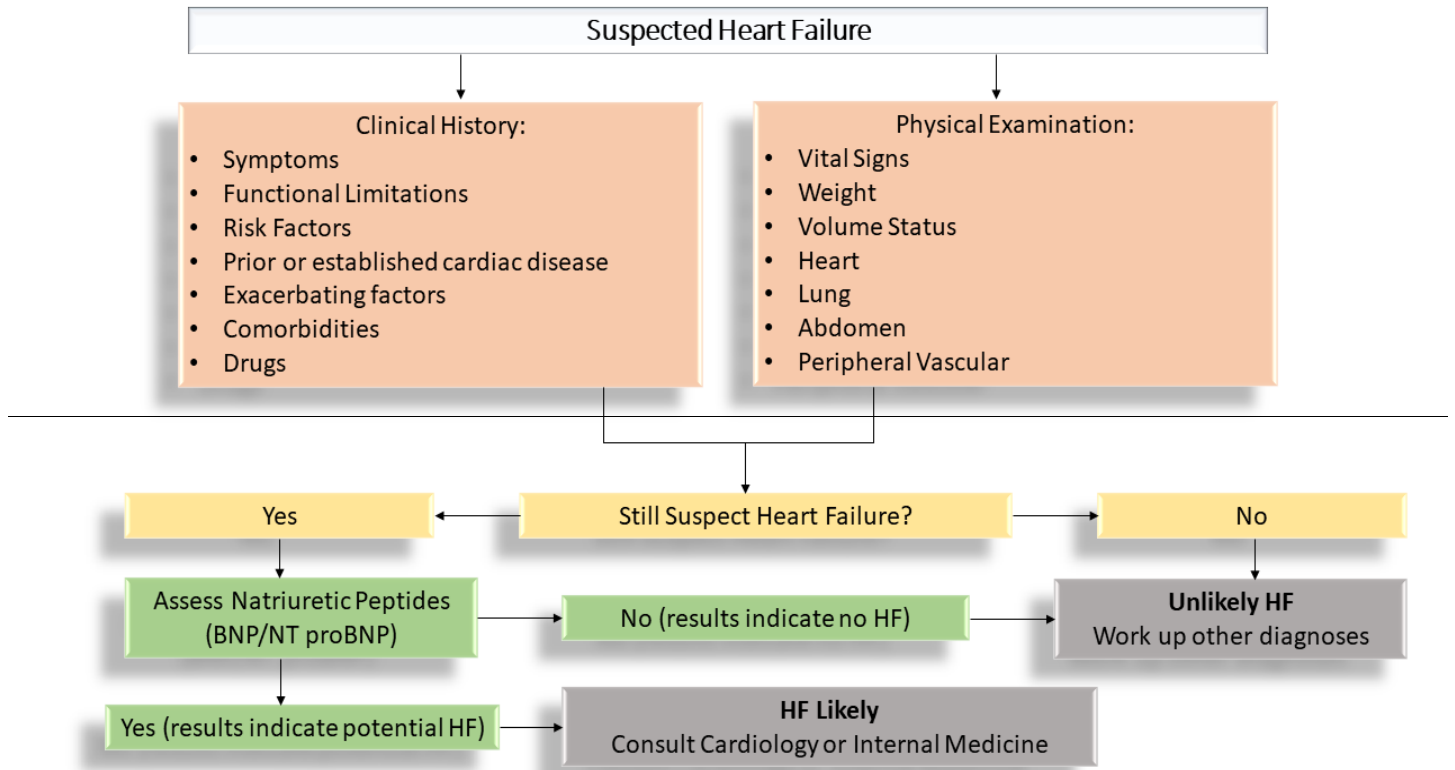
	Cut-off points (pg/mL)					
	BNP			NT-proBNP		
	Age <50	Age 50-75	Age > 75	Age <50	Age 50—75	Age >75
HF Unlikely	<100			<300		
HF Possible	100-400			300-450	300-900	300-1800
HF Very Likely	>400			>450	>900	>1800

### How long will it take to receive BNP and/or NT-pro BNP results?

The time to receive BNP/NT-pro BNP may vary depending on your area of work and the laboratory running this test. In general, the turnaround time for a 'routine' is 8 hours, urgent is 3 hours and STAT is 1 hour. It is the role of the laboratory to get the samples processed according to the request- however the use of STAT is only for test results that would be lifesaving. Generally, BNP/NT pro-BNP will be ordered as 'routine'.

### What factors may influence accuracy (i.e. false positive or false negative) of BNP/NT-pro BNP?

Several factors may produce either false positive or false negative results. Of note, false negatives may occur with obesity, and levels can be increased in severe renal failure. Other conditions that increase pressure of ventricles can increase the NT-proBNP, such as pulmonary embolism, hypertensive crisis and acute ischemia. Similar to troponin results which diagnose cardiac ischemia, NT-pro BNP or BNP test results have to be interpreted within the context of the history and physical examination.



Derived from: Canadian Cardiovascular Society (2021). "Is it Heart Failure and What Should I Do?" Pocket Guide