



Appendix A: Natriuretic Peptide Testing for Heart Failure in the Primary Care Setting

► 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. Both tests have a high-sensitivity for the detection of HF. A low result (i.e., <100 for BNP or <300 for NT-proBNP) for either test is associated with a high negative predictive value for the clinical syndrome of HF, while elevated values (i.e., > 400 for BNP or > 450–1800, depending on age, for NT-proBNP) have a high positive predictive value for the diagnosis of HF (refer to Table 1 below). BNP (or NT-proBNP) levels can help identify symptomatic and asymptomatic left ventricular dysfunction. BNP and NT-proBNP have similar clinical utility. Either biomarker can be used for diagnostic purposes, however the results of these two assays are not comparable.

► Is BNP Testing Payable by MSP?

The cost of the test is \$42.56, and may be payable by Medical Services Plan (MSP) in the assessment of symptomatic patients where the diagnosis of HF remains in doubt after standard clinical assessment. Repeat testing is not payable for more than once annually unless ordered by the physician for a new clinical episode suspicious for HF or in the tertiary cardiac care outpatient setting for prognostic stratification of HF. It is also not payable for repeat testing for monitoring therapy.

► What are the Indications for BNP (or NT-proBNP) Testing in the Primary Care Setting?¹

The recommended indication for BNP (or NT-proBNP) testing in the primary care setting is:

- to confirm or exclude the diagnosis of HF. For moderately elevated BNP levels or '*HF Possible*', consider additional testing and alternative causes for elevated intracardiac filling pressures.

At this time, it is **not recommended to routinely use BNP (or NT-proBNP) testing**:

- as a screening tool for asymptomatic patients; or
- for monitoring of disease severity.

► What BNP (or NT-proBNP) Levels are Used in a Clinical Setting?

Table 1 outlines the suggested BNP and NT-proBNP concentrations that are of clinical importance in the diagnosis of HF.

Table 1. Suggested natriuretic peptide cut-off points for the diagnosis of heart failure¹

| | 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 |

Routine echocardiography is not indicated for patients with '*HF Unlikely*' levels, unless they have been previously treated for HF or in whom the echo is intended to provide information regarding cardiac structures beyond ventricular function (e.g. valve disease, left ventricular hypertrophy). Consider alternative diagnoses for patients with '*HF Possible*' levels.

References

1. Canadian Agency for Drugs and Technologies in Health (CADTH). Brain Natriuretic peptide testing for Congestive heart failure: A review of the guidelines and clinical and cost-effectiveness. 2008.