



Brain Natriuretic Peptide (BNP)

Although first described in brain research, brain natriuretic peptide (BNP) is a cardiac heart hormone. It is measured in blood specimens as a biomarker for ventricular dysfunction. Heart muscle cells produce pro-BNP upon ventricular stretch due to pressure or volume overload. Pro-BNP is cut into two parts: an inactive portion called NT-proBNP and a smaller portion called BNP, which is biologically active. BNP has a short half-life while NT-proBNP is more stable, making it easier to measure in stored blood specimens.

Research studies have shown that, even in the absence of overt heart failure, modest elevations of BNP have prognostic value for future cardiovascular events and mortality. While used mainly in the assessment of left ventricular function, these compounds are useful in the evaluation of other heart diseases, such as right ventricular function, pulmonary hypertension, atrial fibrillation, and CAD. With treatment, these compounds drop. They may or may not return to normal. A rising BNP implies a worsening condition.

Use of BNP and NT-proBNP is growing in clinical medicine. Measurement in emergency situations helps the clinician determine whether a patient's dyspnea is due to heart failure or due to another cause (such as lung disease). Women tend to have a wider reference range compared to men. "Normal" levels vary among testing laboratories, depending on the reagents used. Reference ranges drift up with age, probably as a reflection of declining heart health as part of the aging process. Thus, the reference range is not necessarily true "normal" range or evidence of a healthy heart. Healthy hearts have very low values for BNP and NT-proBNP.

Underwriting bullets:

- Values for BNP and NT-proBNP are not interchangeable.
- Values from a lab other than CRL are judged based on that lab's reference range for age/gender.
- Rising NT-proBNP or BNP suggests worsening and must be underwritten cautiously.

Evaluating NT-pro BNP with Known Cardiac History		
Age	NT-proBNP	
≤59	• ≤ 300 pg/ml	Rate for impairment
	• 301- ≤ 1000 pg/ml	Rate for impairment; add one table
	• > 1000 pg/ml	Postpone for cardiac workup. If cardiac workup is completed, and BNP remains > 1000 pg/ml; decline.
60-69	• ≤ 400 pg/ml	Rate for impairment
	• 401 - ≤ 1000 pg/ml	Rate for impairment; add one table
	• > 1000 pg/ml	Postpone for cardiac workup. If cardiac workup is completed, and BNP remains > 1000 pg/ml; decline.
70+	• ≤ 500 pg/ml	Rate for impairment
	• 501- ≤ 1000 pg/ml	Rate for impairment; add one table
	• > 1000 pg/ml	Postpone for cardiac workup. If cardiac workup is completed, and BNP remains > 1000 pg/ml; decline.

To get an idea of how a client with a history of Brain Natriuretic Peptide (BNP) would be viewed in the underwriting process, please feel free to use the attached *Ask "Rx" pert underwriter* for an informal quote.

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Brain Natriuretic Peptide (BNP) Ask "Rx" pert underwriter
(ask our experts)

Producer _____ Phone _____ FAX _____

Client _____ Age/DOB _____ Sex _____

If your client has an abnormal BNP or NT-proBNP, please answer the following:

1. What is the cardiac diagnosis? _____
2. Please list date when first diagnosed: _____
3. Is your client on medications?
 yes, please give details _____
 no
4. What are the following measurements?
BNP _____ or NT-proBNP _____
Echocardiogram -- send the report
5. Please check if your client has had any of the following:
 coronary artery disease cardiomyopathy
 valve disease systolic or diastolic dysfunction
 hypertensive heart disease pulmonary hypertension
 arrhythmia congenital heart disease
 left ventricular hypertrophy
6. Does your client have any other major health problems (ex: cancer, etc.)?
 yes, please give details _____
 no
7. Has your client smoke cigarettes in the last 12 months?
 yes,
 no

After reading the *Rx for Success* on Brain Natriuretic Peptide (BNP), please feel free to use this *Ask "Rx" pert underwriter* for an informal quote.

