Why Triage BNP?

B-type natriuretic peptide (BNP) is a naturally secreted hormone released primarily from cardiac myocytes in response to ventricular volume expansion and pressure overload.

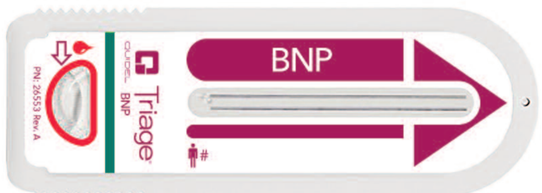
- Test results are available in approximately 15 minutes (just 2 minutes of hands-on time).
- BNP is an excellent hormonal marker of ventricular **systolic and diastolic dysfunction**.[2]
- When used in conjunction with other clinical information, BNP levels may help **risk stratify ACS patients** for hospital admission or direct ED discharge.[3]
- BNP levels at the time of admission are powerful predictors of outcomes in **predicting death and rehospitalization** of heart failure patients.[4]
- BNP levels have been shown to r**educe time to adequate therapy, the need for hospitalization** and intensive care admission, **length of stay**, and the **mean total cost of treatment**.[5]
- **CLIA waived** for whole blood.

Triage BNP Test indications

- To aid in the diagnosis of heart failure
- To assess the severity of heart failure
- To risk stratify patients with acute coronary syndromes
- To risk stratify patients with heart failure

How accurate is the Triage BNP Test

The Triage BNP Test has 98 percent specificity using a 100 pg/mL cutoff.[1] In initial studies, the Triage BNP Test provided 98 percent diagnostic accuracy versus all other clinical findings in patients with or without disease history and corrected 96 percent of misdiagnoses of patients with suspected heart failure.[6]



1 Triage BNP Panel [product insert]. San Diego, CA: Alere Inc.; 2015.
2 Wilkins MR, Redondo J, Brown LA. The natriuretic-peptide family. *Lancet*. 1997;349(9061): 1307-1310.
3 Maisel A, Mueller C, Adams K Jr, et al. State of the art: using natriuretic peptide levels in clinical practice. *Eur J Heart Fail*. 2008;10(9):824-839.
4 Fonarow GC, Peacock WF, Phillips CO, Givertz MM, Lopatin M, ADHERE Scientific Advisory Committee and Investigators. Admission B-type natriuretic peptide levels and in-hospital mortality in acute decompensated heart failure. *J Am Coll Cardiol*. 2007;49(19):1943-1950.
5 Mueller C, Scholer A, Laule-Kilian K, et al. Use of B-type natriuretic peptide in the evaluation and management of acute dyspnea. *N Engl J Med*. 2004;350(7):647-654.
6 Dao Q, Krishnaswamy P, Kazanegra R, et al. Utility of B-type natriuretic peptide in the diagnosis of congestive heart failure in an urgent-care setting. *J Am Coll Cardiol*. 2001;37(2):379-385.
7 de Lemos JA, Morrow DA, Bentley JH, et al. The prognostic value of B-type natriuretic peptide in patients with acute coronary syndromes. *N Engl J Med*. 2001;345(14):1014-1021.

One test. Multiple platforms. Dependable results.

Access® 2* Immunoassay System

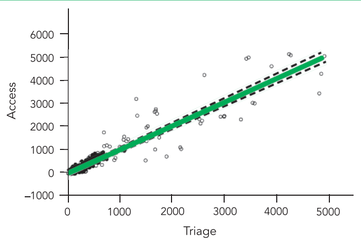
Unicel® Dxl 800* Immunoassay System

Quidel Triage System

Clinically Interchangeable BNP Results Regardless of Platform[11]

Method comparison of BNP assay results obtained using the Triage Meter versus the Triage BNP assay for Beckman Coulter Immunoassay Systems–BNP measurements of 412 EDTA plasma samples using the Triage BNP testing platforms. A Passing-Bablock regression analysis was applied.

n	412
Range of Observations (pg/mL)	5-4970
Intercept (pg/mL)	–0.15
Slope	1.00
Correlation Coefficient (r)	0.950



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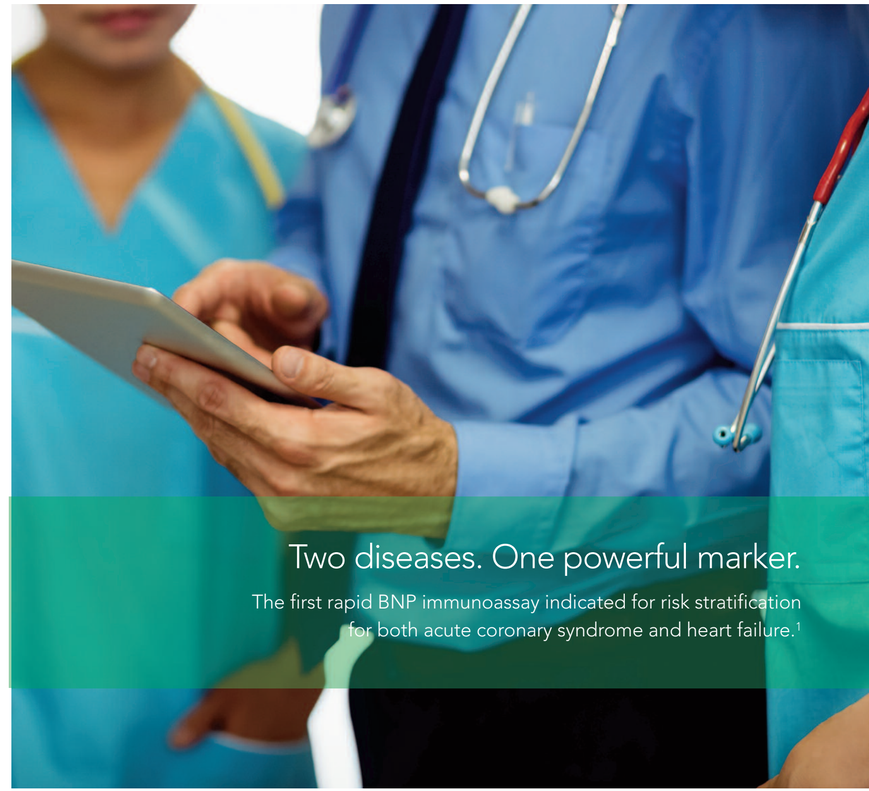


Two diseases. One powerful marker.

The first rapid BNP immunoassay indicated for risk stratification for both acute coronary syndrome and heart failure.[1]

QUIDEL | Triage®

SL2704 | BR980001EN00 (04/18)

Two cases. One marker.

A case for atypical chest pain.*

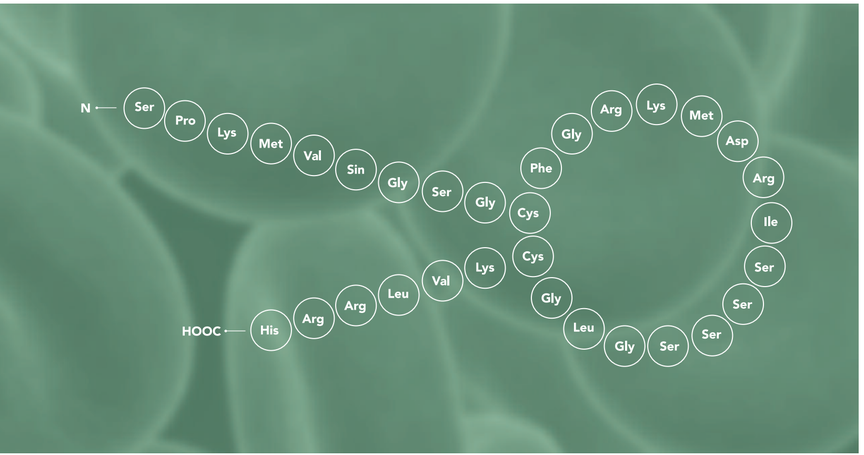
A previously healthy 42 year-old male presents with 4 hours of atypical chest pain to the emergency department. The first ECG shows no ischemic changes and the initial troponin I is normal. From the baseline sample, the blood BNP is 280 pg/mL and while in the X-ray department, the patient rapidly progresses into cardiogenic shock. A repeat ECG shows deep ST depression across the precordial leads and emergency angiography reveals a critical left main lesion which is treated with PCI. The patient is supported on an IABP for several days and makes an uneventful recovery.

The blood BNP value was the first and only indicator that a serious cardiac condition was present in this young man.

A case for heart failure.*

A 74-year old female with a history of HTN and DM presents with a two month history of progressive shortness of breath and wheezing. She believes this is a reactivation of allergic asthma which she experienced as a young adult. Use of short-acting beta-agonist inhalers have not improved her symptoms. Despite the lungs being clear on exam, the blood BNP level is 526 pg/mL. An echocardiogram subsequently finds an ejection fraction of 50%, severe LVH, and Grade 3 diastolic dysfunction. The patient progressively improves with diuresis and the initiation of ACEI and BB.

A follow-up BNP 6 weeks later is 213 pg/mL indicating significant improvement



*Cases have been submitted by clinicians and reflect real and/or typical scenarios of patients which have been diagnosed and treated.

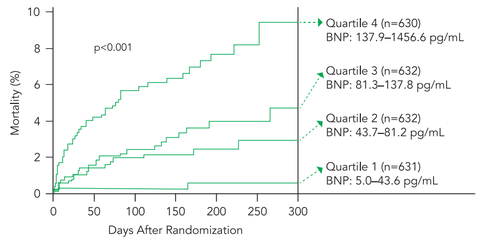
PCI = percutaneous coronary intervention
IABP = Intra-aortic balloon pump
HTN = hypertension
DM = diabetes mellitus
LVH = left ventricular hypertrophy
ACEI = angiotensin converting enzyme inhibitor
BB = beta-blocker

Powerful and predictive

Acute Coronary Syndrome

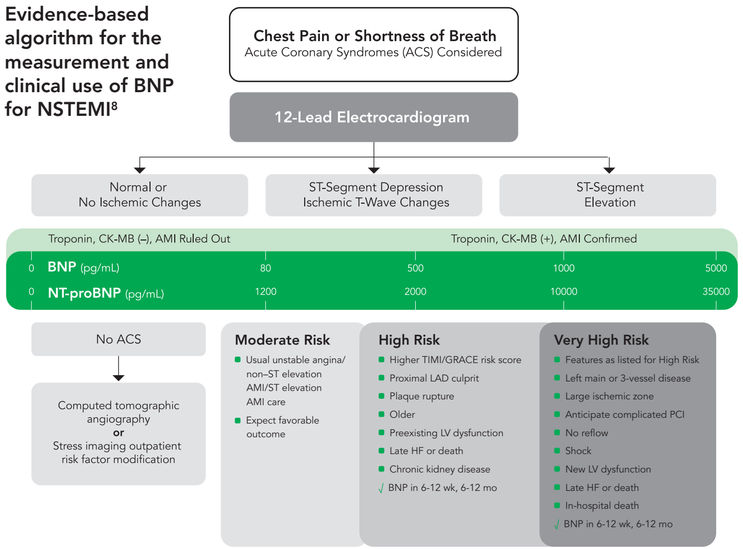
A single measurement of BNP provides predictive information for use in risk stratification across the spectrum of coronary syndromes. For risk stratification in ACS patients, BNP levels >80 pg/mL are predictive of an increased risk of death, myocardial infarction and congestive heart failure, both at 30 days and 10 months, compared to patients whose BNP values are below 80 pg/mL.[7]

BNP is the most powerful predictor of death in ACS.[7]



Adapted from de Lemos JA, Morrow DA, Bentley, JH et al. The prognosis value of B-type natriuretic peptide in patients with acute coronary syndromes. *N Engl J Med.* 2001;345(14):1014-1021.

Evidence-based algorithm for the measurement and clinical use of BNP for NSTEMI[8]

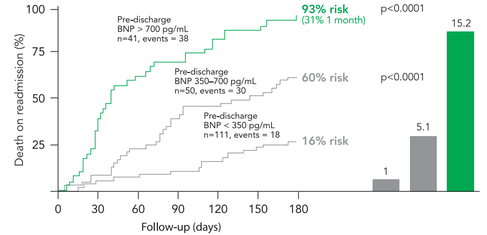


Evidence for Triage BNP.

Heart failure.

The absolute BNP level at discharge provides important information regarding post hospital course. BNP levels < 350-400 pg/mL at the time of discharge predict a stable post hospital course with a low risk of death and re-admission. Pre-discharge BNP levels > 700 pg/mL are associated with 93% risk of mortality and re-admission for heart failure within 180 days.

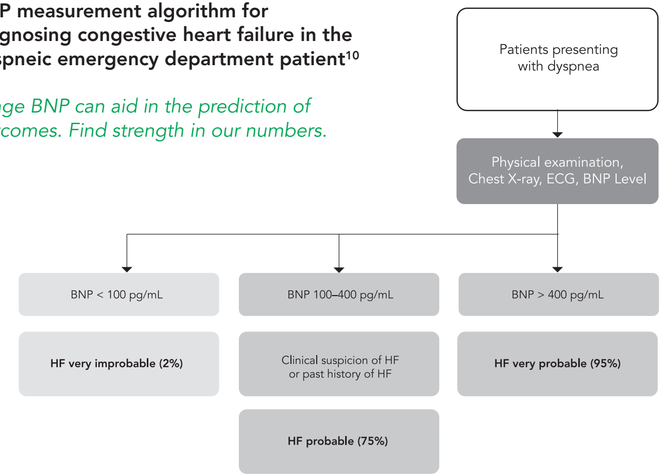
High BNPs result in increased mortality and readmission rates.[9]



Adapted from Logeart D, Thabut G, Jourdain P, *et al.* Predischarge B-type natriuretic peptide assay for identifying patients at high risk of readmission after decompensated heart failure. *J Am Coll Cardiol.* 2004;43(4):635-641.

BNP measurement algorithm for diagnosing congestive heart failure in the dyspneic emergency department patient[10]

Triage BNP can aid in the prediction of outcomes. Find strength in our numbers.



Adapted from Maisel A. B-type natriuretic peptide measurements in diagnosing congestive heart failure in the dyspneic emergency department patient. Rev Cardiovasc Med. 2002;3(suppl 4):S10-S17.

8 McCullough PA, Peacock WF, O'Neil B, de Lemos JA. Capturing the pathophysiology of acute coronary syndromes with circulating biomarkers. *Rev Cardiovasc Med.* 2010;11(suppl 2):S3-S12.
9 Logeart D, Thabut G, Jourdain P, et al. Predischarge B-type natriuretic peptide assay for identifying patients at high risk of readmission after decompensated heart failure. *J Am Coll Cardiol.* 2004;43(4):635-641.
10 Maisel A. B-type natriuretic peptide measurements in diagnosing congestive heart failure in the dyspneic emergency department patient. *Rev Cardiovasc Med.* 2002;3(suppl 4):S10-S17.
11 Triage BNP Panel [product insert]. San Diego, CA: Alere Inc.; 2016.