

1. NT-proBNP and Heart Failure

✓ According to the latest ACC, AMA, and HFSA guidelines (2017) NT-proBNP is a recommended biomarker for prevention, diagnosis, and prognosis/added risk stratification of Heart Failure.²



✓ Analytically, NT-proBNP is more stable than BNP, which is important when samples must be transported.³

✓ Most NT-proBNP assays correlate well. Not all BNP assays correlate well with other BNP assays.⁴

About **5.7 million** adults in the United States have heart failure.¹

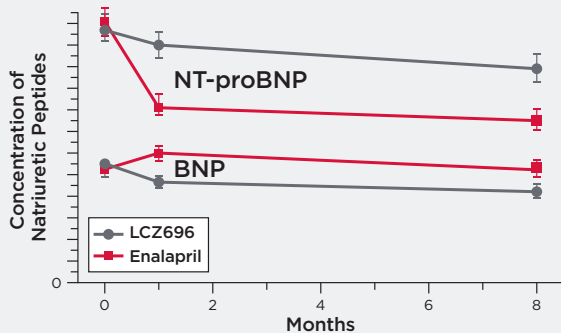
Risk factors include **coronary heart disease, high blood pressure and diabetes.**¹

50% of heart failure patients **die within 5 years** of diagnosis.¹

Early diagnosis and treatment can **IMPROVE QUALITY AND LENGTH OF LIFE** for people who have heart failure.¹

2. Treatment with ENTRESTO® – BNP vs. NT-proBNP

PARADIGM-HF: NT-proBNP and BNP⁵



Data from Packer, *et al.* Circulation 2015.
Note: LCZ696 is the name used for ENTRESTO® in this study.

✓ According to the latest guidelines (2017), the use of ARNI (Entresto®) is recommended for several types of heart failure patients.^{2, 6}

✓ ENTRESTO helped more people stay alive and out of the hospital compared to a leading HF medicine called enalapril.⁷

While NT-proBNP levels decreased in response to treatment with Entresto, BNP levels increased. This could lead to misinterpretation of the patients' response to therapy.^{8, 9}

“If physicians use... BNP to assess risk and make therapy decisions... in a patient receiving ENTRESTO®, it’s going to make interpretation of BNP extremely challenging.”¹⁰
—James Januzzi, MD CAP Today¹¹

1. https://www.cdc.gov/dhdsdp/data_statistics/fact_sheets/fs_heart_failure.htm — accessed July 2019
 2. 2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure for #3 and graphic
 3. Long-term Stability of Endogenous B-type natriuretic peptide (BNP) and amino terminal proBNP (NT-proBNP) in frozen plasma samples. Clin Chem Lab Med. 2004;42(8):942-4.
 4. DCollin-Chavagnac *et al.*, Head-to-head comparison of 10 natriuretic peptide Assays. DOI10.1515/cclm-2014-0592
 5. DOI: 10.1161/CIRCULATIONAHA.114.013748;
 6. Circulation 2017. 136; e137-e161
 7. ENTRESTO website: <https://www.entresto.com/info/how-entresto-works.jsp> — accessed July 2019
 8. ENTRESTO [prescribing information]. East Hanover, NJ: Novartis Pharmaceuticals Corp; August 2015
 9. New England Journal of Medicine (NEJM) | 2015; 373 (23): 2289-2290.
 10. Ortho Clinical Diagnostics document PR-03387
 11. Dr. Januzzi is an Ortho consultant and has received compensation for his consulting services

3. VITROS® Differentiation

- ✓ According to a study which assessed 10 NT-proBNP assays, the VITROS® NT-proBNP Assay's % CV is the lowest among different NT-proBNP assays when between run precision was calculated using internal quality controls in BNP and NT-proBNP assays.¹
- ✓ VITROS NT-proBNP Assay demonstrated good correlation to currently available assays.¹
- ✓ VITROS NT-proBNP Assay's longer analytical stability versus BNP at room temperature is particularly valuable for out-patient testing.^{2,3,4}
- ✓ Consolidate NT-proBNP testing with other chemistry and immunoassay test requests to speed results reporting and potentially reduce send out costs.



VITROS Intellicheck® Technology monitors, verifies, and documents diagnostic checks throughout sample and assay processing for accurate and efficient result reporting.



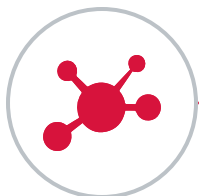
VITROS MicroWell technology maximizes binding capacities with a unique coating process. Proprietary Enhanced Chemiluminescence Detection Technology provides wide dynamic ranges and exceptional immunoassay precision and accuracy. This means fewer unnecessary dilutions, repeats, and redraws—delivering better patient care and greater laboratory efficiencies.



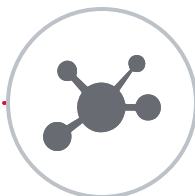
VITROS MicroSensor technology boosts quality by automatically detecting and flagging interferences.

▣ The VITROS approach to quality is to **optimize workflow** by greatly reducing the number of sample retests. These efficiencies also deliver a **high first pass yield** and **lower overall total cost of ownership**. ▣

4. Getting Started:



- 1 Order Reagents**
Order one NT-proBNP reagent pack (680 2156) per analyzer. Only one pack of matching calibrator (680 2157) is required in total.



- 2 Order Controls**
Order (from Ortho) one pack of Cliniaq Liq Cardiac Marker control (91474) and one pack of NT-pro BNP Range Verifiers (680 2158)



- 3 Collect Samples**
Collect and freeze samples (-20 °C) prior to the Ortho Laboratory Specialist arrival.



- 6 Inventory Management Users**
Laboratory Specialist will notify OPIM administrators of changes to update ordering cycles.



- 5 LIS Assay Code**
Assay Code 065. Report name NTBNP. Body fluid key, 5 Serum, 6 Plasma.



- 4 Validate Assay**
Validate

1. Chavagnac *et al.*, Head-to-head comparison of 10 natriuretic peptide Assays. DOI 10.1515/cclm-2014-05922.

2. Circulation 2011; 123: 2015-2019.

3. Clinica Chimica Acta 2003 ; 338: 107-115.

4. <http://www.questdiagnostics.com/testcenter/TestDetail.action?tabName=OrderingInfo&ntc=37386> — accessed July 2019.