# HEART FAILURE SUMMARY

The purpose of this summary is to provide a consolidated description of the 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure. This is not a complete summary. For the full guidelines or executive summary, please read the full articles below:

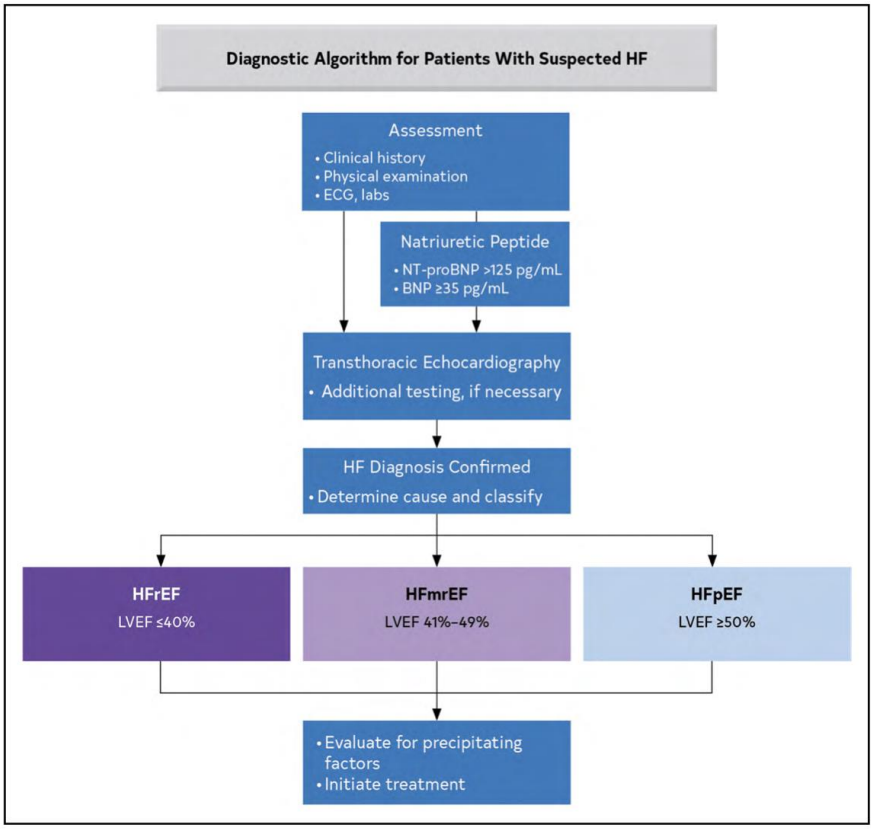
*Heidenreich, P. A., Bozkurt, B., Aguilar, D., Allen, L. A., Byun, J. J., Colvin, M. M., ... & Yancy, C. W. (2022). 2022 AHA/ACC/HFSA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Journal of the American College of Cardiology, 79(17), e263-e421.*

*Heidenreich, P. A., Bozkurt, B., Aguilar, D., Allen, L. A., Byun, J. J., Colvin, M. M., ... & Yancy, C. W. (2022). 2022 AHA/ACC/HFSA guideline for the management of heart failure: Executive summary: a report of the American College of Cardiology/American heart association joint Committee on clinical practice guidelines. Journal of the American College of Cardiology, 79(17), 1757-1780.*

# DIAGNOSIS

## Section 4.1.1

HF is a complex clinical syndrome with symptoms and signs that result from any structural or functional impairment of ventricular filling or ejection of blood




**INITIAL DIAGNOSTIC TESTING**

CBC: screen for anemia and infection
BMP
Liver chemistries: elevation can suggest hepatic congestion
Renal function testing
Thyroid function testing
Urine toxicology testing
Cardiac biomarkers: natriuretic peptides (BNP or BNPP - **Section 4.2**)

12-lead EKG

**Recommendations for Initial Laboratory and Electrocardiographic Testing**
**Referenced studies that support the recommendations are summarized in the Online Data Supplements.**

| COR | LOE | Recommendations |
|---|---|---|
| 1 | B-NR | 1. For patients presenting with HF, the specific cause of HF should be explored using additional laboratory testing for appropriate management.[1–8] |
| 1 | C-EO | 2. For patients who are diagnosed with HF, laboratory evaluation should include complete blood count, urinalysis, serum electrolytes, blood urea nitrogen, serum creatinine, glucose, lipid profile, liver function tests, iron studies, and thyroid-stimulating hormone to optimize management. |
| 1 | C-EO | 3. For all patients presenting with HF, a 12-lead ECG should be performed at the initial encounter to optimize management. |

**Recommendations for Use of Biomarkers for Prevention, Initial Diagnosis, and Risk Stratification**
**Referenced studies that support the recommendations are summarized in the Online Data Supplements.**

| COR | LOE | Recommendations |
|---|---|---|
| 1 | A | 1. In patients presenting with dyspnea, measurement of B-type natriuretic peptide (BNP) or N-terminal prohormone of B-type natriuretic peptide (NT-proBNP) is useful to support a diagnosis or exclusion of HF.[1–12] |
| 1 | A | 2. In patients with chronic HF, measurements of BNP or NT-proBNP levels are recommended for risk stratification.[11,13–29] |
| 1 | A | 3. In patients hospitalized for HF, measurement of BNP or NT-proBNP levels at admission is recommended to establish prognosis.[11,13–19] |
| 2a | B-R | 4. In patients at risk of developing HF, BNP or NT-proBNP–based screening followed by team-based care, including a cardiovascular specialist, can be useful to prevent the development of LV dysfunction or new-onset HF.[30,31] |
| 2a | B-NR | 5. In patients hospitalized for HF, a predischarge BNP or NT-proBNP level can be useful to inform the trajectory of the patient and establish a postdischarge prognosis.[14,17,20–29] |

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# IMAGING

**section 4.4**

- Transthoracic echocardiogram (TTE): best initial imaging to assess cardiac structure and function. Also determines preserved or reduced ejection fraction
- Chest x-ray (CXR)
    - Chest x-ray is useful to assess cardiac size, pulmonary congestion, rule out other etiologies to symptoms
- TTE is important to differentiate types of CHF (HFpEF: 50-70%, HFrEF: ≤40%, HFmrEF: 40-50%)

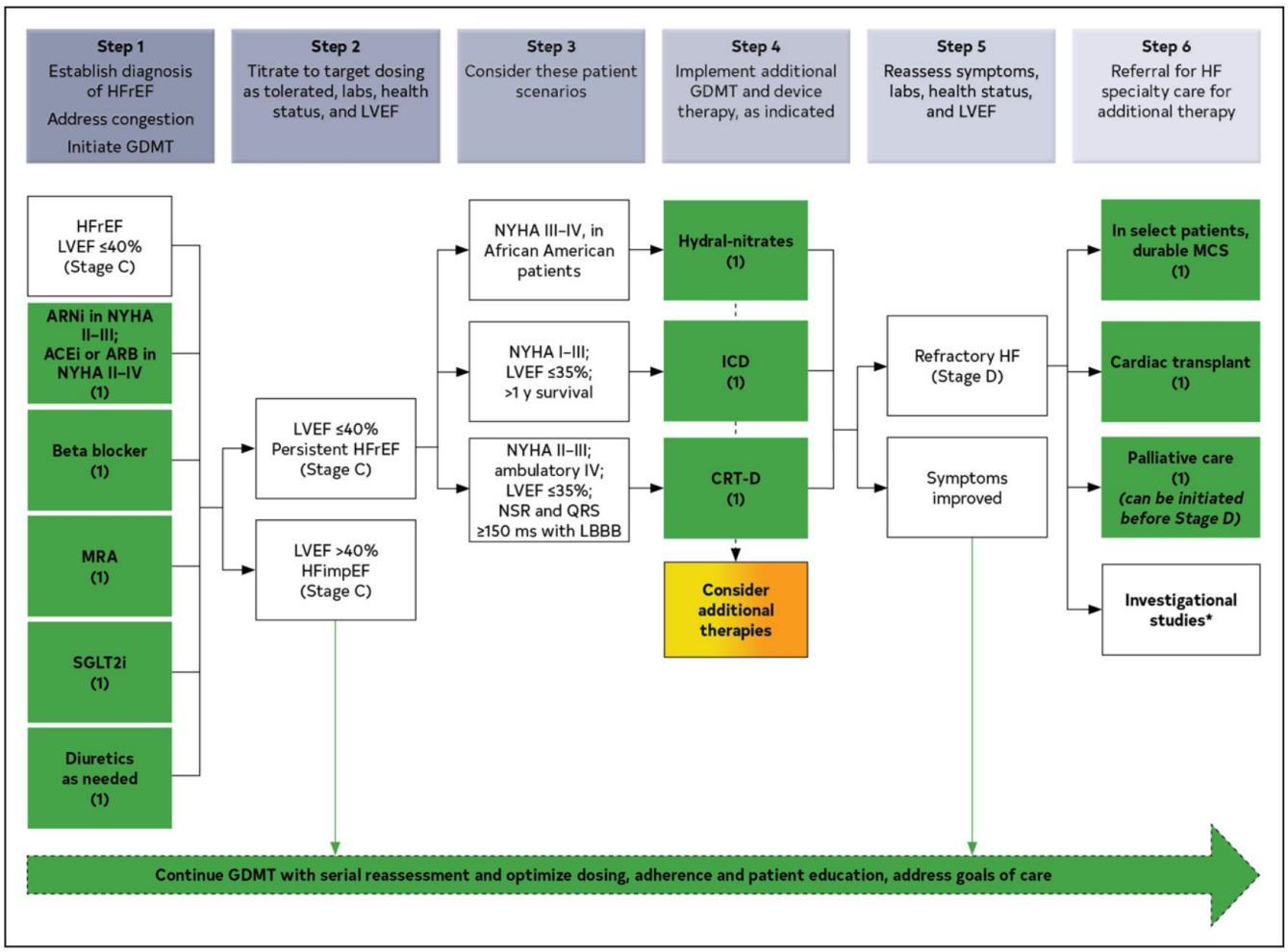
- If TTE is inadequate, CMR or CT is useful (but in our case TTE was adequate)

**Recommendations for Evaluation With Cardiac Imaging**
**Referenced studies that support the recommendations are summarized in the Online Data Supplements.**

| COR | LOE | Recommendations |
|---|---|---|
| 1 | C-LD | 1. In patients with suspected or new-onset HF, or those presenting with acute decompensated HF, a chest x-ray should be performed to assess heart size and pulmonary congestion and to detect alternative cardiac, pulmonary, and other diseases that may cause or contribute to the patient's symptoms.[1,2] |
| 1 | C-LD | 2. In patients with suspected or newly diagnosed HF, transthoracic echocardiography (TTE) should be performed during initial evaluation to assess cardiac structure and function.[3] |

**Recommendations for Evaluation With Cardiac Imaging (Continued)**

| COR | LOE | Recommendations |
|---|---|---|
| 1 | C-LD | 3. In patients with HF who have had a significant clinical change, or who have received GDMT and are being considered for invasive procedures or device therapy, repeat measurement of EF, degree of structural remodeling, and valvular function are useful to inform therapeutic interventions.[4–7] |
| 1 | C-LD | 4. In patients for whom echocardiography is inadequate, alternative imaging (eg, cardiac magnetic resonance [CMR], cardiac computed tomography [CT], radionuclide imaging) is recommended for assessment of LVEF.[8–15] |
| 2a | B-NR | 5. In patients with HF or cardiomyopathy, CMR can be useful for diagnosis or management.[16–23] |
| 2a | B-NR | 6. In patients with HF, an evaluation for possible ischemic heart disease can be useful to identify the cause and guide management.[24–27] |
| 2b | B-NR | 7. In patients with HF and coronary artery disease (CAD) who are candidates for coronary revascularization, noninvasive stress imaging (stress echocardiography, single-photon emission CT [SPECT], CMR, or positron emission tomography [PET]) may be considered for detection of myocardial ischemia to help guide coronary revascularization.[28–32] |
| 3: No Benefit | C-EO | 8. In patients with HF in the absence of: 1) clinical status change, 2) treatment interventions that might have had a significant effect on cardiac function, or 3) candidacy for invasive procedures or device therapy, routine repeat assessment of LV function is not indicated. |




**Section 7, Figure 6**

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# TREATMENT

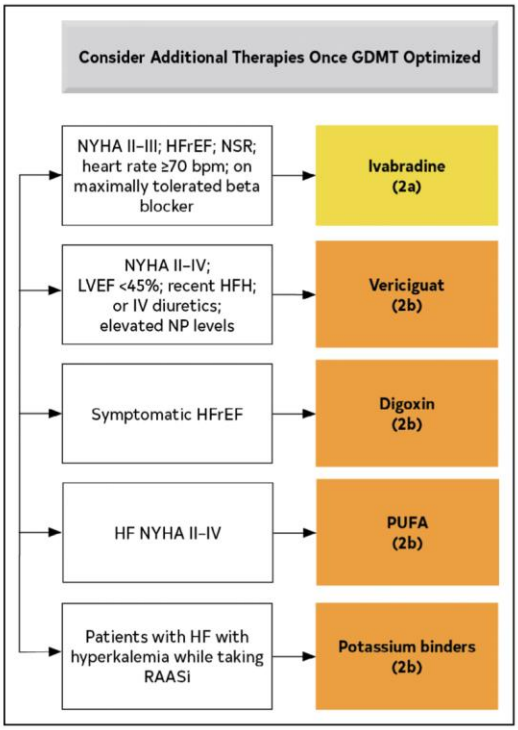
## Section 7.3

- First line guideline directed medical therapy (GDMT) includes ACEi/ARB/ARNi, beta-blockers, MRA, SGLT2i
    - ARNi > ACEi > ARB
        - ACEi used when ARNi use is not feasible
        - ARB used if patients have dry cough or history of angioedema
    - Beta blockers: carvedilol, bisoprolol, and sustained- release metoprolol succinate (other beta blockers not included)
    - MRA: spironolactone or eplerenone if eGFR >30 mL/min/1.73m2 and serum K+ <5.0 mEq/L (monitor for hyperkalemia)

- SGLT2i: decreases hospitalizations irrespective of presence of T2DM (Dapaglifozlin, Empagliflozin)

## Section 9.2:

- Other medications are considered once first line GDMT is optimized (see diagram)




## Section 9.3:

- Patients with HF admitted with evidence of significant fluid overload should be promptly treated with intravenous **loop diuretics** to improve symptoms and reduce morbidity
    - For patients with HF and congestive symptoms, addition of a thiazide (eg, metolazone) to treatment with a loop diuretic should be reserved for patients who do not respond to moderate- or high-dose loop diuretics to minimize electrolyte abnormalities

**Recommendations for Diuretics in Hospitalized Patients: Decongestion Strategy**
**Referenced studies that support the recommendations are summarized in the Online Data Supplements.**

| COR | LOE | Recommendations |
|---|---|---|
| 1 | B-NR | 1. Patients with HF admitted with evidence of significant fluid overload should be promptly treated with intravenous loop diuretics to improve symptoms and reduce morbidity.[1] |
| 1 | B-NR | 2. For patients hospitalized with HF, therapy with diuretics and other guideline-directed medications should be titrated with a goal to resolve clinical evidence of congestion to reduce symptoms and rehospitalizations.[1–6] |
| 1 | B-NR | 3. For patients requiring diuretic treatment during hospitalization for HF, the discharge regimen should include a plan for adjustment of diuretics to decrease rehospitalizations.[7] |
| 2a | B-NR | 4. In patients hospitalized with HF when diuresis is inadequate to relieve symptoms and signs of congestion, it is reasonable to intensify the diuretic regimen using either: a. higher doses of intravenous loop diuretics.[1,3]); or b. addition of a second diuretic.[3] |