1. Date of echocardiography:
2. Left atrial antero-posterior dimension: cm: z-score:
3. Left atrial enlargement?**[ ]** Present [ ]  Absent

Left atrium view:[ ]  M-Mode [ ]  Parasternal long axis

Left atrial dimension: cm2

Left atrial volume: mL

Left atrial area (measured from apical 4-chamber view): cm2

1. Left ventricle trabeculations?[ ]  Present [ ]  Absent

If present,

1. Are any of these more than 2:1? [ ]  Yes [ ]  No
2. Where were they positioned?

[ ]  Lateral [ ]  Apical [ ]  Septal [ ]  Free wall [ ]  Not specified

Table 1 Structure and Function Valves (more than mild)

| Valve | Stenosis | Regurgitation | Comments |
| --- | --- | --- | --- |
| Tricuspid Valve Disease | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | Data to be filled in by site |
| Mitral Valve Disease | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | Data to be filled in by site |
| Aortic Valve Disease | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | Data to be filled in by site |
| Pulmonic Valve Disease | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | [ ]  None[ ]  Mild[ ]  Moderate[ ]  Severe | Data to be filled in by site |

1. Mitral valve prolapse? [ ]  Yes [ ]  No
2. Doppler:
3. Mitral E velocity: m/s
4. Mitral A velocity: m/s
5. Mitral annular E’ velocity: cm/s
6. Left ventricular hypertrophy? [ ]  Present [ ]  Absent
7. Left ventricular concentric remodeling (size normal): [ ]  Present [ ]  Absent
8. Right atrial enlargement? [ ]  Present [ ]  Absent
9. Right ventricular enlargement? [ ]  Present [ ]  Absent
10. Right ventricular systolic dysfunction?[ ]  Present [ ]  Absent

Table 2 Ventricle Findings

| Findings | Left Ventricle | Right Ventricle |
| --- | --- | --- |
| Ejection Fraction (%) | Data to be filled in by site | Data to be filled in by site |
| Fractional Shortening (%) | Data to be filled in by site | Data to be filled in by site |
| Function | **[ ]**  Normal**[ ]**  Abnormal | **[ ]**  Normal**[ ]**  Abnormal |
| Wall motion abnormalities? | **[ ]**  1Yes**[ ]**  No | **[ ]**  1Yes**[ ]**  No |
| End Diastolic Internal Dimension | Data to be filled in by site | Data to be filled in by site |
| End Systolic Internal Dimension | Data to be filled in by site | Data to be filled in by site |
| End Diastolic Volume (mL) | Data to be filled in by site | Data to be filled in by site |
| End Diastolic Volume Index (mL/m2) | Data to be filled in by site | Data to be filled in by site |
| End Systolic Volume (mL) | Data to be filled in by site | Data to be filled in by site |
| End Systolic Volume Index (mL/m2) | Data to be filled in by site | Data to be filled in by site |
| End Diastolic Septal Thickness IVSTd | Data to be filled in by site | Data to be filled in by site |
| End Diastolic Posterior Wall Thickness PWTd | Data to be filled in by site | Data to be filled in by site |
| LV Mass | Data to be filled in by site |  |
| LV Mass Index | Data to be filled in by site |  |
| Non-compaction? | **[ ]**  Present**[ ]**  Absent | **[ ]**  Present**[ ]**  Absent |

1If YES, attach lab printout with wall motion abnormalities and trabeculation.

1. Intracardiac findings (Choose all that are present):

[ ]  Device lead [ ]  Thrombosis [ ]  Mass

1. Right ventricular systolic pressure (estimate): mmHg (plus right atrial pressure):

Pressure estimated by: [ ]  TR [ ]  Other, specify:

1. Pericardial effusion/abnormality: [ ]  Yes [ ]  No

If YES, describe:

1. Quality of study:

[ ]  Technically difficult [ ]  Suboptimal [ ]  Fair [ ]  Good [ ]  Excellent

1. Echocardiogram results (Choose only one):

[ ]  Normal

[ ]  2Abnormal, Not Clinically Significant

[ ]  2Abnormal, Clinically Significant

**[ ]** 2Borderline

**[ ]** 2Unable to evaluate

2For any Echocardiogram result that is not Normal, provide comments:

Recorder Signature: Date:

## General Instructions

This form contains data elements that are collected to measure heart function.

For mitochondrial disease exercise testing: Cardiomyopathy can be seen in mitochondrial disease patients, and cardiograph echocardiography is recommended prior to exercise testing in mitochondrial disease patients. If ejection fraction is not normal (less than 50%) or evidence of hypertrophic, dilated, or noncompaction cardiomyopathy is present, then cardiology consultation is recommended.

Important note: None of the data elements included on this CRF Module are classified as Core (i.e., strongly recommended for all mitochondrial disease clinical studies to collect). All of the data elements are classified as Supplemental – Highly Recommended (i.e., essential information for specified conditions, study types, or designs).

Please see the Data Dictionary for element classifications.

## Specific Instructions

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module.

* Date of echocardiography – Date/time should be recorded to the level of granularity known (e.g., year, year and month, complete date plus hours and minutes, etc.) and in an unambiguous format acceptable to the study database like DD-MMM-YYYY. When date/time data are prepared for aggregation or sharing, they should be converted to the format specified by [ISO 8601](https://www.iso.org/iso-8601-date-and-time-format.html);  YYYY-MM-DD T:hh:mm:ss.
* Left atrial area – This value is measured from the apical 4-chamber view.
* Right ventricular systolic pressure – This value is an estimated value of the right ventricular systolic pressure.
* Echocardiogram results – For any result that is not Normal, provide comments.