

direction: right

Causes: {
 label: "Initiating clinical causes"
 direction: down

 Ischemia: "Ischemic injury"
 Pressure: "Pressure overload"
 Volume: "Volume overload"
 Cardiomyopathy: "Cardiomyopathy"
 Myocarditis: "Myocarditis"
 Arrhythmia: "Arrhythmia"
 Metabolic: "Metabolic disease"
 Valvular: "Valvular pathology"
}

HF: "Failing heart"

Signaling: {
 label: "Persistent signaling pathway activation"
 direction: down

 Neurohormonal: "Neurohormonal"
 Mechanical: "Mechanical"
 Inflammatory: "Inflammatory"
 Oxidative: "Oxidative"
 MetabolicPath: "Metabolic"
}

Compensation: "Initial preservation\nof cardiac output"

Remodeling: {
 label: "Chronic maladaptive remodeling"
 direction: down

 Cardiomyocytes: "Altered cardiomyocyte\nphenotype"
 Fibroblasts: "Altered fibroblast\nactivity"
 Vascular: "Vascular dysfunction"
 Mitochondria: "Altered mitochondrial\nmetabolism"
 Communication: "Altered intercellular\ncommunication"
}

Causes.Ischemia -> HF
Causes.Pressure -> HF
Causes.Volume -> HF
Causes.Cardiomyopathy -> HF
Causes.Myocarditis -> HF
Causes.Arrhythmia -> HF
Causes.Metabolic -> HF
Causes.Valvular -> HF

HF -> Signaling.Neurohormonal
HF -> Signaling.Mechanical
HF -> Signaling.Inflammatory

HF -> Signaling.Oxidative
HF -> Signaling.MetabolicPath

Signaling.Neurohormonal -> Compensation
Signaling.Mechanical -> Compensation
Signaling.Inflammatory -> Compensation
Signaling.Oxidative -> Compensation
Signaling.MetabolicPath -> Compensation

Compensation -> Remodeling.Cardiomyocytes
Compensation -> Remodeling.Fibroblasts
Compensation -> Remodeling.Vascular
Compensation -> Remodeling.Mitochondria
Compensation -> Remodeling.Communication