Nearly half of patients with congestive heart failure have diastolic dysfunction and a normal ejection fraction (1). Diastolic dysfunction increases with age, especially in elderly persons with hypertensive heart disease (1).

Preoperative diastolic dysfunction has been reported in 30% to 70% of cardiac surgical patients, and is independently associated with difficult weaning from cardiopulmonary bypass (CPB) (2,3). Following CPB, acute or progressive diastolic dysfunction associated with ischemia-reperfusion injury, hypothermia, metabolic disturbances, or myocardial edema may develop and persist for several minutes to days (4).

**Diastole:**
Diastole is defined as the period from aortic valve closure to mitral valve closure. It can be subdivided into 4 phases:
- 1- Isovolumetric relaxation phase.
- 2- Rapid ventricular filling phase.
- 3- Diastasis.
- 4- Atrial systole.

**Diastolic Dysfunction:**
Diastolic dysfunction is defined as an impaired capacity of the ventricles to fill at low pressure and usually involves an abnormality in ventricular relaxation or chamber compliance. LV relaxation is associated with the sequestration of calcium from the cytosol to the sarcoplasmic reticulum via a complex energy-dependent process (5). LV compliance depends on the passive properties of the ventricle and is determined from the exponential relationship between the change in volume and change in pressure during diastolic filling (6). The contribution of left atrial contraction to LV diastolic filling is usually less than 20% in young healthy persons but may approach 50% in whom decreased LV filling is associated with early diastolic dysfunction.

The aim of this presentation is to highlight the main TEE modalities that are used for assessment of left ventricular diastolic function and will include:

- 1- 2-D assessment.
- 2- Transmirtal inflow velocity profile.
- 3- Pulmonary venous flow velocity profile.
- 4- Mitral Annular Motion: Doppler tissue imaging.
- 5- Color M-mode propagation velocity.
References:


