NICE guidance on cardiac resynchronisation therapy and implantable cardioverter defibrillators

**CRT with a pacing device (CRT-P)**
A treatment option for people with heart failure who fulfil all the criteria in the box below.

**CRT with a defibrillator device (CRT-D)**
May be considered for people who fulfil the criteria for CRT-P and who also fulfil the criteria for the use of an ICD.

**Implantable cardioverter defibrillator (ICD)**
ICDs are recommended for arrhythmias in people in the groups below. (Note: this guidance does not cover the use of ICDs for non-ischaemic dilated cardiomyopathy.)

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**CRT with a pacing device**
- They are currently experiencing or have recently experienced New York Heart Association class III–IV symptoms.
- They are in sinus rhythm:
  - **either** with QRS duration of 150ms or longer estimated by standard electrocardiogram
  - **or** with a QRS duration of 120–149 ms estimated by ECG and mechanical dyssynchrony that is confirmed by echocardiography.
- They have left ventricular ejection fraction of 35% or less.
- They are receiving optimal pharmacological therapy.

**Implantable cardioverter defibrillator**
- For secondary prevention, that is, for patients who present, in the absence of a treatable cause, with one of the following:
  - having survived a cardiac arrest due to either ventricular tachycardia (VT) or ventricular fibrillation
  - spontaneous sustained VT causing syncope or significant haemodynamic compromise
  - sustained VT without syncope or cardiac arrest, and who have an associated reduction in ejection fraction (LVEF of less than 35%) (no worse than class III of the New York Heart Association functional classification of heart failure).
- For primary prevention, that is, for patients who have:
  - a history of previous (more than 4 weeks) myocardial infarction and:
    - **either**
      - left ventricular dysfunction with an LVEF of less than 35% (no worse than class III of the New York Heart Association functional classification of heart failure), **and**
      - non-sustained VT on Holter (24-hour electrocardiogram) monitoring, **and**
      - inducible VT on electrophysiological testing
    - **or**
      - left ventricular dysfunction with an LVEF of less than 30% (no worse than class III of the New York Heart Association functional classification of heart failure) **and**
      - QRS duration of equal to or more than 120 milliseconds
  - a familial cardiac condition with a high risk of sudden death, including long QT syndrome, hypertrophic cardiomyopathy, Brugada syndrome or arrhythmogenic right ventricular dysplasia, or have undergone surgical repair of congenital heart disease.

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**Further information**
- The guidance on CRT is from NICE technology appraisal guidance 120, available from [www.nice.org.uk/TA120](http://www.nice.org.uk/TA120)
- The guidance on ICDs is from NICE technology appraisal guidance 95, available from [www.nice.org.uk/TA095](http://www.nice.org.uk/TA095)