**ECG Events**

- **P-Wave:**
  - *atria depolarisation*
- **QRS-complex:**
  - *ventricular depolarisation*
  - *largest spike due to larger muscle mass of ventricles*
- **Atrial repolarisation:**
  - *hidden by the QRS complex*
  - *it is relatively small*
- **T-Wave:**
  - *ventricular repolarisation*

**ECG Events During the heart cycle**

SA node & Atria depolarisation
AV-node depolarisation
Bundle of His depolarisation
Ventricle depolarisation

**Other ECG Intervals**

- **P-R interval (0.12 – 0.21 sec):**
  - *time for action potentials to be transmitted to ventricles*
- **QRS interval (0.07 – 0.11 sec):**
  - *depolarisation of ventricles*
  - *extended time: ‘narrow’ suggest AV node or Bundle of His delays*
- **S-T segment (0.05):**
  - *an isoelectric period after ventricle depolarisation*
- **Q-T segment (0.3 - 0.4 sec):**
  - *ventricle depolarisation plus repolarisation time*

**ECG following a Heart Attack**

- **Myocardial infarctions (heart attacks) are caused by blockages of coronary arteries**
  - *blood is prevented from reaching cardiac muscle (ischemia) causing necrosis*
  - *ischemia depresses the ST segment*
- **The ECG due to an injury (infarct) usually has an elevated ST segment**
- **Damage is permanent so any altered ECG characteristic will remain with the patient:**
  - *doctors can easily tell if a patient has had a heart attack in the past*

**Sinus Node Dysfunction and AV block**

- **Problems with generating AV node action potentials (APs) or failure to transmit APs to the AV node**
- **Bradycardia:**
  - *slow heart rate*
- **Sinus node arrest:**
  - *no p-wave*