**GENERAL POINTS ON ECGs AND HOLTER RECORDINGS**

Referring practitioners may find the following observations of use:-

- **Nonspecific ST/T wave changes**

ST segment and/or T wave changes occur commonly in individuals with no cardiac pathology and are not infrequently seen during Holter recordings even in children or adolescents. Rapid upsloping ST depression with T wave flattening is particularly common during tachycardia and nonspecific ST/T changes are frequently observed in females.

ST depression is common during supraventricular tachyarrhythmias eg atrial fibrillation with a rapid ventricular response or PSVT (due to metabolic oxygen demands and possibly impaired coronary filling) and has no diagnostic significance in this context.

- **Normal ECG**

There is a wide variation in the normal ECG and some individuals have resting ST/T changes which become normal in appearance during exercise (‘pseudonormalisation’), returning gradually to the resting ECG appearance in the minutes following exertion.

- **Sustained Tachyarrhythmia**

This is arbitrarily defined as an arrhythmia lasting 30 seconds or longer.

- **First Degree AV Block**

Arbitrarily defined as a PR interval >20msecs (5 small squares on the ECG), this is commonly seen in healthy young adults (particularly during sleep and especially common in athletes) and is due to increased vagal tone. It is also common in the elderly and in patients taking beta blockers. Wenckebach may also occur during sleep in healthy young individuals.

- **Early Repolarisation Variant**

This term refers to the slightly elevated ST takeoff (often in association with J waves) which is seen in many ECGs. It generally reflects increased vagal tone and is a common finding in healthy young individuals and is particularly common in athletes and is most prominent during sinus bradycardia (especially during sleep when vagal tone is increased). During exercise the ST segment returns to baseline as heartrate increases.

- **Atrial Escape Rhythm**

Episodic slow atrial ectopic escape rhythm is a common incidental ECG finding on Holter recordings. It is especially common in children and young adults but may occur at any age and is most likely to be seen when the individual’s intrinsic heartrate is slow eg during sleep. It is identified by an abrupt change in P wave morphology and the P waves are general atypical in appearance compared to sinus P waves. It is of no clinical significance.

- **Differentiation of VEBs from Aberrant Conduction**

Aberrant conduction is most likely to occur when there is an abrupt change in heartrate (it is particularly seen during atrial fibrillation with a rapid ventricular response). Generally aberrantly conducted beats will show a bundle branch block pattern with a right bundle branch block favouring aberrancy. In general VEBs are followed by a full compensatory pause and SVEBs with aberrant conduction generally are not; the most reliable indicator of a supraventricular origin is if the QRS is preceded by an ectopic P wave. A very broad QRS complex favours a ventricular origin but VEBs arising from high in the His-Purkinje system may be relatively narrow. The presence of AV dissociation, fusion beats and capture beats during a broad-complex tachycardia suggests ventricular tachycardia.