

## **7. WOLFF (WOLFE)-PARKINSON-WHITE SYNDROME <sup>1,2</sup>**

Wolff (Wolfe)-Parkinson-White (WPW) is a very rare cause of sudden death. It results from an additional electrical connection between the atria (upper chambers of the heart) and the ventricles (lower chambers of the heart). This extra or accessory electrical pathway is present in approximately 1.5 people per 1,000 people. It runs in families in less than 1% of cases. In the majority it is completely silent and only detected on a routine ECG. In a small proportion of patients the extra electrical pathway allows conduction of the electrical pathway generating an electrical circuit which produces a very rapid heart rate. Most patients tolerate this well but some experience very troublesome palpitations, light-headedness and blackouts. A very small minority of patients may die suddenly from ventricular fibrillation (<0.1% of patients).

### **Symptoms**

Palpitations are the main symptoms. They can occur at any time and some patients learn to control them by holding their breath for prolonged periods. In many instances the palpitations remain until they are terminated by medical therapy in the accident and emergency department.

### **Signs**

When the patient is experiencing palpitations the heart rate is usually in excess of 150 beats per minute. When the patient has no symptoms there is nothing to find on examination.

### **How Is Wolff (Wolfe)-Parkinson-White diagnosed?**

WPW is diagnosed by performing an ECG. The ECG usually shows two abnormalities when the patient is free of symptoms – a short PR interval and a delta wave. It is often an incidental finding during a routine ECG check as part of a medical insurance or detected by a cardiologist when a patient is referred with palpitations.

### **Treatment**

The ideal treatment in patients with symptoms is to destroy the extra electrical pathway, a procedure termed radio frequency ablation. This is done by passing a wire into the heart via the large artery (femoral artery) in the leg. The abnormal pathway is located by electrical stimulation and destroyed by passing a high current through it. This takes approximately 2-3 hours and requires one night in hospital. For patients above 25 years without any symptoms there is no need for further tests.

Younger patients (under 25 years) are most at risk of sudden death and require further tests to assess their risk of developing life threatening electrical disturbances. This is best done by performing an exercise test under the supervision of a cardiologist. The abrupt disappearance of the delta wave on the ECG as the heart rate increases is a good sign, obviating the need for any

further investigation, however, if this does not happen then further electrophysical testing is recommended before one can be reassured.

The pathways can also disappear or degenerate as patients get older.

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<sup>1</sup> The following medical information has been kindly provided by CRY and is available for download in the website:  
<http://www.c-r-y.org.uk>.

<sup>2</sup> The medical information contained in this website is provided for information only. It is not intended to replace a consultation with an appropriately qualified medical practitioner and should not be used for the diagnosis, treatment or management of a heart abnormality. If you would like more information or are concerned that you might be affected by any of the conditions described in this website you should seek professional medical help and/or consult your doctor.