

- **Electrophysiological studies (EP studies)**

Electrophysiological studies are tests used to determine different types of arrhythmias, by testing the electrical activity of the heart in order to discover the origin of any abnormal cardiac rhythm.

The results of these tests help in establishing the correct diagnosis and, implicitly, in choosing the adequate treatment, no matter if it involves medication, a pacemaker implant, a cardiac defibrillator, ablation or a surgical intervention.

The electrical impulses follow a certain, well-established route through the heart. Myocardial infarctions, aging, arterial hypertension can lead to the formation of scar tissue that can cause an irregular heart rhythm. Moreover, in case of congenital cardiac diseases, the abnormal routes followed by the electrical impulses can cause arrhythmias.

This type of test involves the introducing of a catheter (a narrow tube) through a blood vein into the heart. Using an electrode, we send electric signals to the heart and we register its electric activity.

The aims of electrophysiological studies are:

- To determine the cause of an arrhythmia
- To assess the degree of efficiency of certain medicine in treating arrhythmias
- To treat a certain disorder by destroying the tissue inside the heart that is responsible for the abnormal electrical signals
- To determine whether a pacemaker or a cardiac defibrillator represents a viable solution for the arrhythmia
- To assess the risk of sudden cardiac death caused by cardiac arrest