

**Technology:** [Identification of abnormal cardiac substrate during left-ventricular pacing](#)

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**Abstract**

Techniques for identifying abnormal cardiac substrate, e.g., scar substrate, may be implemented, as an example, during implantation of a left-ventricular (LV) lead, e.g., for cardiac resynchronization therapy (CRT), which may enable placement of the LV lead to avoid the abnormal cardiac substrate. An example system for identifying abnormal cardiac substrate comprises at least one implantable LV lead comprising at least one bipolar electrode pair configured to sense a LV bipolar cardiac electrogram signal of LV tissue proximate the bipolar electrode pair. The system delivers cardiac pacing pulses to a left ventricle via at least one electrodes of the LV lead, which may be different then the electrodes of the bipolar pair, and which may be spaced at least a threshold distance from the bipolar pair of electrodes. The amplitude of paced depolarizations in the bipolar electrogram indicates whether tissue proximate the bipolar electrode pair comprises abnormal cardiac substrate.