A method of selecting of subset of electrodes in a stimulator device implanted in a patient for further clinical evaluation is disclosed. In one embodiment, the method comprises measuring at least first and second measurement for each of the plurality of electrodes that are indicative of the ability of the electrode if activated to provide useful therapy to the patient in which the stimulator device is implanted, such as electrode impedance, field potential, and nerve response. The measurements can be objective such as those measurements just mentioned, or can comprise subjective measurements which are quantified in response to qualitative feedback from the patient. A weight is then determined for each of the measurements, which may be a predetermined weight or determined on the basis of the variance of the measurement between the electrodes. The weight is then applied to each electrode measurement, which measurement may be normalized, and the weighted measurements for each electrode are preferably summed to arrive at a value which itself is indicative of a particular electrode’s ability to provide useful therapy to the patient. These values can then be used to determine a subset of the electrodes useful for further clinical evaluation in the patient, which improved the accuracy and speeding determining appropriate patient therapy.