Two separate studies measuring the perception of differences in site of electrode stimulation were conducted with cochlear implant patients who became deaf early in life. The multiple-electrode prosthesis manufactured by Cochlear Pty. Limited was used. Two of the possible mechanisms for the discrimination of different electrodes are pitch and loudness. The first study measured the discrimination of different electrodes using two procedures which minimised the influences of loudness cues on performance. In the first procedure, the stimulation patterns were symmetric sweeps across electrodes. The reference stimuli were apical-basal trajectories and the comparison stimuli were basal-apical trajectories. The electric stimulation levels were the same in the reference and comparison stimuli because the same electrodes were used in the trajectories. In the second procedure, the stimulation patterns used randomised variations in electric stimulation levels on the different electrodes. By randomly varying the loudness of the stimuli in a discrimination task, the patient is required to listen for more salient cues such as pitch. Both procedures gave comparable results. The second study was concerned with the estimation of order in percepts for stimulation on the different electrodes along the array which was related to the tonotopic order of the cochlea. Approximately half of the early-deafened patients tested revealed a tonotopic order in percepts which was comparable to that obtained from postlinguistically deafened adults.