

# Disposable vs. reusable electrodes for resting ECG, a study on hospitalised patients

**Year:** 2000

**Hospitals:** Cardiology Unit, Hospital Ramon y Cajal, Madrid, Spain and Cardiology Unit, University Hospital Virgen Macarena, Seville, Spain.

**Number of patients:** 122

**Aim:** The aim of the study was to compare reusable Welsh cup/clamp/plate ECG electrodes and disposable Blue Sensor SU ECG electrodes in regards to handling, skin adherence, ECG trace quality, patient comfort, skin friendliness and hygiene.

**Summary:** The patients were randomized into 2 groups: Group 1: Reusable electrodes (cups, clamps and plates) and Group 2: Disposable Blue Sensor SU electrodes. The results showed that, compared to the reusable electrodes, the disposable SU electrodes were easier to use and needed less preparation prior to application. The re-usable electrodes fell off in 35% of the patients while none of the single-use SU electrodes fell off during the ECG recordings. There was no difference in the evaluation of the signal quality between re-usable and single-use disposable electrodes. No patients experienced any discomfort from neither the re-usable nor the single-use SU ECG electrodes but the re-usable electrodes were observed to leave red marks in the skin after electrode removal. Microbiology tests showed the presence of micro-organisms on the reusable electrodes. The microorganisms could not be removed by cleaning the products according to manufacturer's instructions. Several of the bacteria seen on the electrodes are in literature related to hospital acquired infections.

