NASA TECH BRIEF

Marshall Space Flight Center

Improved Electrodes For Skin Contacts

The problem:

Measurements of body functions by the use of electrocardiograms or impedance plethysmographs are frequently distorted by the simple motion of the skin as a result of muscular movements.

The solution:

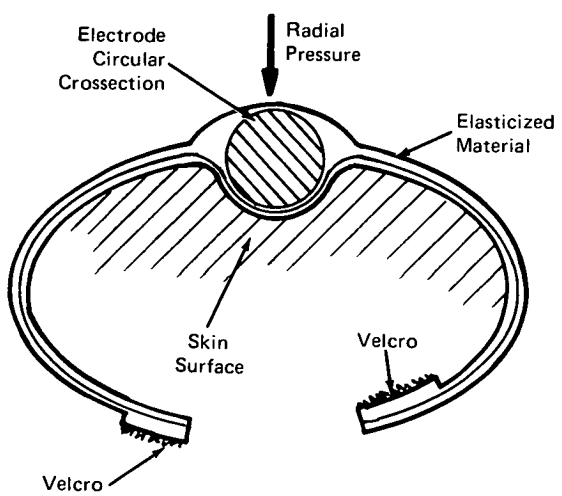
Thick, flexible electrodes with appropriate metal surfaces prevent unnecessary skin motion. The electrodes provide sufficient radial pressure directed toward the body surface to depress the skin a noticeable portion of its normal resilient thickness.

How it's done:

The electrode has a core of single-conductor, shielded cable (no insulation over shielding) with an outer diameter of 3/32 inch (2.5 mm), wrapped with a 0.25 mil (0.006 mm) thickness of Mylar. Aluminum is deposited on both sides to a total thickness of 0.40 mil (0.01 mm). Strips, 1/2-inch (1.3-cm) wide, of the aluminized Mylar are wound around the core in spiral fashion with approximately two-thirds strip-width overlap on each winding. Crimp-on connectors are attached to one end of the electrode for electrical connection to external equipment. The electrodes are held on the skin by a 2-inch wide elasticized cloth. The cloth, normally stretched 20% to 50% of the way around the limb is fastened to itself with Velcro material. To hold the electrode onto the elasticized material, loops of Teflon insulated wire are attached to the elastic, and the electrode is threaded through the loops. This allows the elastic material to be stretched over the electrodes without binding.

Notes:

1. Information concerning this innovation may be of interest to physicians and designers and manufacturers of medical instrumentation.
2. Requests for further information may be directed to:
   Technology Utilization Officer
   Marshall Space Flight Center
   Code A&PS-TU
   Marshall Space Flight Center, Alabama 35812
   Reference: B72-10698



Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:
Patent Counsel
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