**Skin Preparation:**

Determine electrode placement according to one of the configurations shown on this page. Use the following procedure to ensure good quality ECG data.

1. Minimize electrode problems, be sure to use the proper type of electrode. Check the expiration date on any disposable electrodes. If the mark left from the felt-tip pen has not been erased, remove the electrode with alcohol.

2. Shave hair from electrode sites. This improves conductivity, helps hold the electrode to the skin, and makes it easier to place the electrode in the correct location.

3. Rub each electrode site thoroughly with alcohol. This removes oil from the skin.

4. Make sure that the device is not subject to disturbances from the electrical mains.

5. Place an electrode on each prepared site.

**Clinical Lead Placement**

- **CL Lead Placement**
  - When operating to obtain CMS, CCS and CH, the A1, A2, and A3 leadwires must be connected as follows:
  - Label | Color | Channel | Lead Location
  - --- | --- | --- | ---
  - A1 | Green | CH | Mid-clavicular line in the fourth intercostal space.
  - A2 | Brown | CH | Mid-clavicular line in the same horizontal level as V4 (C4 & C5).
  - A3 | Black | CH | On either side of the neck or in the same level as the anterior lead.

- **ML Lead Placement**
  - When operating to obtain CMS, CCS and CH, the A1, A2, and A3 leadwires must be connected as follows:
  - Label | Color | Channel | Lead Location
  - --- | --- | --- | ---
  - ML1 | Green | CH | Lower left abdominal quadrant.
  - ML2 | Black | CH | Lower right abdominal quadrant.

**Resting Lead Placement**

- **Traditional 12 Electrode Placement**
  - Label | Color | Channel | Lead Location
  - --- | --- | --- | ---
  - V1 | Red | CH | Mid-clavicular line in the fourth intercostal space at the left sternal edge.
  - V2 | Yellow | CH | Mid-clavicular line in the fourth intercostal space at the left sternal edge.
  - V3 | Green | CH | Mid-clavicular line in the fifth intercostal space.
  - V4 | Brown | CH | Anterior axillary line on the same horizontal level as V4 (C4 & C5).
  - V5 | Orange | CH | Mid-axillary line on the same horizontal level as V4 and V6 (C4 & C5).
  - V6 | Purple | CH | Mid-axillary line on the same horizontal level as V4 and V6 (C4 & C5).
  - LA | Black | CH | Left arm.
  - RA | Black | CH | Right arm.
  - LL | Green | CH | Left leg.
  - RL | Black | CH | Right leg.

- **Modified 2 Leads**
  - Label | Color | Channel | Lead Location
  - --- | --- | --- | ---
  - A | Red | CH | Fourth intercostal space at the left anterior axillary line.
  - B | Red | CH | Right clavicle, just lateral to the sternum.
  - C | Green | CH | Fourth intercostal space at the right sternal edge.
  - D | Black | CH | Left clavicle, just lateral to the sternum.
  - E | Orange | CH | Fifth intercostal space (maV5) at the left sternal edge.
  - F | Blue | CH | Fifth intercostal space (maV5) at the mid-axillary line.
  - G | Green | CH | On the lower right chest wall, on a rib.

- **Hi-Res / Vector**
  - Frank X, Y, and Z Placements
    - Label | Color | Channel | Lead Location
    - --- | --- | --- | ---
    - X | M (Light Blue) | CH | Back of neck.
    - Y | M (Light Blue) | CH | Center of spine on the same horizontal level as V4 and V5 (C4 & C5).
    - Z | Green | CH | On the lower right chest wall, on a rib.