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# rainbow<sup>®</sup> ReSposable<sup>™</sup> Pulse CO-Oximeter<sup>™</sup> Sensor System Training



# Learning Objectives

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At the end of this lesson, the learner will be able to:

- > Identify key application, inspection and precautionary guidelines for the adult and pediatric rainbow ReSposable Sensors
- > Identify the components of the adult and pediatric rainbow ReSposable sensors
- > State proper assembly and application techniques for the rainbow ReSposable sensors
- > Identify circumstances when optical shielding may be useful
- > Describe the disassembly process for the rainbow ReSposable sensors
- > Describe the cleaning process for the rainbow ReSposable sensors

# ReSposable Sensor Application Guidelines

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- > The preferred sites are the ring or middle finger of the non-dominant hand
- > Compare the fingers and use the thinnest finger that will completely cover the detector window
- > Use a pediatric sensor (R2-20a/R2-20r) for patients with slender digits that don't completely cover the detector window
- > Always choose a site that is well perfused and has little motion
- > Intravascular dyes or externally applied coloring (such as nail polish) may lead to inaccurate measurements
- > Once the sensor is applied, use the red lines on the sensor to check alignment; be sure that the emitter is directly over the detector
- > In areas with excessive ambient light or monitors which emit bright light, cover the sensor with a dark or opaque material such as an ambient light shield
- > Connect the sensor to the patient cable following application

# ReSposable Sensor Guidelines - *Inspection*

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- > The sensor site for *ReSposable* sensors must be checked or changed at least every eight (8) hours to ensure adequate adhesion, circulation, skin integrity and correct optical alignment
- > When changing application sites or reapplying the adhesive sensor, first disconnect the reusable sensor from the patient cable and reconnect once the sensor is repositioned/reapplied to the patient

# ReSpposable Sensor Guidelines - *Caution*

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- > Exercise extreme caution with poorly perfused patients; skin erosion and/or pressure necrosis can be caused when the sensor is not frequently moved. Assess site at least every two (2) hours with poorly perfused patients.
- > During low perfusion, the sensor site needs to be assessed frequently for signs of tissue ischemia, which can lead to pressure necrosis.
- > Do not use tape to secure the sensor to the site; this can restrict blood flow and cause inaccurate readings. Use of additional tape can cause skin damage and/or pressure necrosis or damage the sensor.
- > The sensor should be free of visible defects, discoloration, and damage. Never use a damaged sensor or one with exposed electrical circuitry.

# ReSposable Sensor Components

- Single Patient Adhesive Sensor
  - 1 per patient

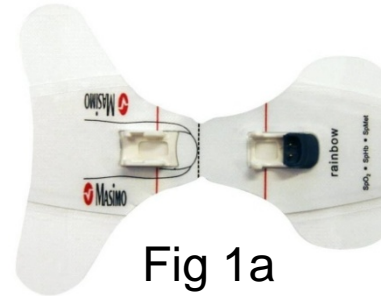


Fig 1a

- Reusable Sensor
  - Able to be used for approximately 3,360 hours



Fig 1b

- Assembled ReSposable sensor

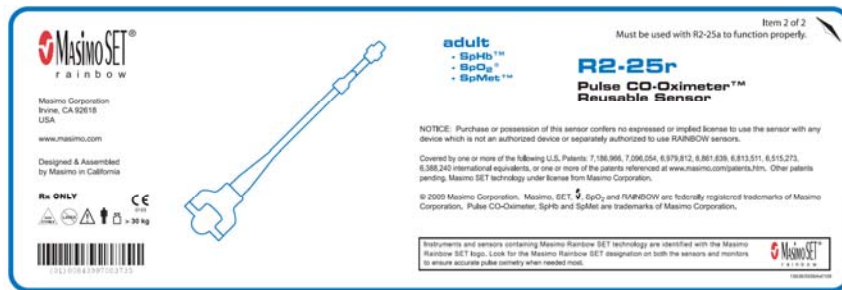


**Re**usable + **Di**sposable = **ReS**posable

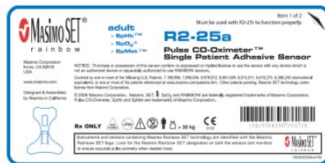
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# R2-25 Adult ReSposable Sensor



R2-25r Reusable Sensor



R2-25a Adhesive Sensor

Patients weighing > 30 kg



Preferred application site:  
Middle or ring finger of the non-dominant  
hand

# R2-20 Pediatric ReSposable Sensor



R2-20r Reusable Sensor



R2-20a Adhesive Sensor

Patients weighing 10 - 50 kg



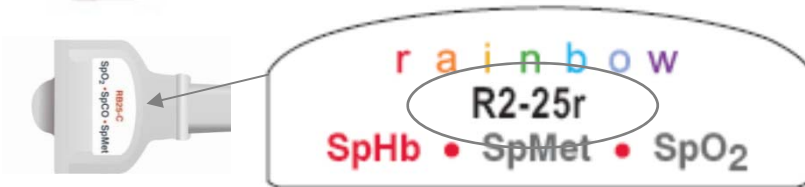
Preferred application sites:  
Middle or ring finger of the non-dominant hand

Please see product's Directions for Use for more information



# Adhesive and Reusable Sensor Correctly Matched

Match the ADHESIVE SENSOR with the correct REUSABLE SENSOR



Reusable Sensor Label



Single Patient Use Adhesive Sensor Label

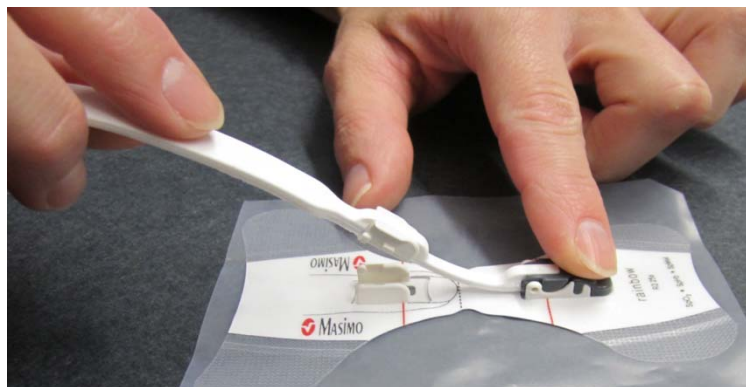


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# ReSposable Sensor Assembly

## Attach the Reusable Sensor Cable to the Adhesive Sensor

1. Position the adhesive sensor so it lies flat
2. Pick up the reusable sensor and place it over the adhesive sensor
3. Align the gray detector and white emitter over the detector insert and emitter insert
4. Press the gray detector into the detector insert to lock in place. A clicking sound occurs when it is locked
5. Press the white emitter into the emitter insert to lock in place. A clicking sound occurs when it is locked



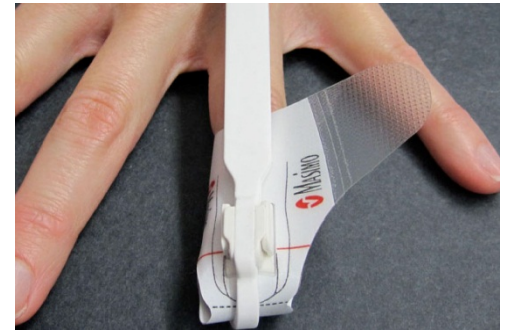
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# ReSposable Sensor Application

## Attach the Assembled Sensor to the Patient

1. Remove the backing from the adhesive sensor
2. Orient the adhesive sensor so that the detector can be placed first onto the fleshy part of the finger
3. Press the smaller adhesive wings of the adhesive sensor onto the finger one at a time (complete coverage of the detector window is needed to insure accurate data)
4. Fold the adhesive sensor with finger design over the finger nail and secure the larger wings down one at a time
5. When properly applied the emitter and detector should be vertically aligned
6. Confirm alignment by checking the red lines on the sensor from the side



# Shielding the Sensor

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- > Shielding is recommended in the presence of high ambient light sources such as surgical lights, phototherapy, fluorescent lights, infrared heating lamps, direct sunlight, strobe light environments or monitors which emit bright lights.



**Disposable Optical Light Shield Accessory**

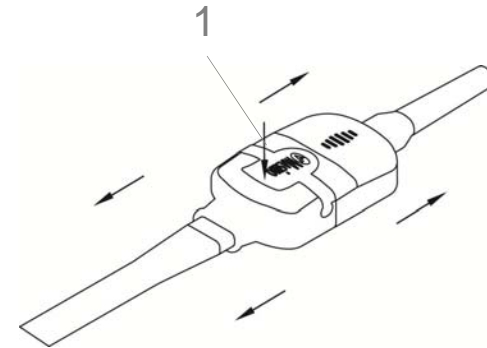
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# Disconnecting the Sensor

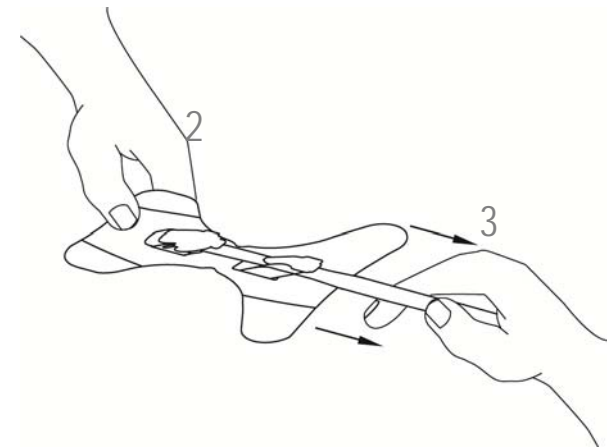
## Disconnecting: Patient Cable

1. Hold the sides of the cable connector
2. Place thumb on latch and press (1)
3. Hold latch down while pulling the connectors apart



## Disconnecting: Sensor


1. Hold the sensor flat
2. Hold the adhesive sensor near the gray detector (2)
3. With the opposite hand, pull the reusable sensor away from the adhesive sensor to disconnect (3)



Please see product's Directions for Use for more information

# ReSpposable Sensor Considerations

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- > Clean the reusable sensor and cable after each use
- > Properly store the reusable sensor between uses
- > Use the area on the sensor to mark each time a new adhesive sensor is applied
- > Test the assembled sensor on the oximeter before applying the sensor to the patient
- > Maintain a back-up supply of reusable and adhesive sensors
- > Do Not discard the reusable sensor after use 
- > Minimize the use of multiple adhesive sensors per patient

# Cleaning Reusable Sensor

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- > Only the reusable sensor can be cleaned and reused
- > Remove the adhesive sensor from the patient and disconnect the reusable sensor from the patient cable
- > Remove the reusable sensor from the adhesive sensor. Discard the adhesive sensor after use
- > Clean the reusable sensor components by wiping with a 70% isopropyl alcohol pad or a cloth saturated with mild detergent.
- > If low level disinfection is required, use a 1:10 bleach / water solution
- > Saturate a cloth or gauze pad with the cleaning solution and wipe all surfaces of the sensor, cable, and connector
- > Saturate another cloth or gauze pad with sterile or distilled water and wipe all surfaces of the sensor, cable, and connector to remove any cleaning solution residue
- > Dry the reusable sensor with a clean cloth and allow the cleansed sensor to dry thoroughly before use