

**1. Items to bring to the experiment:**

**Disposable**

- Nose clip
- Mouthpiece
- 15 ft. CO2 sampling line extension

**Non-disposable**

- Two-way non-rebreathing valve
- Mouthpiece-valve connecting tube
- Gas delivery tube
- Douglas bag filled with 5% CO2 air
- Goose neck stand
- Signal bar (optional)

**CO2 recording**

- CO2 monitor (monitor, 7ft. sampling line)
- Watch
- Switching timesheet

**2. Before the experiment:**

- Set up CO2 monitor and connect sampling line
- Connect two-way non-rebreathing valve to the goose neck stand and fix it onto the scanner table
- Set up mouthpiece, mouthpiece-valve connecting tube, and sampling line extension

**3. Prepare the subject:**

- Put on mouthpiece and connect the mouthpiece-valve connecting tube to the two-way non-rebreathing valve
- Put on nose clip
- Connect the Gas deliver tube to the two-way non-rebreathing valve
- Check CO2 trace on the CO2 monitor

**4. Perform CVR scan**

**Person stays outside**

- Signaling the researcher inside the scanner room at the 6<sup>th</sup> dynamic
- Observe the CO2 trace

**Person stays inside**

- Start the stop watch when signaled
- Switch according to the timing sheet

**5. After CVR scan**

- Remove nose clip and mouthpiece from the subject
- Disassemble the gas delivery system
- Disassemble the CO2 recording system
- Dispose of mouthpiece, nose clip, sampling line extension.
- Clean up the two-way non-rebreathing valve and mouth piece-valve connecting tube

**1. Items to bring to the experiment:**

**Disposable**

- Nose clip
- Mouthpiece
- CO2 sampling line extension

**Non-disposable**

- Two-way non-rebreathing valve
- Mouthpiece-valve connecting tube
- Gas delivery tube
- Douglas bag filled with 5% CO2 air
- Goose neck stand
- Signal bar (optional)

**CO2 recording**

- CO2 monitor (monitor, CO2 sensor, sampling line with dehumidifier, power cord)
- USB drive
- Watch
- Switching timesheet

**2. Before the experiment:**

- Set up CO2 monitor and connect sampling line
- Connect USB drive to the monitor and start recording
- Connect two-way non-rebreathing valve to the goose neck stand and fix it onto the scanner table
- Set up mouthpiece, mouthpiece-valve connecting tube, and sampling line extension

**3. Prepare the subject:**

- Put on mouthpiece and connect the mouthpiece-valve connecting tube to the two-way non-rebreathing valve
- Put on nose clip
- Connect the Gas deliver tube to the two-way non-rebreathing valve
- Check CO2 trace on the CO2 monitor

**4. Perform CVR scan**

**Person stays outside**

- Signaling the researcher inside the scanner room at the last dummy scan
- Observe the CO2 trace

**Person stays inside**

- Start the stop watch when signaled
- Switch according to the timing sheet

## **5. After CVR scan**

- Remove nose clip and mouthpiece from the subject
- Disassemble the gas delivery system
- Stop CO<sub>2</sub> recording
- Disassemble the CO<sub>2</sub> recording system
- Dispose of mouthpiece, nose clip, sampling line extension.
- Clean up the two-way non-rebreathing valve and mouth piece-valve connecting tube

## CVR experiment switching instruction

**Start the stop watch when signaled**

<i>Action</i>	<i>Watch</i>	<i>Condition</i>
Start stop watch	00:00:00	Room air
Switch on	00:00:15	5% CO <sub>2</sub>
Switch off	00:01:05	Room air
Switch on	00:02:15	5% CO <sub>2</sub>
Switch off	00:03:05	Room air
Switch on	00:04:15	5% CO <sub>2</sub>
Switch off	00:05:05	Room air
End	00:07:00	

# Illustration of air bag connection and switching

Room air breathing **→** *Switch the valve 90° counterclockwise to block the room-air port* **→** CO2 breathing **→** *Switch the valve 90° clockwise to block the airbag port* **→** Room air breathing

