Let's Talk About...

ICU Monitors

Your child will be watched very carefully while she is in the Intensive Care Unit. Her care team will attach several sensitive instruments to her called monitors. The monitors will give them information about how her body is working. Her doctors and nurses will watch the monitors so they can better understand her condition.

You may feel overwhelmed when you see your child attached to so many wires and tubes. It is a normal reaction. This handout will help you to understand what the monitors do and how they help to keep your child safe.

Why do they beep?

If there is a slight change in the information gathered from the monitors attached to your child, or if a monitor senses your child's movement, an alarm will sound.

The monitors can be seen from the nursing station. If the alarm sounds, a member of your child's care team will come and check on your child and turn it off. Most alarms do not signal a crisis. They are there to gather information so the care team can help your child get better.

Cardiac-apnea monitor

The machine that shows different line patterns is called the cardiac-apnea monitor. The staff watches the numbers and the wave of the lines shown on the monitor. They give information about your child's condition.

Your nurse will check the boxes next to the names of the wave forms or monitors that apply to your child.

☐ **HR—Heart Rate**

Heart rate is a record of the beating of the heart. You may also hear the words electrocardiogram (ee-LEK-tro-CARD-ee-o-gram) or EKG/ECG used to describe this activity. Electrodes (wires) attached to the outside of the chest monitor the heart's rhythm and rate.

☐ **RR—Respiratory Rate**

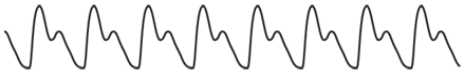
The same electrodes that record heart rate also sense your child's chest movements. They record the number of breaths per minute (respiratory rate) and show the number and the pattern in a line on the monitor.

☐ **Oximeter/SATS—Oxygen Saturation**

The amount of oxygen in the blood is measured through the skin. It is like a soft clamp attached to your child's finger, foot, or ear. One side shines an infrared light. The other side is a receiving pad. Infrared light passes through the finger and gives information to the receiving pad. The pad sends the information to the monitor.

☐ **T/Temp—Temperature**

Taking you child's temperature by mouth is not accurate enough for her caregivers in the ICU. They need to know the temperature inside of her body. A sensor attached to a tiny tube, called a urinary catheter, can be inserted into the urinary tract. A soft rectal probe may be used instead. The number you see on the screen is her temperature recorded in Celsius. The nurse can tell you what it is in Fahrenheit.



☐ **ABP—Arterial Blood Pressure**

The arteries are connected to the left side of the heart. They carry blood from the heart to the rest of the

body. The left side of the heart works hard to push the blood through the arteries and carry food to the cells *(see Figure 1)*. Arterial blood pressure is the amount of pressure in those arteries.

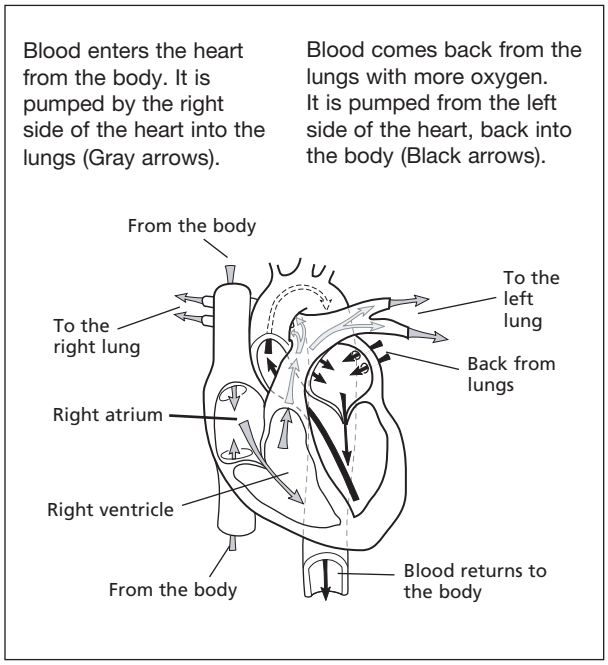


Figure 1

The ABP monitor is put into an artery through a tiny tube called a catheter. The monitor measures arterial (ar-TEE-ree-al) blood pressure. The number and the wave form are shown on the cardiac-apnea monitor. The catheter may also be used to draw blood for laboratory tests.

☐ CVP—Central Venous Pressure

The veins carry blood from the body back to the heart. Blood is then pumped into the lungs for more oxygen. The right side of the heart pumps the blood into the lungs. A central venous pressure (CVP) monitor measures the pressure in a large vein that brings blood into the heart.

A long catheter is placed into a vein, usually in the arm or leg, and then guided to a vein near the heart. Other times the catheter is guided into the right atrium. A machine measures the blood pressure and sends the information to the monitor.

Other monitors

☐ ETCO2 or TCO2—End Tital Carbon Dioxide, Transcutaneous (tranz-cue-TAY-nee-us) Carbon Dioxide

When we breath in and out, we keep a good balance of oxygen and carbon dioxide (CO_2) in our blood. Your child's care team may want to know if your child has too much or to little CO_2 in her blood. There are two ways to measure this, and both work outside of her body.

An $ETCO_2$, or end tidal carbon dioxide sensor, measures the amount of carbon dioxide in your child's blood. The $ETCO_2$ is connected to her ventilator and measures the amount of carbon dioxide in the exhaled air. The TCO_2, or transcutaneous monitor, is taped to her skin and measures the amount of carbon dioxide in the skin membrane.

☐ EEG—Continuous Electroencephalography

EEG is a short name for Continuous Electroencephalography (e-LECK-tro-en-sef-a-LOG-raf-ee). An EEG measures the brain's electrical activity. It is used to detect seizures. Wires, called electrodes, are placed on your child's scalp or just under the skin to measure brain waves.

☐ SVO2—Saturation of Venous Oxygen

The heart pumps oxygen to the cells in the body through the arteries. The cells use the oxygen for food and make carbon dioxide (CO_2) and other waste materials into the veins. The veins then carry the blood to the lungs, where we exhale the CO_2. SVO_2 is a measure of how well the heart is pumping. It records how much oxygen is in the venous blood. A catheter is guided through the heart and into the pulmonary artery. It is a procedure much like the one to measure central venous pressure.

Ask your nurse...

It is important for you to know about your child's care. The information in this handout is very general. Your nurse can give you specific

information about your child's monitors. Feel free to ask any questions that you may have. Your nurse will be happy to answer them.

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