Gaumard®
Simulators for Health Care Education

SUSIE® S2400

User Guide

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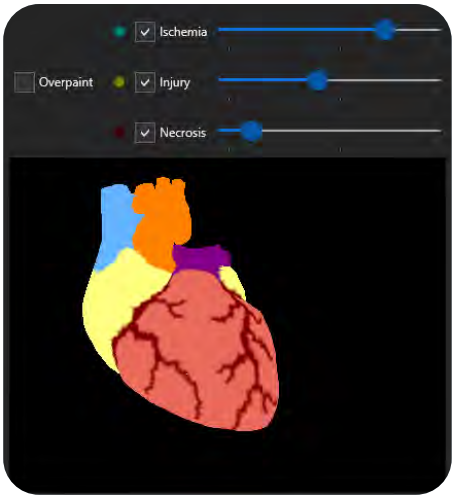
4. Working with UNI 3® 153



Warning icon: Very important information that must be heeded so that the simulator is not damaged.

Caution icon: Important information to be aware of and proceed with caution.

Note icon: Additional information and/or tips for usage of the simulator.

SUSIE® S2400 - Advanced Practice Nursing Patient Simulator is an interactive educational system developed to assist a certified instructor. It is not a substitute for a comprehensive understanding of the subject matter and not intended for clinical decision making.

1. Introduction

1.1 SPECIFICATIONS

Susie® S2400

- Weight: 77 lbs. (35 kg.)
  NOTE: Fluid reservoirs are empty.
- Length: 5 feet 6 inches (167.6 cm)
- Stomach Bag: 1.5 L
  Bladder Reservoir: 250 mL.
  Gastric Reservoir: 70 mL.
  Glucose Finger: 1 mL
  Rectum: 1 L
  Central Line Reservoir: 15 mL.
- Wired connectivity: Gaumard USB Communication Module (RJ45)
- Wireless connectivity: Gaumard USB Com. Module RF IEEE 802.15.4
- Bluetooth connectivity
- Battery Charger:
  Input: 100-240V~/50-60Hz/700mA - 500 mA/50VA
  Output: 12V , /2,0/24W

1.2 CARE & MAINTENANCE

Damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines.

The lubricants and other accessories provided are for use with the accompanying patient simulator only. The lubricants and other accessories are not suitable for human use or medical treatment/diagnosis and should never be used for such purposes.

Never assemble or disassemble the simulator while it is turned ON. Failure to comply to this warning may result in electrical damage to the simulator.

General

- Avoid contact of rings, nails, and sharp objects to the simulator's skin. These objects can leave indents or small tears in the skin.
- Ball point pens, ink, and markers permanently stain the skin.
- Do not wrap this or any other Gaumard product in newsprint.
- Replacement parts and/or consumables are available from Gaumard Scientific or from your Distributor.

Operating Conditions

- Operating temperature: 50°-95° F (10°-35° C)
- Humidity: 5%-95% (non-condensing)

Storage Conditions

- Store the simulator in a cool, dry place. Extended storage above 85 degrees Fahrenheit (29 Celsius) will cause the simulator to soften and slowly warp.
- Humidity: 40%-60% (non-condensing)
- Do not store the simulator with a discharged battery. Recharge the battery at the end of every simulation session.
- Recharge the battery at least once every 30 days even if the simulator is not in use, otherwise, permanent loss of capacity might occur because of self-discharge.
- Do not allow any objects to rest on the face or chest skin of the simulator while in storage for an extended period of time.
- Do not store the simulator face down. Pressure points on the face and chest skin may warp or damage the skin.
- Store the simulator lying flat. Do not store the simulator sitting up for an extended period of time.

To avoid damage to the simulator, please store and ship it in the clear poly bag provided.

Procedures

- Do not attempt to intubate without lubricating the airway adjunct with MINERAL OIL lubricant. Do not use silicone oil as a lubricant. Failure to lubricate the device will make intubation very difficult and is likely to result in damage to the simulator's airway.
- Mouth to mouth resuscitation without a barrier device is not recommended. It will contaminate the airway.
- Treat the simulator with the same precautions that would be used with a real patient.
- Only use Gaumard's provided simulated blood. Any other simulated blood containing sugar or any additive may cause blockage and/or interruption of the fluid system.

General Cleaning

- The simulator should be cleaned with a cloth dampened with diluted liquid dish washing soap.
- Remove all traces of any lubricant.
- A secondary cleaning with a cloth dampened with 70% isopropyl alcohol can be performed if required
- Allow to dry completely.
- Do not clean with harsh abrasives.
- Do not use povidone iodine on the simulator.
- The simulator is "splash-proof" but not water-proof. Do not submerge or allow water or other liquids to enter the interior of the simulator.
- A lint roller or masking tape may be used to remove lint or small particles from the skin of the simulator.
- Always purge with clean distilled water and then drain the reservoirs at the end of the simulation session. Doing so will retard the formation of mold and prevents the system from clogging.

ECG and Electrical Therapy

- Only deliver electrical therapy when the simulator is fully assembled, dry, and undamaged.
- Defibrillation is only allowed on the sternum and apex sites. Remember to always use the Adapters for Non-Snap DEF Electrodes in these locations.

- **NEVER** deliver a shock to ECG electrode sites. Doing so will result in internal damage to the simulator. This is considered improper use and is **NOT** covered by the simulator's warranty. The system will require repair at a Gaumard facility.
- Make sure the defibrillation pads to be used on the simulator are in good condition.
- It is a good practice to remove any gel residues after each use. Failure to do so will leave behind a film of electrode gel that hardens causing arcing and pitting.
- To aid removal of ECG gel, sprinkle baby powder on the residual ECG gel to dry it up and gently remove it with the pad of your finger.
- Medical products, such as electrodes, may use powerful adhesives that can be difficult to remove. A gentle, degreasing cleanser may be needed.
- If dark traces appear on the conductive sites due to gel residue or previous arcing, remove the traces with a pencil eraser and then clean with alcohol.
- Do not reuse the gel adhesive pads. Do not leave them on for next day use.
- Use hard paddles or wet-gel pads.
- Avoid using solid gel pads since they present higher risk of burning the simulator's skin.
- Gel pads have a shelf-life. Confirm they are not expired to avoid arcing.
- Be sure the simulator is not in contact with any electrically conductive surfaces.
- Use the simulator only in a well-ventilated area that is free of all flammable gases.
- **NEVER** attempt to service or modify any of the electrical connections, especially those between conductive skin sites and the internal electronics.
- Discontinue use if any wires are found exposed with damaged insulation.

IV Arm

- The use of needles larger than 22 to 23 gauge will reduce the lifetime of the lower arms' skin and veins
- Only use Gaumard's simulated blood provided with the package. When using simulated blood that contains sugar and/or other additives, blockage and/or disruption of the vascular system may occur.
- Always purge with clean water, then drain the venous system at the end of each day of simulation. Doing so will retard the formation of mold and prevent clogging of the system.
- We recommend flushing the veins, at least once a month, with a 70:30 solution of clean water to isopropyl alcohol (IPA) to prolong the life of the vasculature system.
- For more information regarding the replacement of veins and other consumable items, please contact technical support.

Real CO_2 Exhalation (Optional)

- Due to shipping regulations, CO_2 cartridges are not included with the system. The required 16g threaded CO_2 3/8”-24UNF-2A cartridges can be purchased at most bicycle or hardware stores.

Review the safety and warning checklist below before using the CO_2 feature. Failure to comply with the warnings listed below and those included with the original cartridge packaging may result in serious personal injury.

- Always follow the manufacturer's safety and warning information included with the CO_2 cartridge package.
- Never point a CO_2 cartridge at yourself or others.
- Do not use damaged CO_2 cartridges.
- Do not puncture the cartridge CO_2 seal manually.
- Do not expose the CO_2 cartridges to high temperatures as indicated on the product's packaging.
- Install threaded cartridges only (3/8”-24UNF-2A). Do not attempt to install a cartridge that does not meet the specifications in this document.
- Do not overtighten the cartridge into the simulator's cartridge harness.
- Do not remove the CO_2 cartridge if the simulator is not fully operational.

1.3 TERMINOLOGY

Facilitator/User

The person conducting the simulation; an instructor or lab staff member.

Clinical State

A collection of vital signs details that demonstrates a patient's progress or decline during a session.

Profile

A unique software configuration, including custom clinical states, scenarios, and options. Each profile acts as a separate program so changes made to one profile have no effect on the others.

Provider

A person participating in the simulation as a healthcare provider.

Scenario

A saved sequence of physiological states like a play list. Scenarios provide a level of automation that unburdens the facilitator and allows standardized presentation of symptoms.

Scenario Item

A clinical state item that is part of a scenario. Scenario Items may also represent a fixed delay period such as "Wait" or a pause such as "Wait Indefinitely."

UNI 3

The software application used to control the simulator and evaluate care providers.

1.4 DEVICE SIZES

Invasive Procedure	Recommended Device Size	Helpful Hints
Intubation Blade Size	Miller 4 or MAC 3.5	-
LMA	Size 4	Lubricate the adjust before insertion.
Oral Intubation	ETT 6.5 -7.0	Lubricate the adjust before insertion.
Nasal Intubation	ETT 6.0-6.5	Lubricate the adjust before insertion.
Nasogastric Tube		Lubricate the adjust before insertion.
Tracheostomy/ Cricothyrotomy Surgical Insert	I.D. Size 5-7	Lubricate the adjust before insertion.
Gastrostomy	18-22 Fr	Reservoir holds 70 mL.
IV Arm System	18-20g Forearm 20-22g Hand	Use smaller needles to extend the life of the arm skin.
Urinary Catheter	16 Fr for female 16 Fr for male (optional)	Bladder holds 250 mL.
Central Venous Line	-	CVL reservoir holds 15 mL. To pull back blood for sampling/patency check, do this **BEFORE** flushing the site with 0.9% normal saline or it will dilute the 15 cc of blood that was prefilled in the reservoir. Prime the 15 CC CVL reservoir with 15 ml of simulated blood before the exercise. Compatible with central line dressing that utilizes chlorhexidine.
Enema	-	Rectum holds 1 L.

2. Initial Setup

2.1 UNBOXING

A 1-day in-service (on-site unboxing and training) may be purchased for SUSIE where a Gaumard Field Service technician will perform the unboxing, assembly, and training of the simulator.

Save ALL boxes and shipping materials SUSIE is shipped with in the event that a repair may be needed.

Contact your Gaumard Sales Representative or Gaumard Customer Service about purchasing a 1-day in-service for your SUSIE.

- Remove the simulator from the case carefully with the assistance of at least two persons.
- Avoid lifting the simulator by the arms as this could cause damage to the shoulder joints.
- Rest the simulator on a patient bed or table capable of supporting the weight of a real patient.
- It is recommended that SUSIE's head rest flat on the bed or on a thin pillow.

2.2 PACKAGE CONTENTS

Item Name - Box 1	Item Count
S2400 Transport Case	1
S2400 Main Simulator	1
Gaumard Hospital Gown	1
Battery Charger	1

Item Name - Box 2	Item Count
Left Lower Leg with Healthy Foot	1
Right Lower Leg with Healthy Foot	1
Ulcerated Left Foot	1
Drug Recognition Programmable Syringes Kit	1
Adult Simulated Glucose Solution Kit (Set of 3)	1
Mineral Oil	1
Modified Adult Blood Pressure Cuff	1
S2400 Accessories Box	1
Drug Recognition Filling Kit	1
Blood Pressure Tube Adapter Kit (Set of 2)	1
Stomach/Gastronomy/ Colostomy Filling Kit	1
IV Filling Kit	1
Central Venous Line Insert	1
Central Venous Line Filling Kit	1
Bladder Filling Kit	1
Bleeding Finger Filling Kit	1
ECG Snap Insert Kit (Set of 4)	1
ECG Patch Insert Kit (Set of 4)	1
Defibrillation Patch Insert	2
ECG & Defibrillation Inserts Extraction Tool	1
Tracheostomy Insert	1
Glucose Finger Assembly	5
S2400 Ostomy Set (Set of 4, 2 Installed)	1
Allen-Key Set (Set of 2)	1
Standard Gynecological Package	1
Internal Pathologies Uteri Package (Set of 9)	1
External Pathologies Uteri Package (Set of 10)	1
Antecubital Non-Latex Vein Set	1
Decubitus Ulcers Set (Set of 4)	1

Item Name - Box 3	Item Count
Right Breast with Fibrocystic Disease Assembly	1
Left Breast with Benign Mass Assembly	1
Right Breast with Retracted Nipple Assembly	1
Left Breast with Giant Sarcoma Assembly	1
Left Breast with Scirrhous Carcinoma Assembly	1

Item Name - Box 4	Item Count
Microsoft Surface with UNI Software Tablet Kit	1
Microsoft Surface with UNI Software	1
Wireless Stylus Pen Digitizer	1
Keyboard, Microsoft Surface Pro Type Cover	1
Bump Case, Surface Pro	1
Power Cord, EU, CEE 7/16 / IEC 320-C7	1
Power Cord, UK, BS1363A / IEC 320-C7	1
RF Communications Module with RJ45, Large Range	1
RJ45 Ethernet Cable, 15' L	1
Wireless Streaming Audio Headset	1
SUSIE® S2400 User Guide	1
SUSIE® S2400 SLE™ Facilitator's Guide	1

SUSIE S2400 can also be purchased with a variety of"6. Options 197" on page v_ (learn more on pg. 197).

2.3 SIMULATOR ASSEMBLY

Lower Legs Assembly

If SUSIE S2400's legs are not attached, this may result in pneumatic problems with the simulator since the red pulse line may not be connected. For this reason, only assemble the lower legs on SUSIE when the simulator is off.

Remove the legs when transporting SUSIE inside the protective case.

SUSIE S2400 is shipped with her lower legs uninstalled.

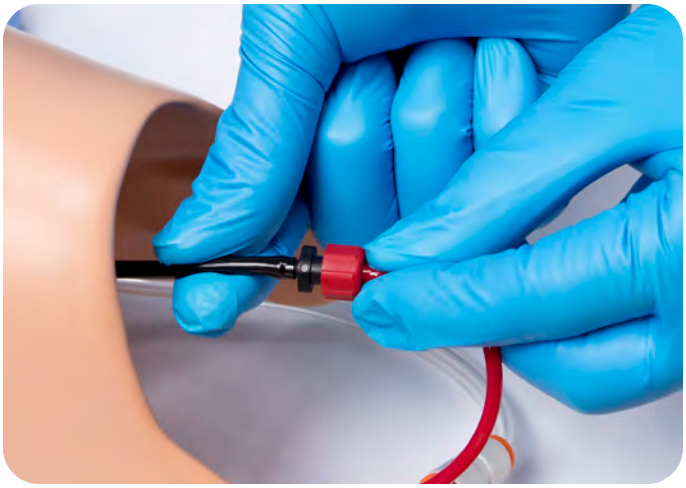
To attach her lower left leg:

1. Remove the fixed knee bolts from the knee joints of the left leg using the hexagonal wrench.

2. Connect the tubing to the corresponding side of the white connector and tuck the hose into the lower leg.

3. Locate and connect the black and red ends of the pulse line.

The black side of the pulse line descends from the upper leg while the red side of the pulse line ascends from the lower leg.



4. Orient the knee joints of the upper and lower legs so that the knee bolt holes are aligned.

5. Reinsert the knee bolts to hold the lower and upper leg together.

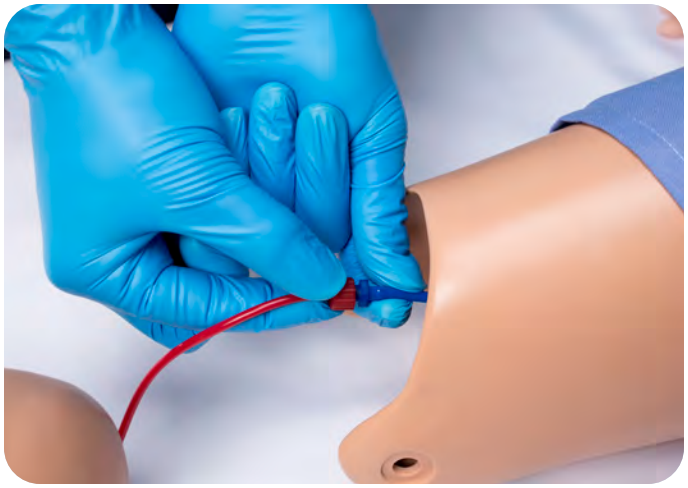
6. Secure the knee bolts without overtightening.

To attach her lower right leg:

1. Remove the fixed knee bolts from the knee joints of the right leg using the hexagonal wrench included.

2. Connect the pulse line.

The blue side of the pulse line descends from the upper leg while the red side of the pulse line ascends from the lower leg.



3. Orient the knee joints of the upper and lower legs so that the knee bolt holes are aligned.

4. Reinsert the knee bolts to hold the lower and upper leg together.

5. Secure the knee bolts without overtightening.

2.4 BATTERY

SUSIE has an average battery life of approximately 6 hours. Total battery runtime is dependent upon changes such as breathing rate, volumes, and seizures of the simulator. The battery charge will be displayed on the software panel after the connection with the simulator is established.

Do not store the simulator with a discharged battery. Recharge the battery at the end of every day of simulation. If the simulator will not be used for an extended period, recharge the battery at least once every 30 days. Doing so will prevent damaging the battery due to discharging.

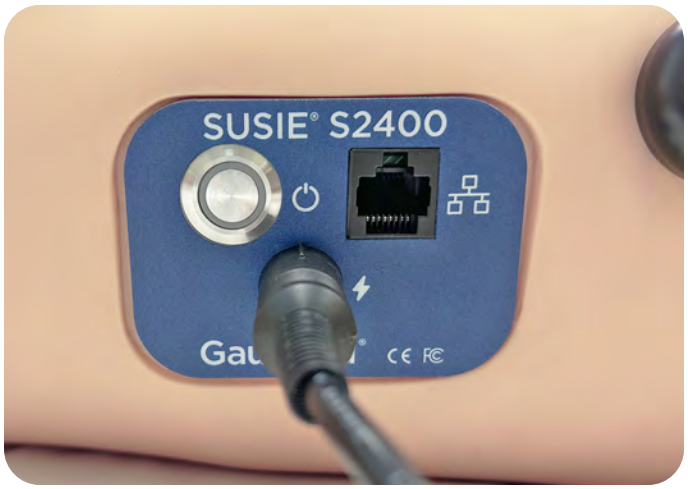
Charging the Battery

SUSIE's battery can only be recharged using the SUSIE Charger while the simulator is off or on standby.

Turn the simulator off and connect the battery charger to recharge the battery.

1. Close the **UNI** software to turn the simulator off.

2. Connect the charger to the simulator's charging port located on the right side of the torso.



3. Allow the simulator to charge for 2-3 hours (or until the **LED** button stops flashing and is a solid light) indicating the simulator is ready for use.

To receive feedback from SUSIE on her battery charge level, disconnect the charger and press the LED button for 1 second. The LED button will show the status of the battery as different LED colors:

Green = Sufficient battery level

Yellow = Low battery level

Red = Recharge the battery

To see the yellow or red light battery indicator, the button must be pressed in the same manner as the green image above.

2.5 TURNING ON SUSIE VIA BLUETOOTH

Communication via Bluetooth

Bluetooth is SUSIE's primary method of communication:

1. After reading the manufacturer's care and caution information, press the power button to turn on the Tablet PC.

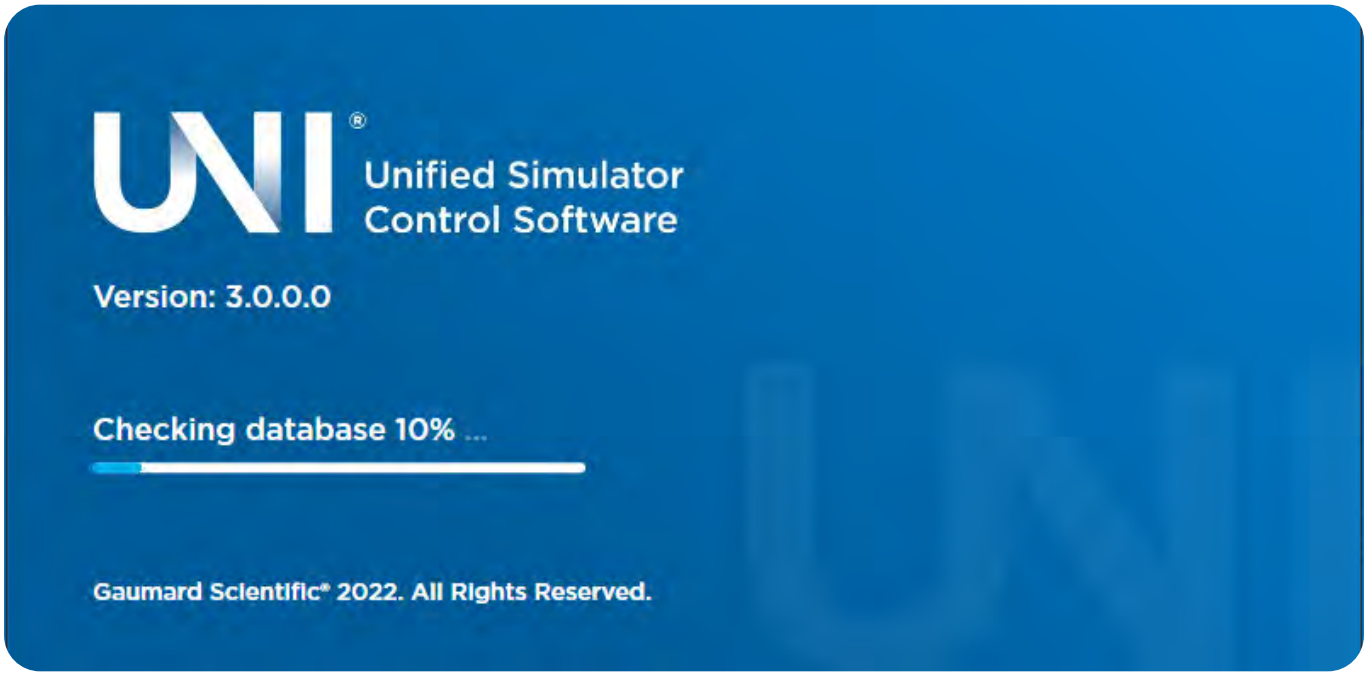
As shown in the photo, if the RF Module is plugged into the PC tablet, disconnect it before attempting to establish a Bluetooth connection.

2. Hold the LED button located on SUSIE's right torso.

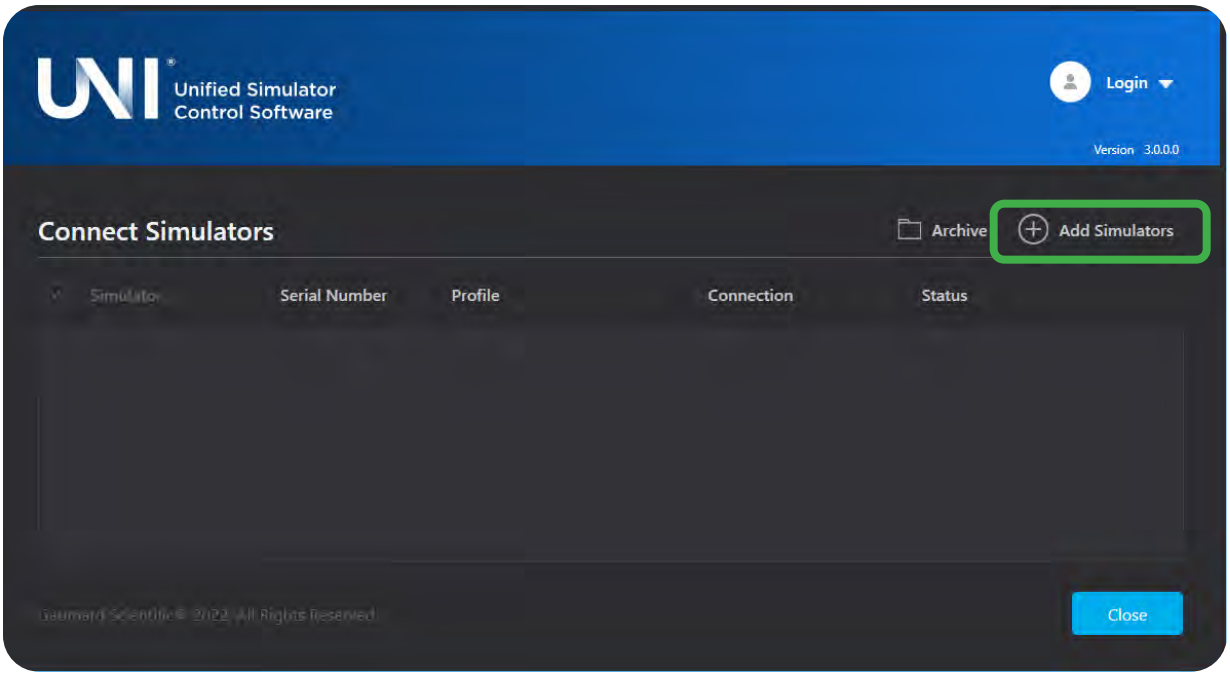
After the **On** button is held, it will begin flashing **blue** and search for a **Bluetooth** connection the simulator. This search will continue for 12 minutes. If no connection is found in that period, the flashing will cease.

3. The UNI software is preloaded onto the tablet which is used to initialize the simulator and control vital signs. Double-click the UNI icon on the tablet's home screen to start.

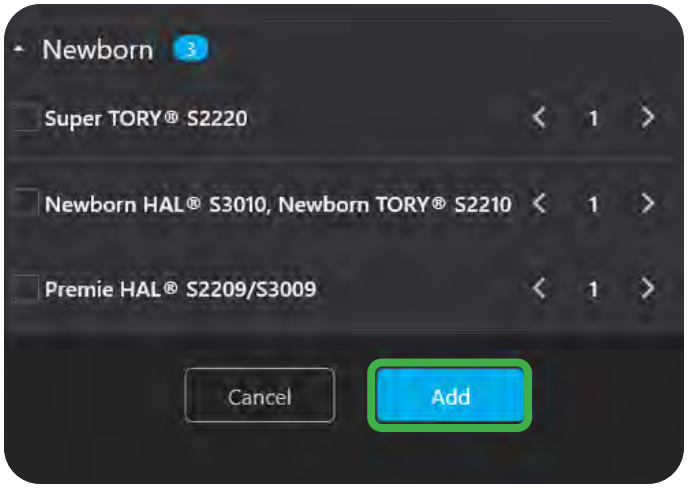
4. The UNI initialization window will appear. Allow UNI to load.



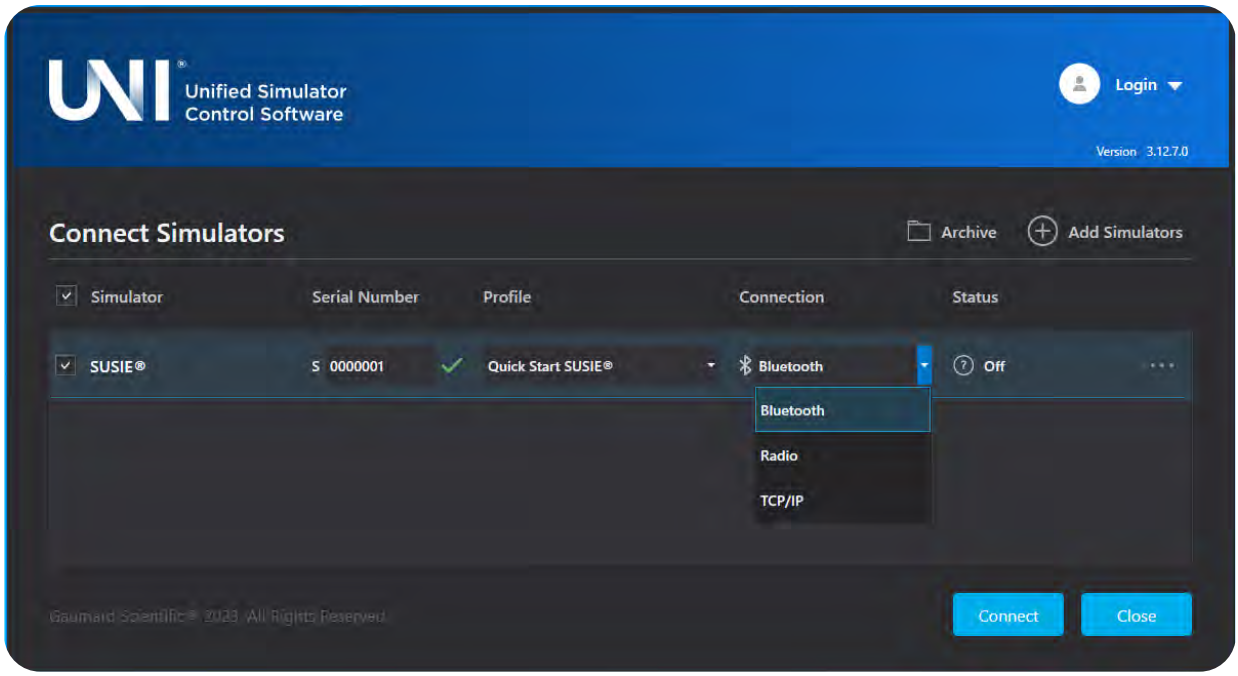
5. Click on the **+ Add Simulators**.



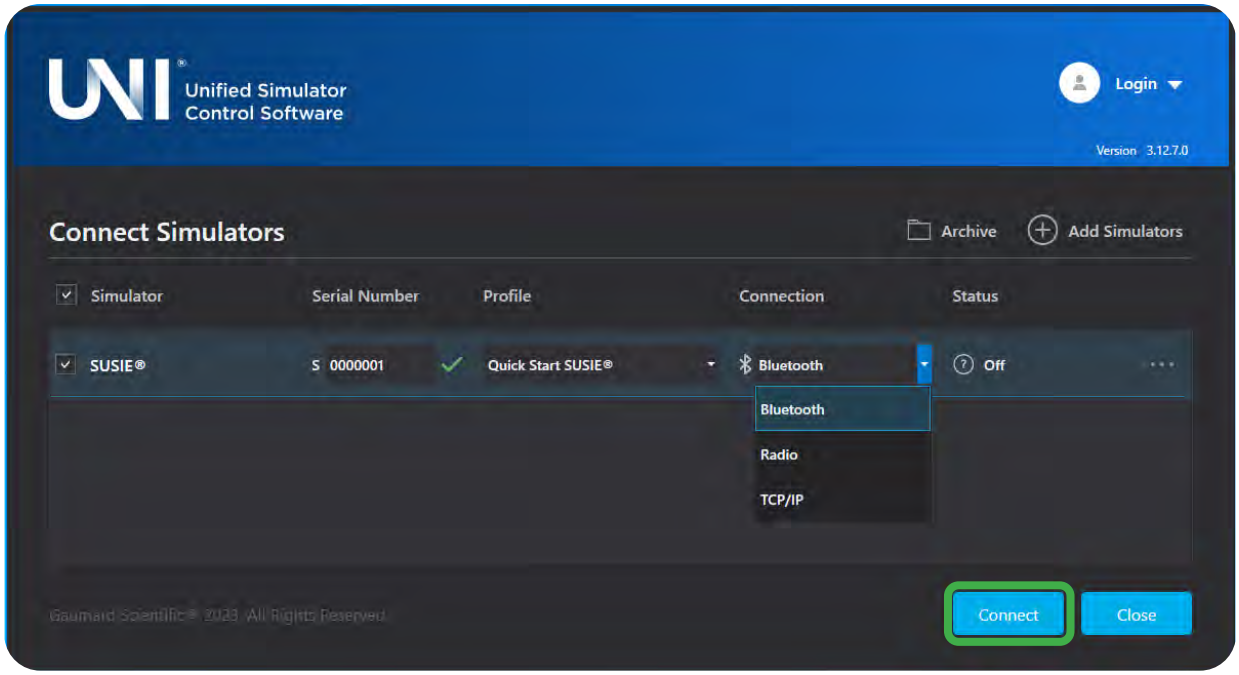
6. Select your simulator's profile from the list and click **Add**.



7. Enter the serial number of the simulator, select the desired profile, and for **Connection** select **Bluetooth**.



8. Click the checkbox for the simulator and click **Connect**.



Once the Bluetooth connection is successfully established and SUSIE is on, a bluetooth icon appears at the bottom left of the UNI interface.

2.6 TURNING ON SUSIE VIA RF COMMUNICATIONS

Although Bluetooth is SUSIE's primary method of communication, she can also be initialized via Radio Communications, both wirelessly or wired.

Wireless RF Communications

Wireless RF Communications requires the Gaumard provided RF Communication Module to be plugged into SUSIE's tablet/PC.

1. After reading the manufacturer's care and caution information, press the power button to turn on the Tablet PC.

2. Plug the RF Module into the Tablet PC.

3. Press the LED button located on SUSIE's right torso and wait for a flashing blue light.

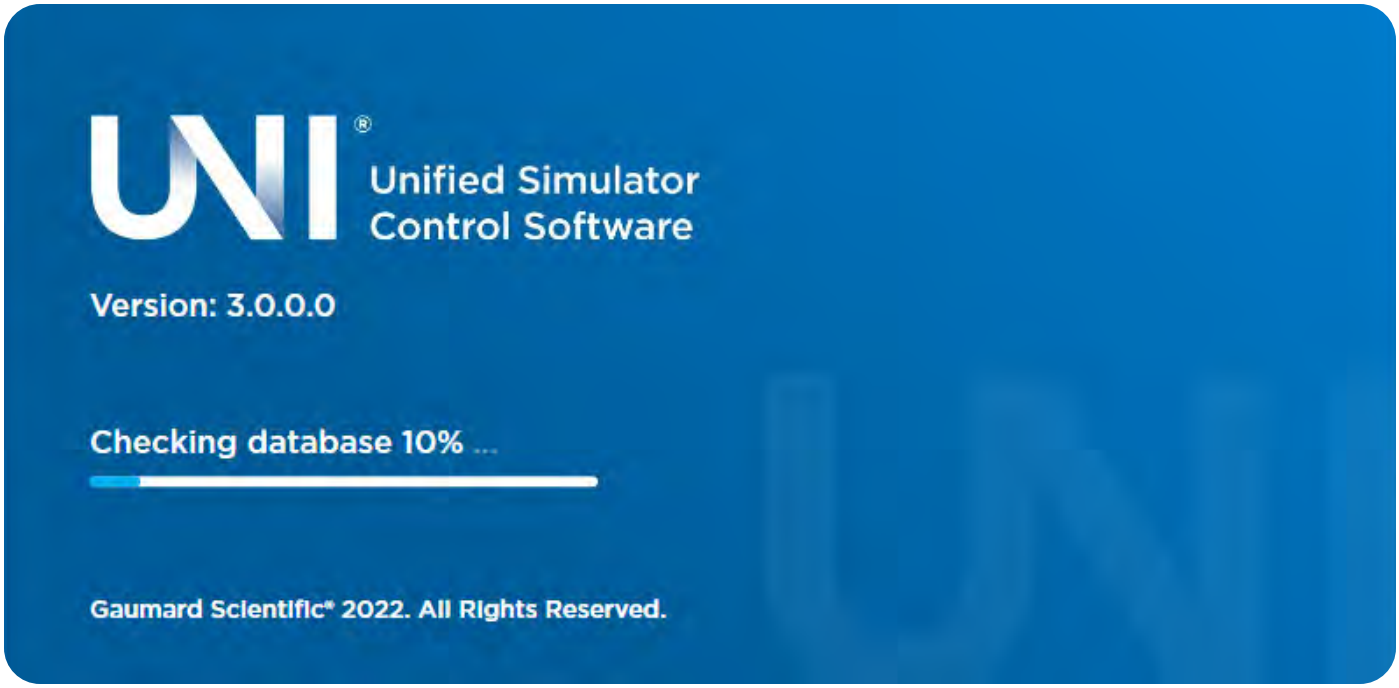
This flashing blue light signifies that the simulator is searching for a **Bluetooth** connection. Since a Radio connection type is desired, move on to Step 4.

4. While the LED button is flashing blue, place the finger back on the LED button and hold for **6 seconds** to change the flashing color to a **Magenta** light.

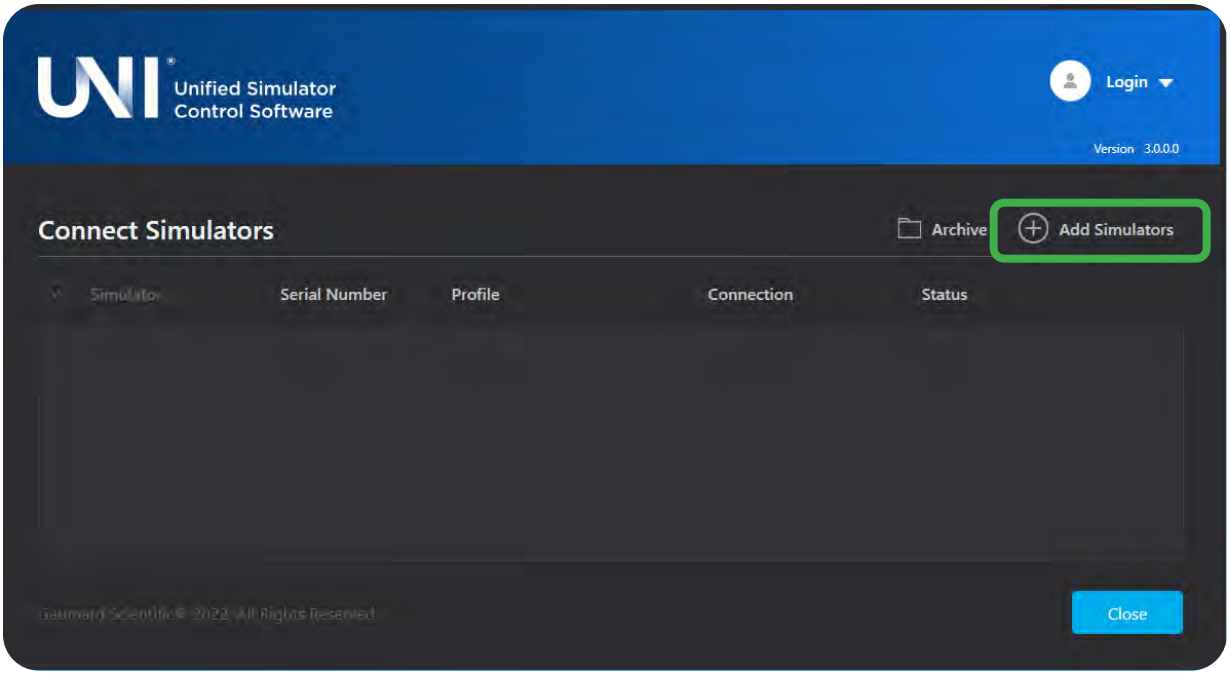
This flashing magenta light signifies that the simulator is now searching for a **Radio** connection. This search will continue for 12 minutes. If no connection is found in that period, the flashing will cease.

5. The UNI software is preloaded onto the tablet which is used to initialize the simulator and control vital signs. Double-click the UNI icon on the tablet's home screen to start.

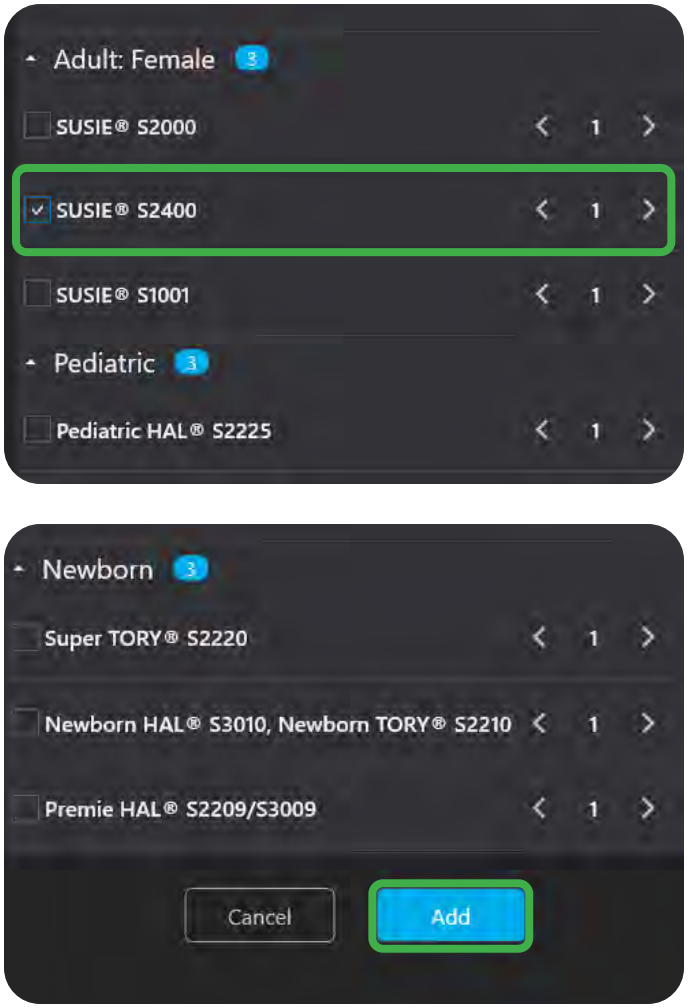
6. Press the LED button located on SUSIE's right torso and wait for connection.



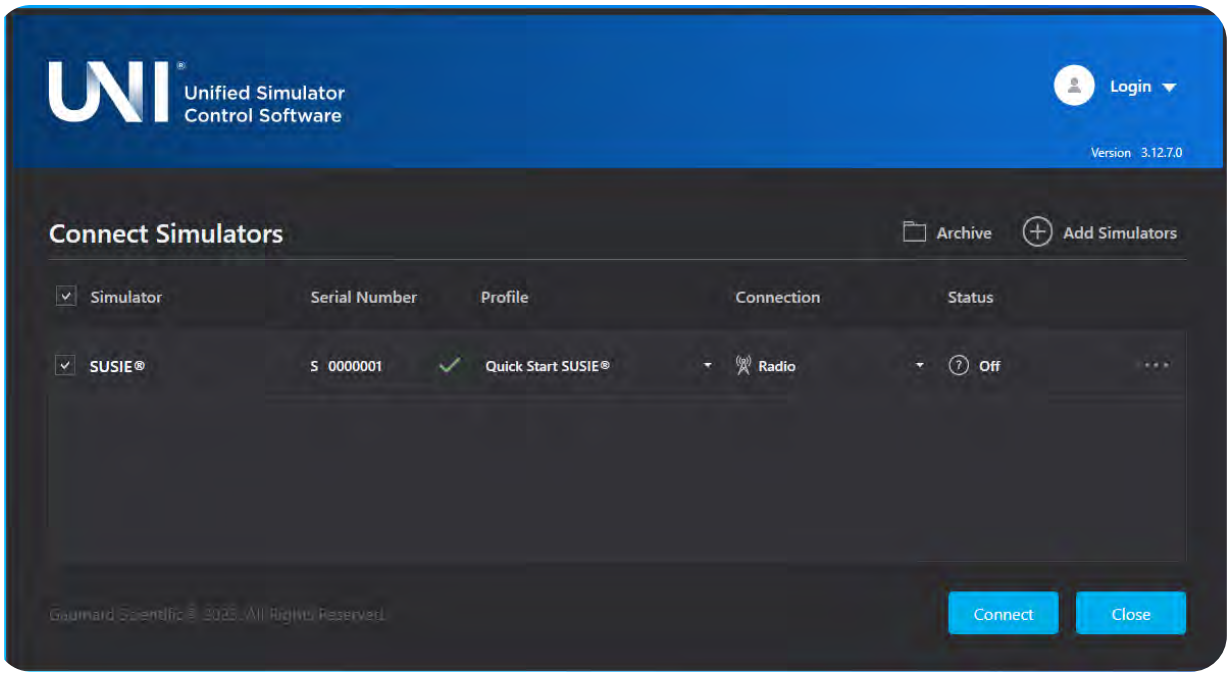
7. Click on the **+ Add Simulators**.



8. Select your simulator's profile from the list and click **Add**.



9. Enter the serial number of the simulator, select the desired profile, and for **Connection** select **Radio**.



Once the Radio connection is successfully established and SUSIE is on, a signal icon appears at the bottom left of the UNI interface.

Wired RF Communications

Wired RF Communications requires the Gaumard provided RF Communication Module to be plugged into SUSIE's tablet/PC and the blue RJ45 cable connecting SUSIE to the RF Communication Module.

1. After reading the manufacturer's care and caution information, press the power button to turn on the Tablet PC.

2. Plug the RF Module into the Tablet PC.

3. Press the LED button located on SUSIE's right torso and wait for a flashing blue light.

This flashing blue light signifies that the simulator is searching for a **Bluetooth** connection. Since a Radio connection type is desired, move on to Step 4.

4. While the LED button is flashing blue, place the finger back on the LED button and hold for **6 seconds** to change the flashing color to a **Magenta** light.

This flashing magenta light signifies that the simulator is now searching for a **Radio** connection. This search will continue for 12 minutes. If no connection is found in that period, the flashing will cease.

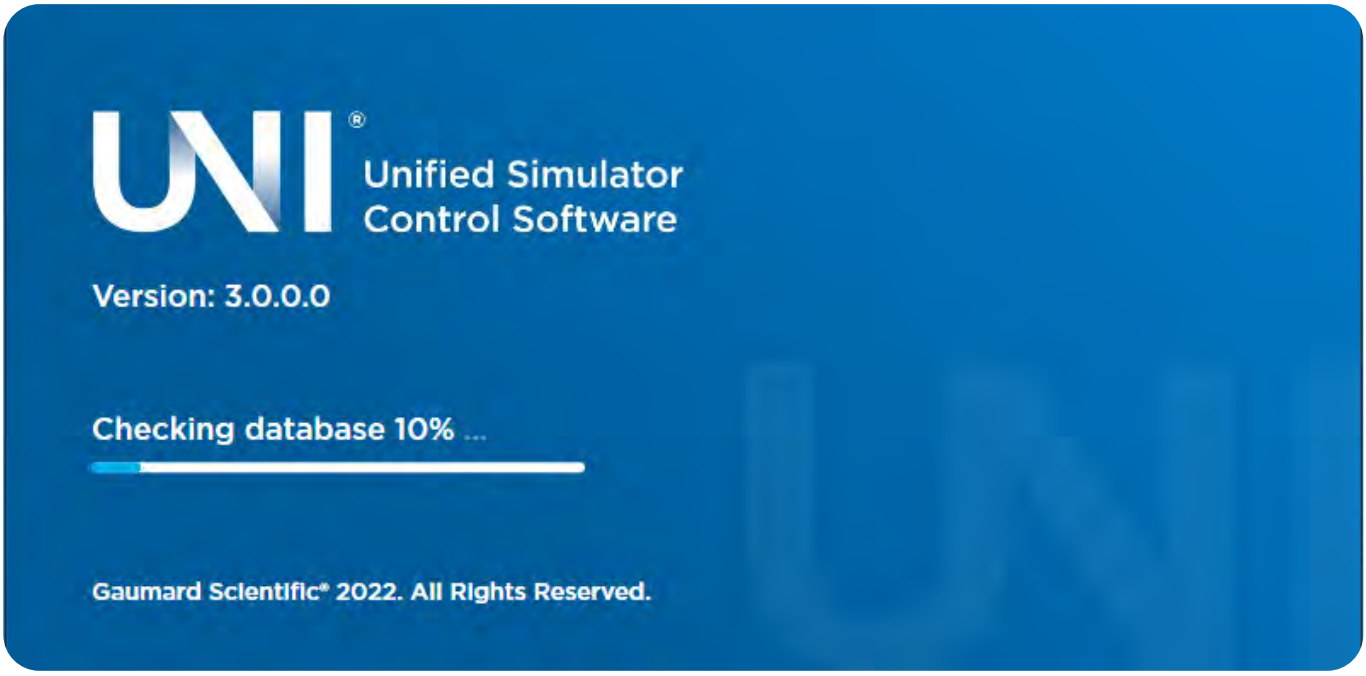
4. The UNI software is preloaded onto the tablet which is used to initialize the simulator and control vital signs. Double-click the UNI icon on the tablet's home screen to start.

5. Connect one end of the blue RJ45 cable to the RF Communication Module's port.

6. Connect the other end of the blue RJ45 cable to the Ethernet port located on SUSIE's right torso.

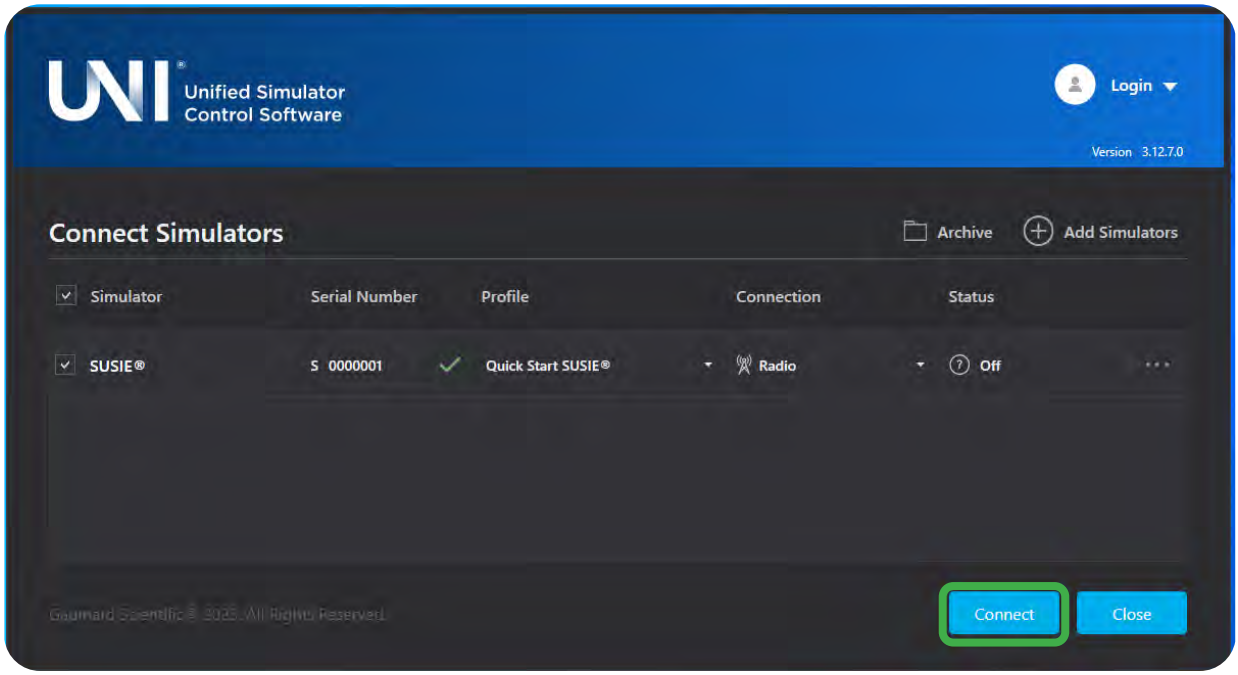
7. The UNI software is preloaded onto the tablet which is used to initialize the simulator and control vital signs. Double click the UNI icon on the tablet's home screen to start.

8. The UNI initialization window will appear. Allow UNI to load.



9. Enter the serial number of the simulator, select the desired profile, and for **Connection** select **Radio**.

10. Click the checkbox for the simulator and click **Connect**.



Once the Radio connection is successfully established and SUSIE is on, a signal icon appears at the bottom left of the UNI interface.

2.7 TURNING ON SUSIE VIA TCP/IP

SUSIE has the ability to set up her RF Communications Module and UNI connection remotely from a Bedside Virtual Monitor (subject to additional purchase).

To initialize your simulator via TCP/IP (Remotely from the Bedside Virtual Monitor):

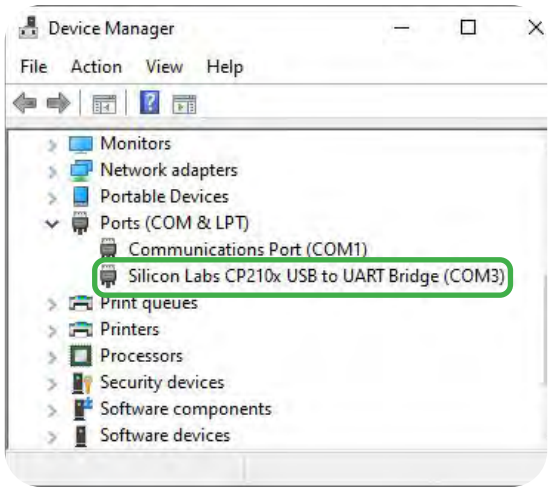
1. Gather the simulator, RF Communications Module, Bedside Virtual Monitor, and control tablet/PC.

It is recommended to follow your simulator's charging procedures and have a fully charged simulator before initializing it with the UNI software.

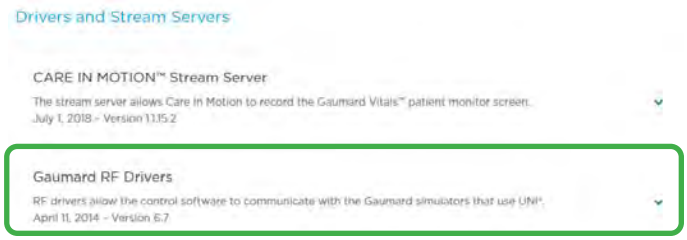
2. Plug the RF Communications Module into an available USB port on the Bedside Virtual Monitor.

3. Ensure that the **RF Module Drivers** are downloaded on the Bedside Virtual Monitor.

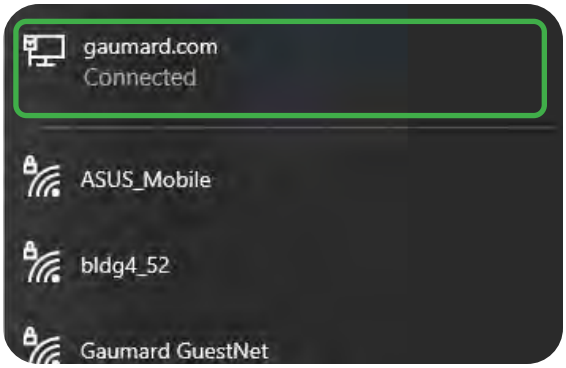
When you have the RF Communications Module plugged into your device, you may check the **Device Manager** to verify that the RF Communications Module is being recognized. It will only be recognized if you have the **RF Drivers** installed. The RF Communications Module will appear as **Silicon Labs** under the **Ports** section of the **Device Manager**.



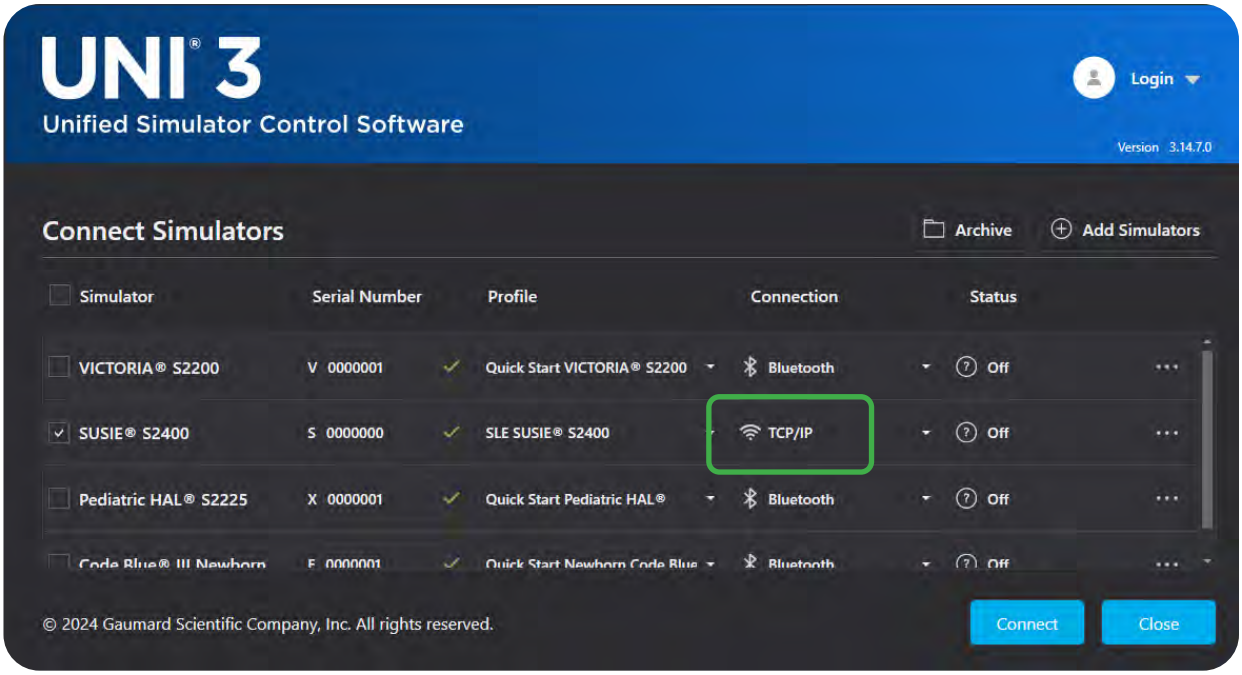
If the **RF Drivers** are not installed, go to: https://www.gaumard.com/gaumard-software to download and install them.



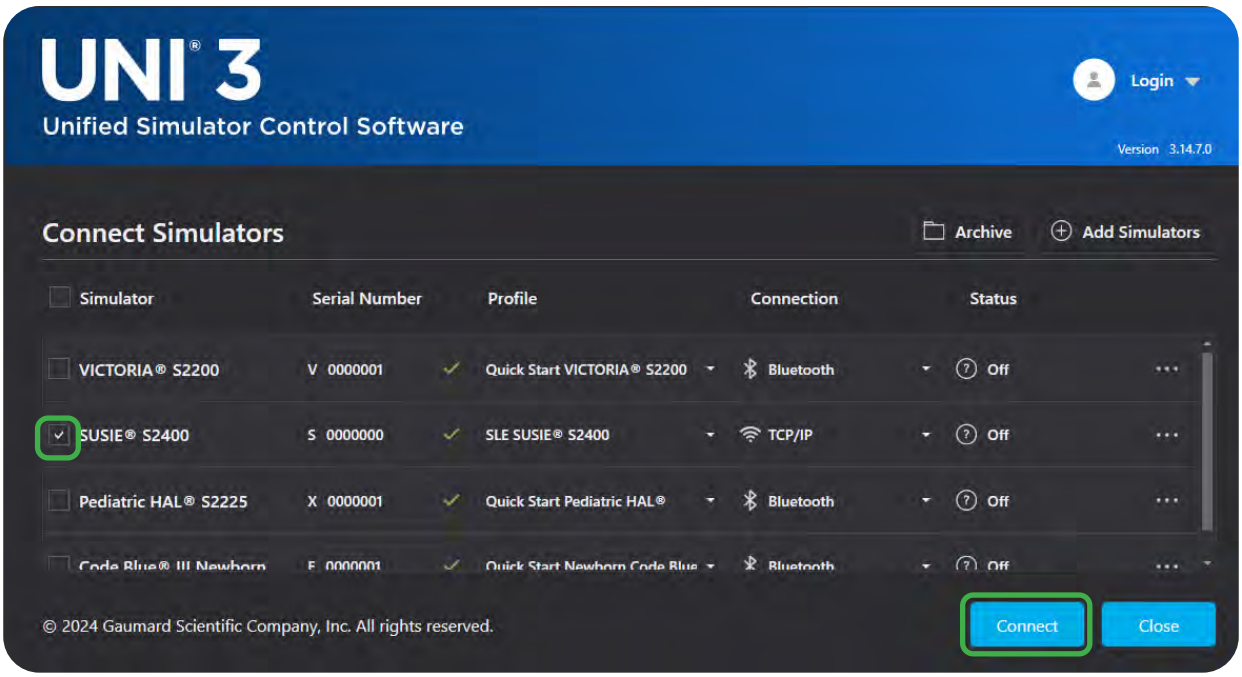
4. Verify that the Bedside Virtual Monitor and the UNI tablet/PC are connected to the same Wi-Fi network.



5. Launch the UNI software, select the desired simulator, and set the **Connection** to **TCP/IP**.



6. Click the checkbox for the simulator and click **Connect**.



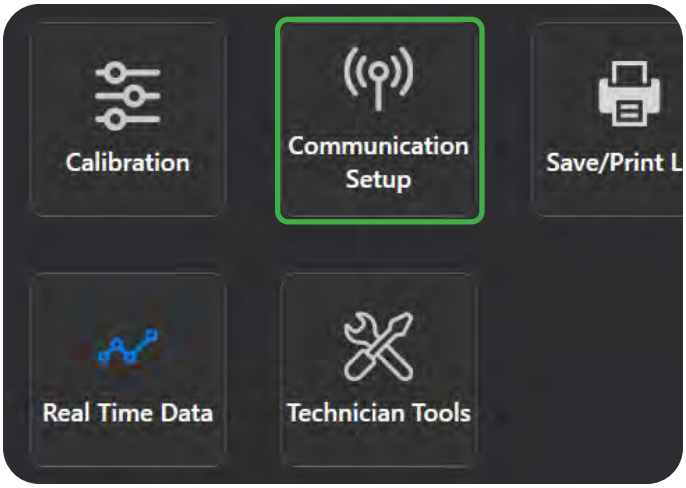
Connecting UNI 3 and Gaumard Vitals

After selecting TCP/IP as the Connection and UNI 3 launches, in order to complete the TCP/IP connection UNI 3 and Gaumard Vitals need to be connected.

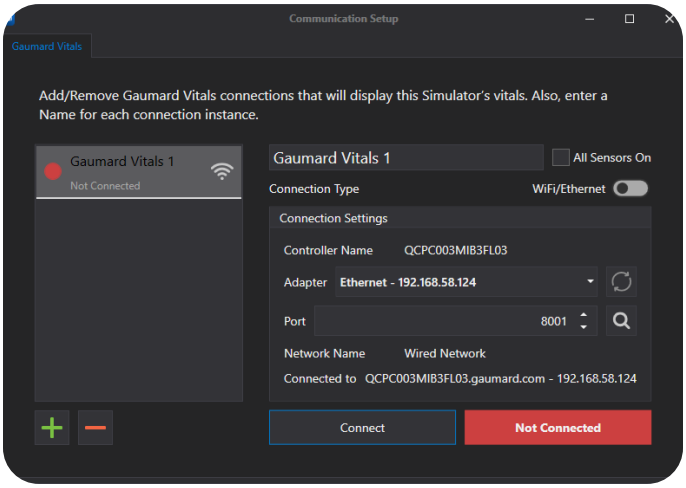
To connect UNI 3 and Gaumard Vitals:

1. In UNI 3, click **Settings** in the upper right corner.

2. In the **Current Simulator** section, click **Communication Setup**.



3. On the **Communication Setup** window, take note of the **Adapter** and **Port** numbers.



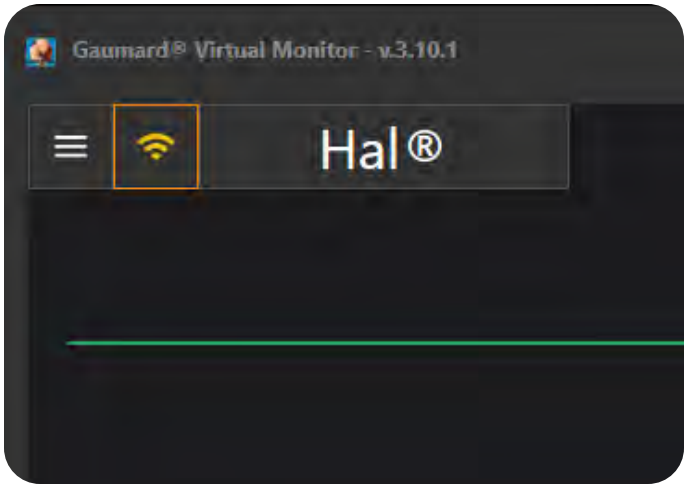
The selected Adapter needs to be the Ethernet option. In this example, the resulting Ethernet IP address is 192.168.58.124. This IP address number is what will be plugged into the Communication Setup on Gaumard Vitals so the software can communicate with each other.

The Port number would only need to be manually changed if attempting to connect multiple Bedside Virtual Monitors to this instance of UNI 3. In this example, the only Port number is 8001. This number will also be plugged into the Communication Setup on Gaumard Vitals to complete the software setup.

4. Leave the UNI tablet/PC and move over to the Bedside Virtual Monitor.

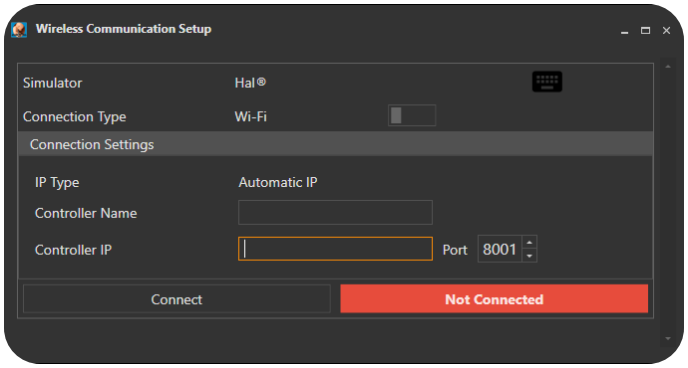
5. Double-click on the **Gaumard Vitals** icon that is installed on the home screen of the Bedside Virtual Monitor.

6. Click on the **Communication Signal** in the upper left of Gaumard Vitals.

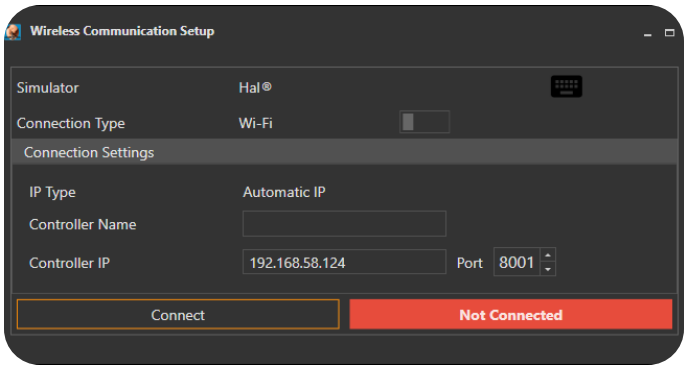


7.Enter into the **Controller IP**, the IP from the **Adapter** field on UNI 3 (step 3).

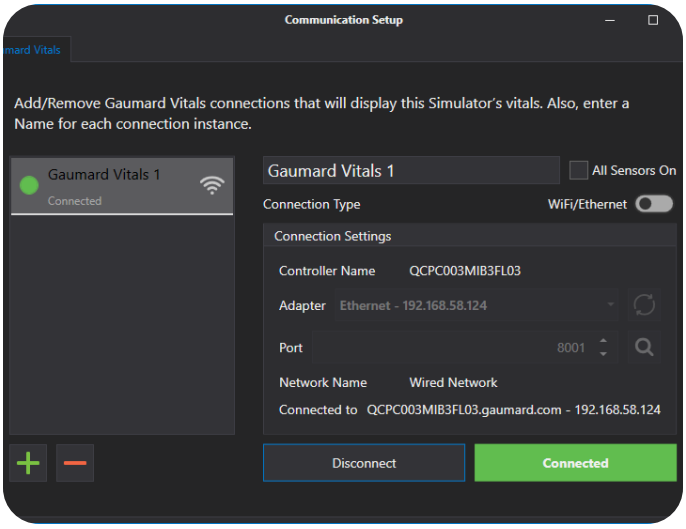
8. Check that the **Port** numbers are the same on UNI and Gaumard Vitals

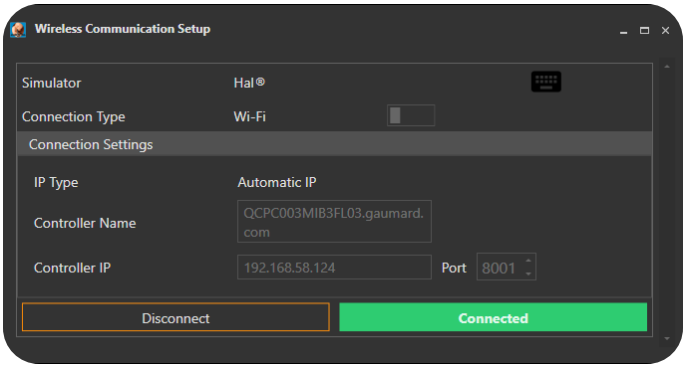


9. Click **Connect** on the **Communication Setup** window on UNI 3 and Gaumard Vitals.



After clicking **Connect**, both the **Communication Setup** windows on UNI 3 and Gaumard Vitals will attempt to complete the connection. If successful, the indicator in the bottom left will turn green and show that status **Connected**.

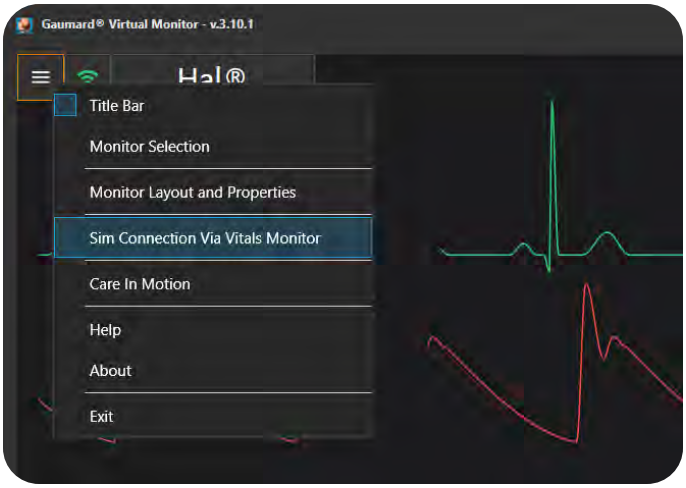




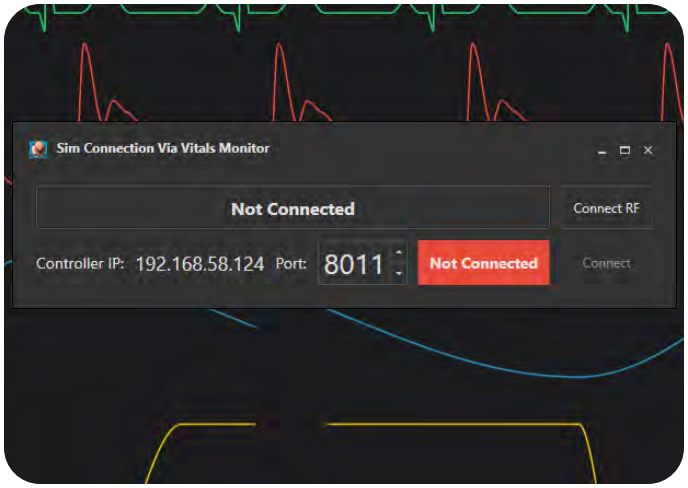
Completing the TCP/IP Connection

After establishing UNI 3 and Gaumard Vitals connection, to finish up the TCP/IP communication:

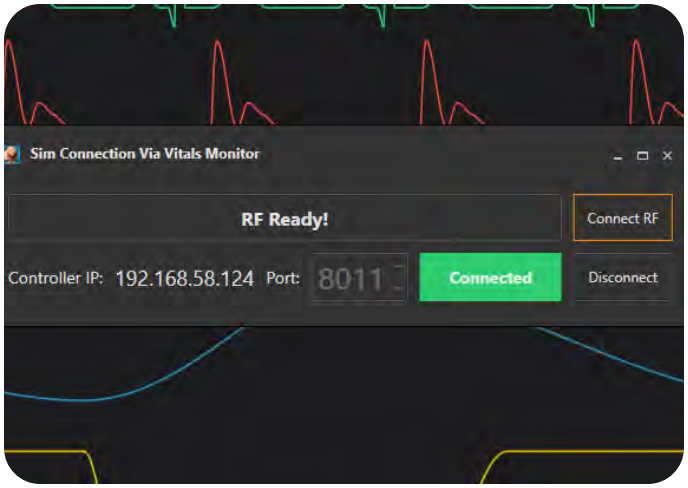
1. Click on the **Menu** in the upper left corner of Gaumard Vitals and select **Sim Connection Via Vitals Monitor**.



2. Click **Connect RF**. The Sim Connection Via Vitals Monitor will search and connect to the available RF.



3. Once the RF is ready, click **Connect** on the bottom right of the **Sim Connection Via Vitals Monitor** window.



The UNI 3 and Gaumard Vitals are now connected via TCP/IP and the simulator is ON.

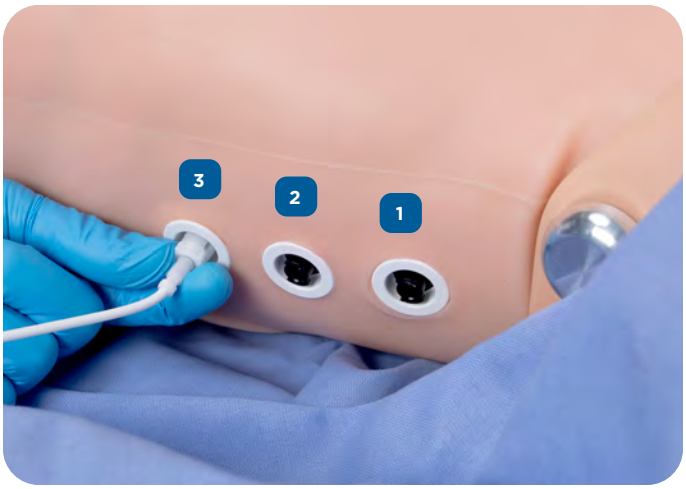
2.8 SUSIE'S PORTS

The port on either side that is marked as **3** in the pictures below, will come shipped with a white cap in the port that can be removed upon unboxing.

There are 3 ports on SUSIE's left lower torso:

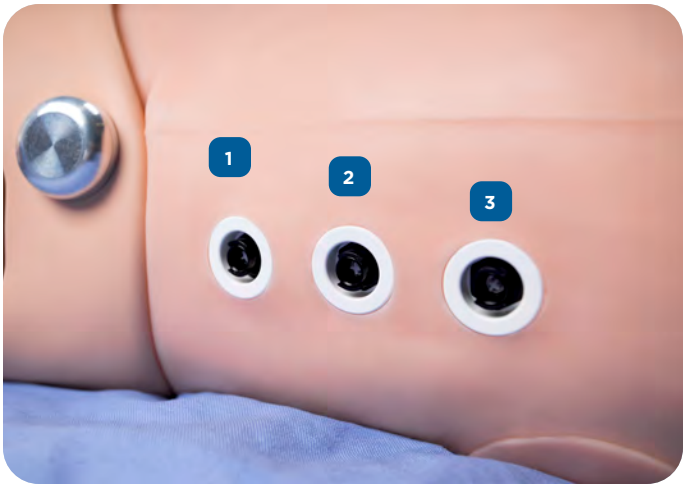
1. Bladder Filling/Drainage Port
2. Central Line Filling/Drainage Port
3. CO_2 (Option) Connection Port

Note the difference in the CO_2 Connection Port. It is both optional, and white in color.



There are 3 ports on SUSIE's right lower torso:

1. Stomach Drainage Port
2. Gastrostomy Drainage Port
3. Colostomy Drainage Port



3. Working with SUSIE

3.1 NEUROLOGICAL

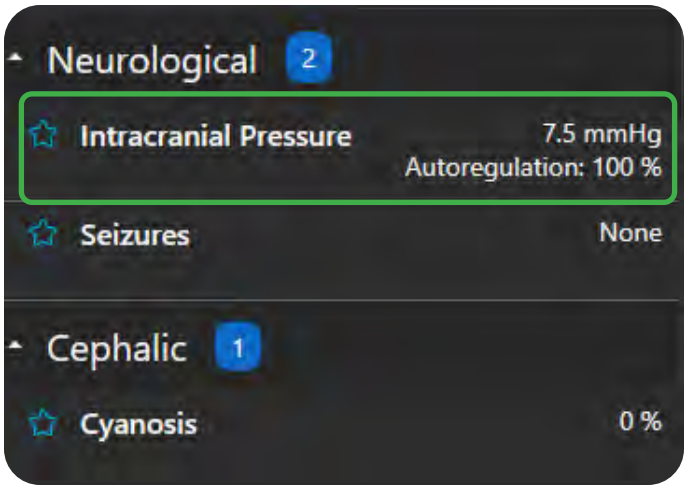
3.1.1. Intracranial pressure

Intracranial pressure (ICP) is the pressure within the cranium. The cranium is a rigid structure composed of three main components: brain, cerebrospinal fluid (CSF), and blood. Any change to the volume of any one of these components will change the pressure within the cranium (i.e., ICP).

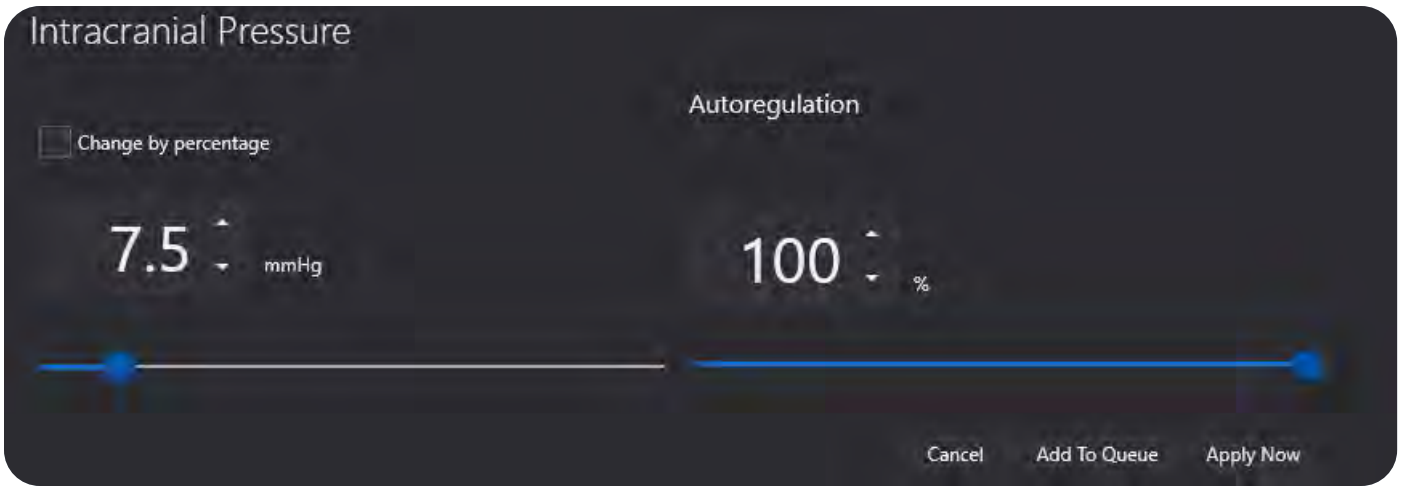
SUSIE has an Intracranial Pressure vital available in UNI 3 to simulate changes in ICP. Although this vital is a virtual control that will not affect SUSIE physically, the change in pressure can be seen on the Virtual Monitor tab in UNI 3 and/or displayed on an optional Bedside virtual monitor, via Gaumard Vitals, as a numeric value and a waveform. The Intracranial Pressure vital consists of an adjustable ICP value in units of mmHg and an Autoregulation percentage to increase or decrease the intensity of the ICP waveform's amplitude that is displayed.

To adjust SUSIE's Intracranial Pressure:

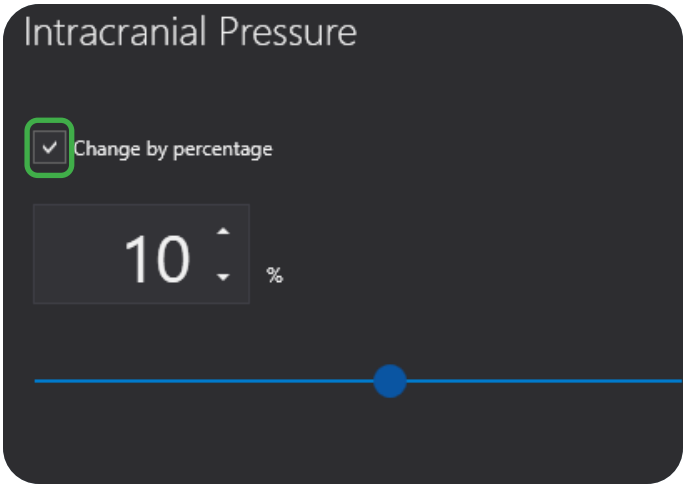
1. In UNI 3, under the **Neurological** section click on the **Intracranial Pressure** vital.



2. On the **Intracranial Pressure** window that appears, use the slider bar or enter a new value to change the values of pressure and autoregulation.



3. Check **Change by Percentage** to affect the ICP by percent rather than mmHg.



4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

The value in units of mmHg will display the numeric value of ICP and Autoregulation percent will affect the intensity of the ICP waveform.

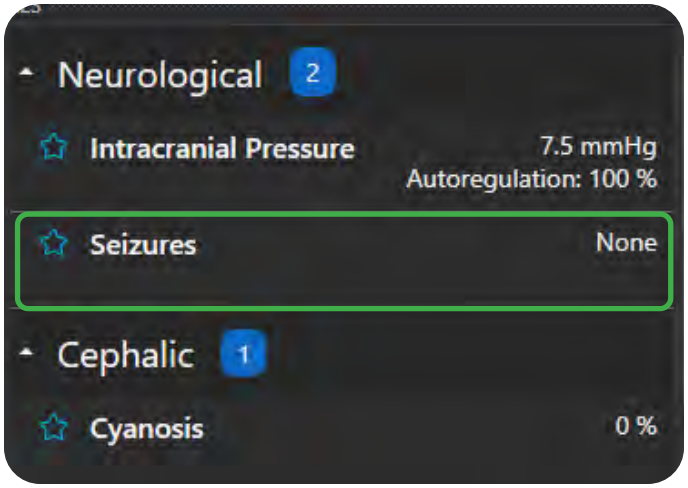
3.1.2. Seizure

A seizure is a burst of uncontrolled electrical activity between brain cells that causes temporary abnormalities in muscle tone or movements, behaviors, sensations, or states of awareness.

SUSIE has the ability to seize in various levels of severity (mild or severe). To better observe SUSIE's seizures as they are activated, it is recommended to position a backboard under SUSIE while she lies in a patient bed or have SUSIE lie on a hard surface.

To activate seizures:

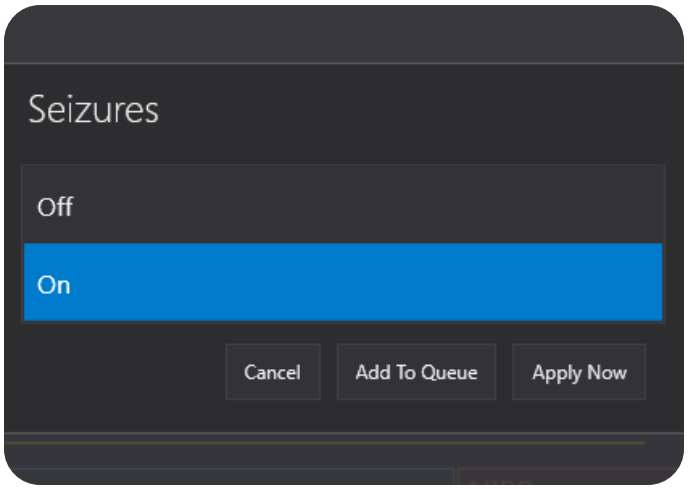
1. In UNI 3, under the **Neurological** section click on **Seizures**.



2. Select either **Off** or **On**.

Remember to place SUSIE on a sturdy surface (like placing a backboard under her while she lies in bed) to make the appearance of her seizure more apparent.

3. Click **Apply Now** to immediately apply the type of seizure selection to SUSIE or click **Add To Queue** to load at a later time.



3.1.3. Speech

Voice streaming is optimal when connection to SUSIE is made via Bluetooth.

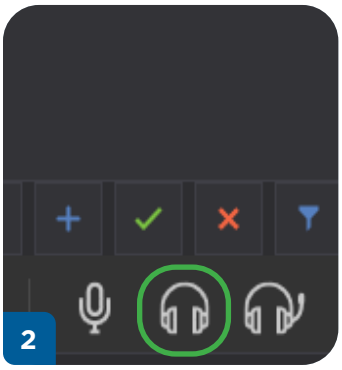
Be the voice of SUSIE and listen to participants respond in real-time.

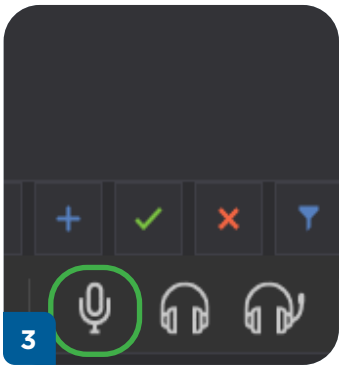
1. Connect the provided headset to the tablet.

The provided headset allows the facilitator to speak through the simulator and listen to the simulation's participants' reply. It is best practice to connect the streaming audio headset before starting the UNI software.

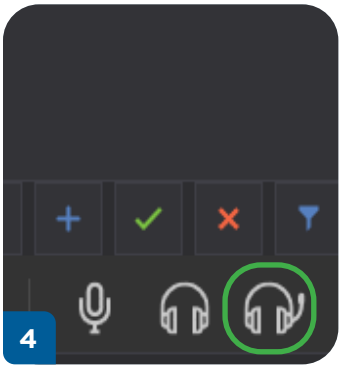
2. Select the **headphones icon** to listen, on the bottom-right hand corner of UNI.

3. Switch to the **microphone icon** to speak as SUSIE.





4. Click the **headset icon** to speak and listen simultaneously in real-time.



3.2 CEPHALIC

3.2.1. Cyanosis

Cyanosis may be used to add realism to the simulation by adding another sign for participants to assess.

Cyanosis is the result of a patient's organs/muscles not getting the amount of blood needed in order to function properly. It is the blue-green color that may develop at various degrees in the skin when a person is lacking significant amounts of oxygen in the blood. The less oxygen that is being circulated, the darker the blue that may be noticed.

SUSIE can present circumoral cyanosis on a sliding scale of intensity.

To apply cyanosis and intensity to SUSIE:

1. In UNI 3, under the **Cephalic** section click on **Cyanosis**.

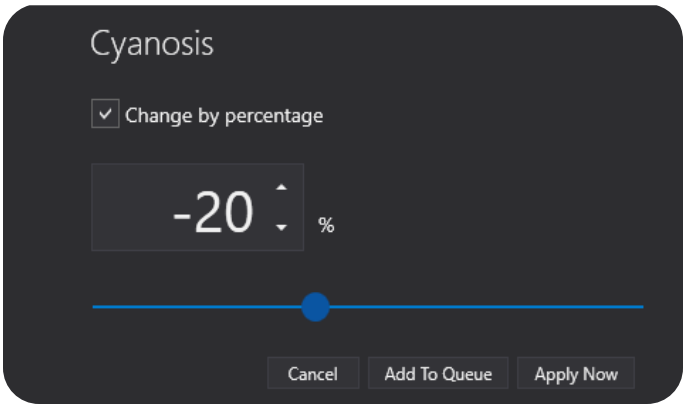
2. Use the **Intensity** slider bar to increase or decrease the displayed color appearance on SUSIE.

The **Intensity** slider bar operates on a sliding scale from 0-100%. The higher the percentage, the more intense the cyanosis will appear and vice versa.

3. Check **Change by Percentage** to change **Cyanosis** by percentage rather than beats per minute.

The **current value** of cyanosis will change by the set +/- percentage change to the new value.

4. Click **Apply Now** to immediately apply the skin appearance settings to SUSIE or click **Add To Queue** to load at a later time.



3.3 OCULAR

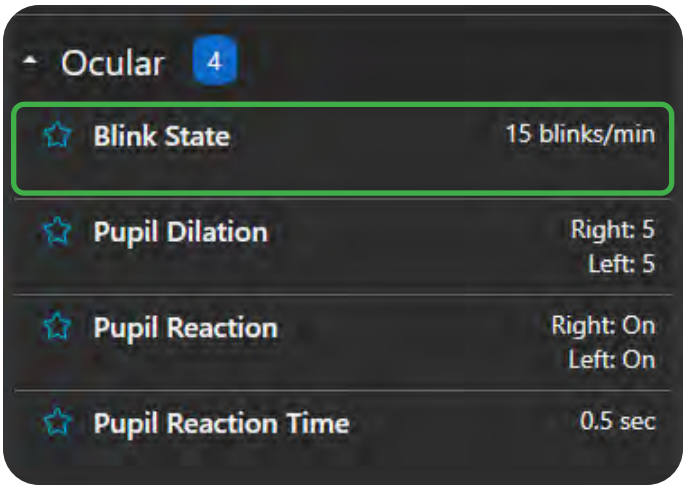
SUSIE can incorporate a plethora of ocular abilities such as different blinking rates, pupil dilation, and reactions,

3.3.1. Blink State

SUSIE's **Blink State** controls the blinking rate. SUSIE's default blink state is set to 15 blinks per minute.

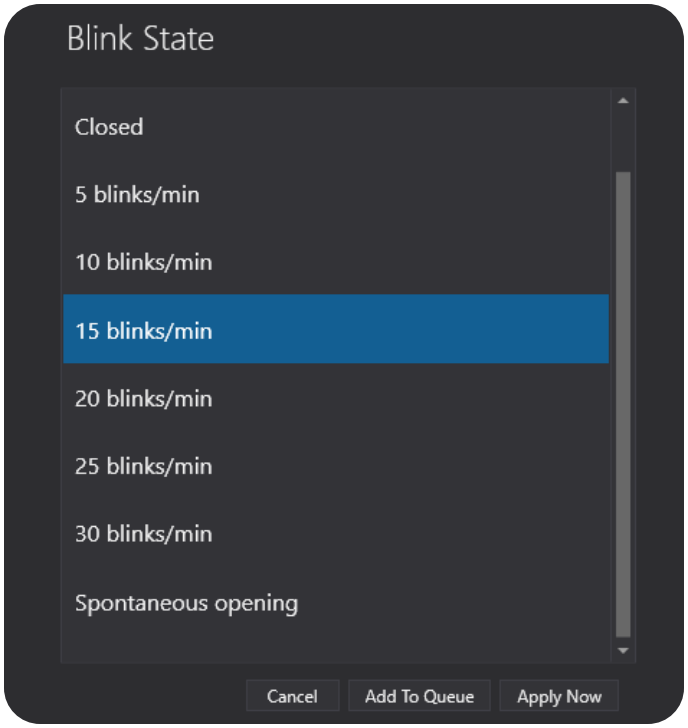
To change SUSIE's blink state:

1. In UNI 3, under the **Ocular** section click on the **Blink State** vital.



2. Select from the available list of options:

- **Open**
- **Closed**
- Rates varying from 5 - 30 blinks/min in increments of 5
- **Spontaneous Opening**



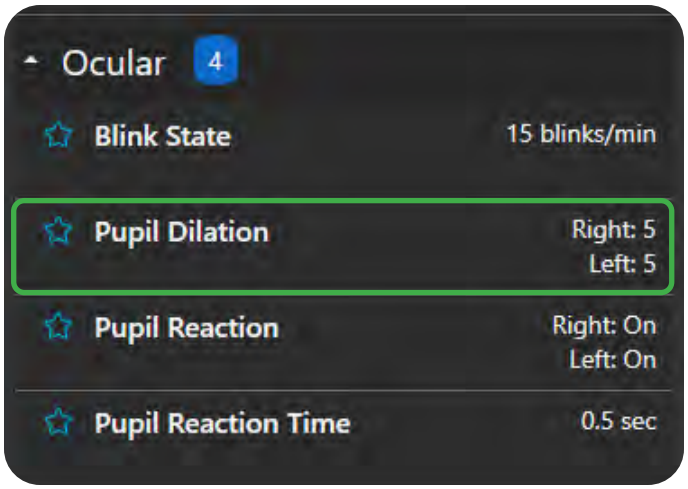
3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

3.3.2. Pupil Dilatation

The **Pupil Dilation** vital controls SUSIE's pupil size making it easy to manually constrict or blow up for assessments. SUSIE's default pupil dilatation is set to a level of 5 on this control's sliding scale of 0 - 9.

To affect SUSIE's pupil dilatation size:

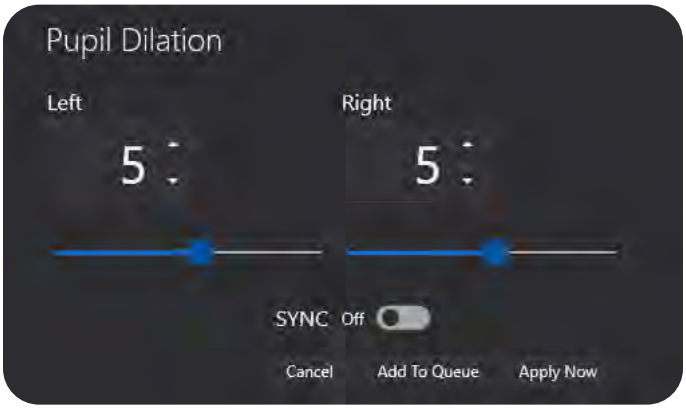
1. In UNI 3, under the **Ocular** section click **Pupil Dilation**.



2. Use the slider bar or enter the numeric level from 0 - 9 for the pupil size for the **Left** and **Right** eyes.

A level of 5 is considered normal for SUSIE. Adjust the dilation level to a lower value to constrict SUSIE's pupils or to a higher number to dilate her pupils.

3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

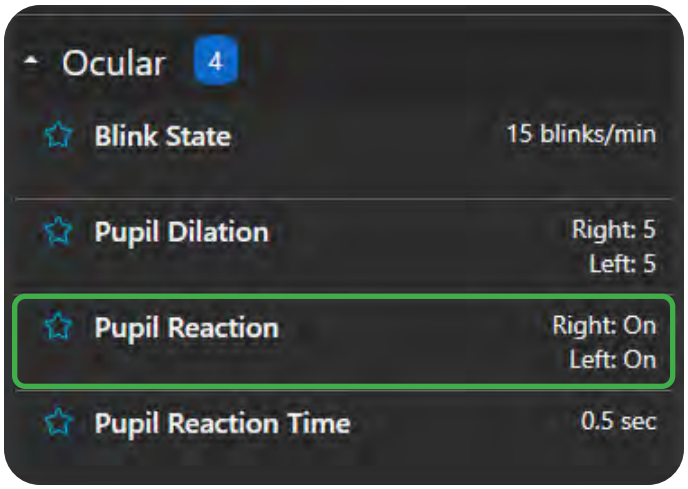


3.3.3. Pupil Reaction

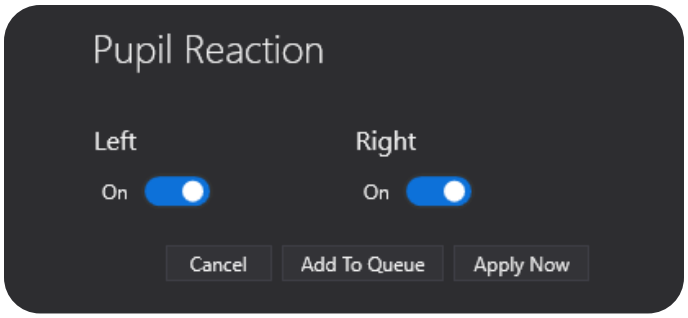
SUSIE's pupils react to light like a real patient. The reaction of SUSIE's pupils can be controlled independently to assist in simulating medical conditions.

To control SUSIE's pupil reactions:

1. In UNI 3, under the **Ocular** section click **Pupil Reaction**.



2. Flip the switch for **Left** and/or **Right** to turn SUSIE's reaction on or off.



On will make that eye of SUSIE's be reactive to light and **Off** will prevent that eye from reacting even when light is shown in her eye.

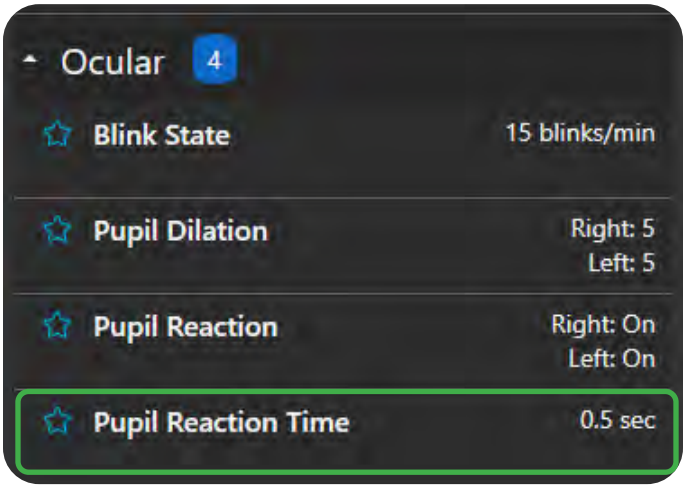
3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

3.3.4. Pupil Reaction Time

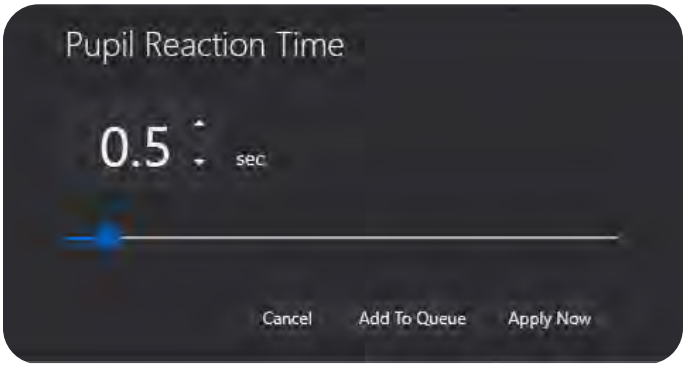
In conjunction with **Pupil Reaction**, **Pupil Reaction Time** controls how quickly SUSIE's pupil will react to a light source (when pupil reaction is turned on for that eye).

To adjust SUSIE's pupil reaction time:

1. In UNI, under the **Ocular** section click **Pupil Reaction Time**.



2. Enter a numeric value or use the slider bar to adjust the **Pupil Reaction Time** on a scale from 0-10 seconds.



SUSIE's normal Pupil Reaction Time is set to a time of 0.5 seconds by default. As the time in seconds increases, so will the time it takes for SUSIE's pupils to react to light.

3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

3.4 AIRWAY

SUSIE has three types of airway inserts (ventilation insert, tracheostomy insert, and an optional surgical trachea insert subject to additional cost), each serving a unique purpose. In addition to these inserts, SUSIE also has a few airway complications and throat sounds that can be combined with intubation techniques and airway assessments.

Procedure	Recommended Device Size
Intubation (Blade size)	Miller 4 or MAC 3.5
LMA	Size 4
Nasal Intubation	ETT 6.0-6.5
Oral Intubation	ETT 6.5 or 7.0
Tracheostomy/ Cricothyrotomy Surgical Insert	Size 5-7

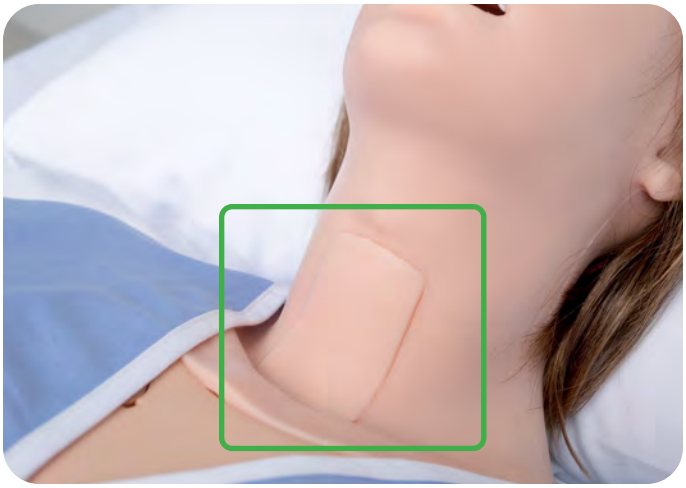
3.4.1. Ventilation Insert

The **Ventilation Insert** is pre-installed on SUSIE and is designed to maintain an airtight seal during intubation and bag valve mask ventilation. For this reason, it is NOT recommended to cut the **Ventilation Insert**. Instead, use the optional surgical trachea insert as seen in section 3.4.3. for making incisions.

The **Ventilation Insert** includes anatomical landmarks that can be palpated. These landmarks assists with adding another level of realism to your simulation.

To remove the **Ventilation Insert**:

1. With two fingers, pull until the **Ventilation Insert** pops out.



To re-install the **Ventilation Insert**:

1. Spray the sides of the **Ventilation Insert** with 70% isopropyl alcohol.

2. Push the **Ventilation Insert** into the opening at SUSIE's throat.

3.4.2. Tracheostomy Insert

The **Tracheostomy Insert** allows users to perform tracheostomy care and suctioning procedures with real medical equipment.

The **Tracheostomy Insert** consists of a pre-formed, realistic tracheostomy stoma designed for nursing care.

To setup and install the **Tracheostomy Insert**:

1. Remove any insert that is installed in SUSIE's airway.

2. Spray the sides of the **Ventilation Insert** with 70% isopropyl alcohol.

3. Push the **Tracheostomy Insert** into the opening at SUSIE's throat.

3.4.3. Surgical Trachea Insert (Optional)

The **Surgical Trachea Kit** consists of the insert, the simulated trachea, the simulated cricothyroid membrane, and the trachea skin cover. Assembling them creates the **Surgical Trachea Insert**.

To setup and install the **Surgical Trachea Insert**:

1. Remove any insert that is installed in SUSIE's airway.

2. Obtain the following to begin **Surgical Trachea Insert** assembly:

   a. Tracheostomy Insert

   b. Trachea

   c. Simulated Cricothyroid Membrane

   d. Trachea Skin Cover

3. Insert the **Trachea** into the white **Tracheostomy Insert**.

4. Peel the paper off the **Simulated Cricothyroid Membrane** and align it over the edge of the **Tracheostomy Insert**.

5. Place the **Trachea Skin Cover** over the **Simulated Cricothyroid Membrane** by fitting it around the edges.

The **Surgical Trachea Insert** is now aseembled and ready for use!

6. With the complete **Surgical Trachea Insert**, insert the piece into SUSIE's airway.

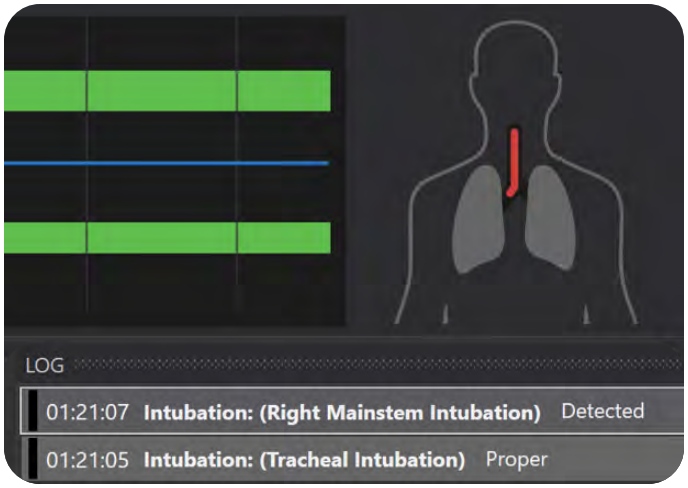
3.4.4. Nasal & Oral Intubation

SUSIE supports the use of real adjuncts for nasal and oral intubation.

When intubating, spray the adjunct with **MINERAL OIL** lubricant prior to inserting it through SUSIE's airway.

SUSIE has an intubation sensor that detects and logs the endotracheal placement position. When the intubation is too deep, right mainstem intubation is triggered to automatically present unilateral chest rise until corrected.

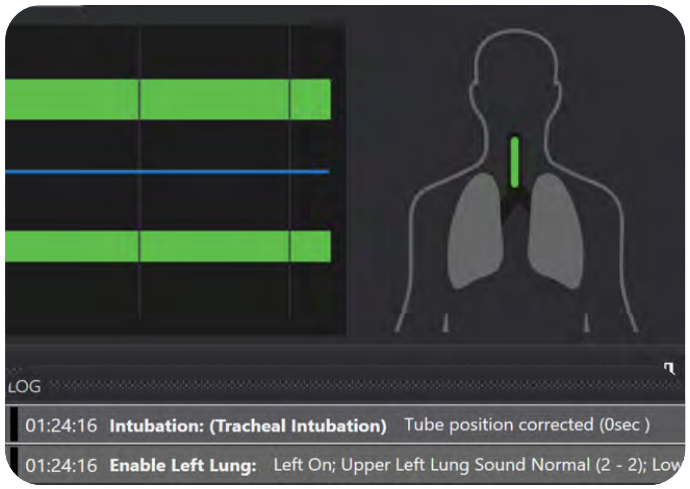
In UNI 3, click the **CPR** tab to view the visual graphic of SUSIE's airway and intubation sensor that detects endotracheal tube placement.



Correcting the endotracheal tube position will re-enable SUSIE's left lung chest rise.

All activity in regards to intubating SUSIE will be recorded in the UNI log as well to review during debriefing.

In cases of esophageal intubation and ventilation, SUSIE will display gastric distension in her lower belly.



3.4.5. Airway complications

To add another layer of realism to difficult intubation scenarios, activate one or all of SUSIE's airway complications. These include tongue edema, laryngospasm, and pharyngeal swelling.

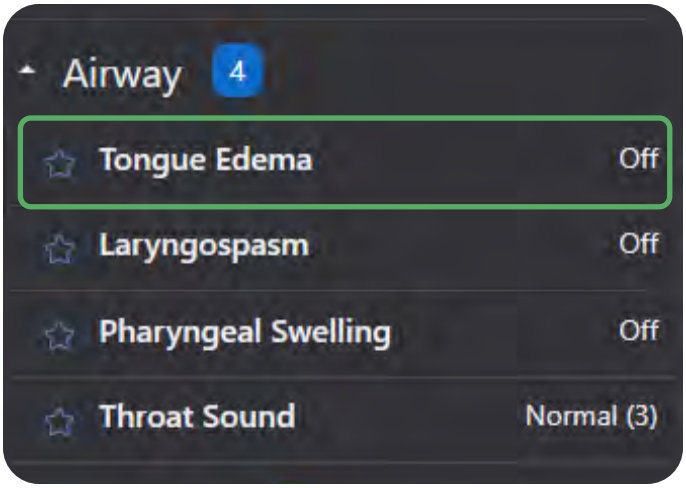
Tongue Edema

Tongue edema is the swelling of the tongue which can make intubation difficult since the tongue doesn't depress as easily.

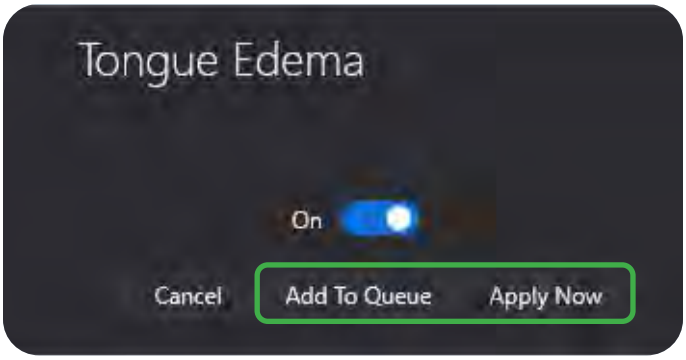
SUSIE's tongue edema operates pneumatically so when it is turned on, her tongue will inflate with air. When it is turned off, her tongue will deflate and go back to normal.

To activate tongue edema on SUSIE:

1. In UNI 3, under the **Airway** section click **Tongue Edema**.



2. Select **ON** or **OFF**.



3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

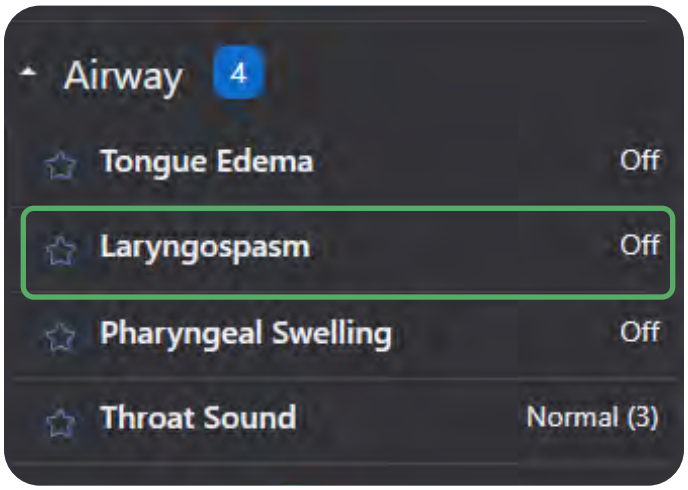
Laryngospasm

Laryngospasm are spasms of the vocal chords that make it difficult to speak or breathe.

SUSIE's laryngospasm operates mechanically to create the spasms.

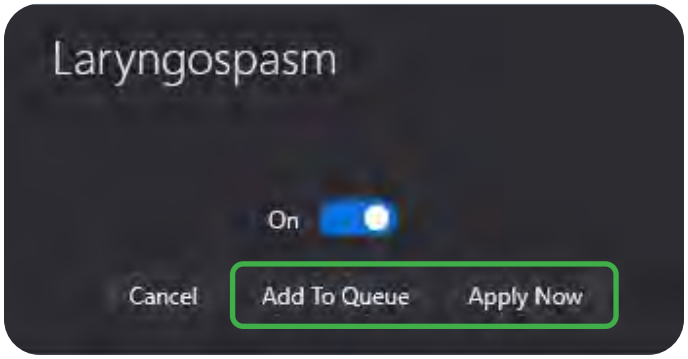
To activate SUSIE's laryngospasms:

1. In UNI 3, under the **Airway** section click **Laryngospasm**.



2. Select **ON** or **OFF**.

3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time



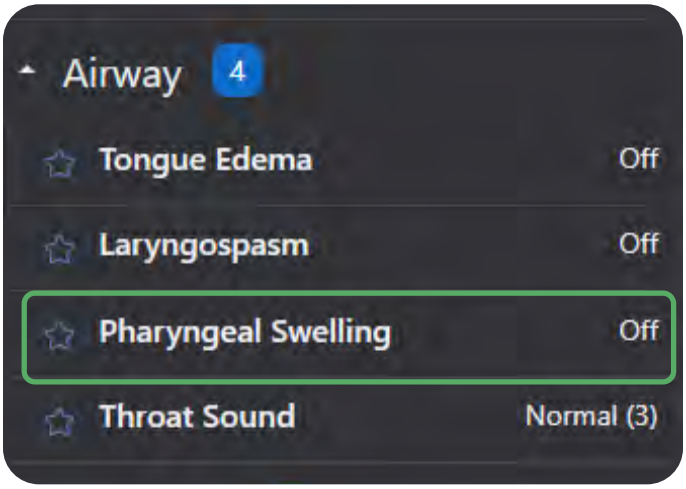
Pharyngeal Swelling

Pharyngeal swelling, or pharyngitis, is the swelling that occurs at the back of the throat between the tonsils and the larynx.

SUSIE's pharyngeal swelling operates pneumatically so when it is turned on, her pharynx will inflate with air. When it is turned off, it will deflate and go back to normal.

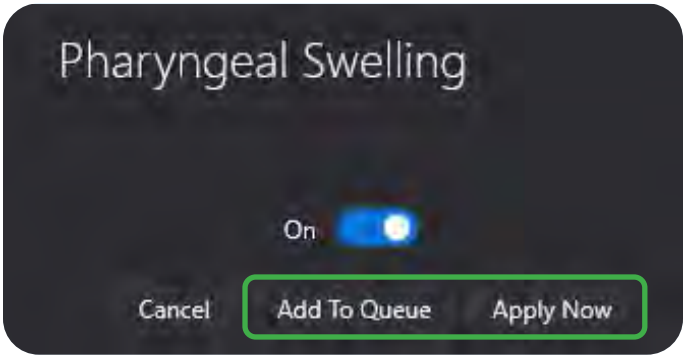
To activate pharyngeal swelling:

1. In UNI 3, under the **Airway** section click **Pharyngeal Swelling**.



2. Select **ON** or **OFF**.

3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

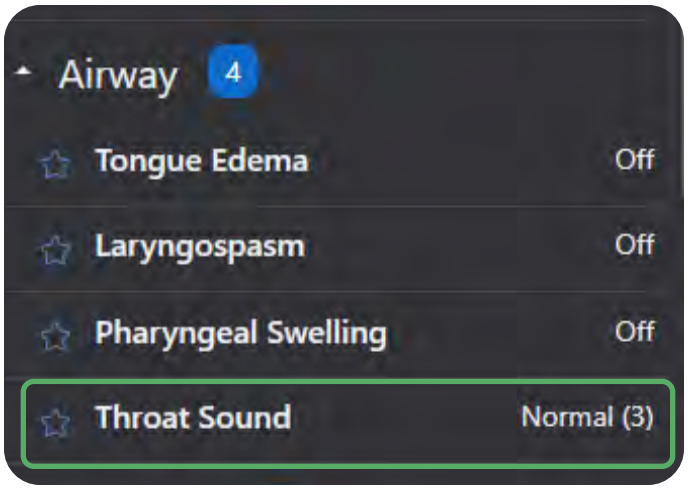


3.4.6. Throat Sounds

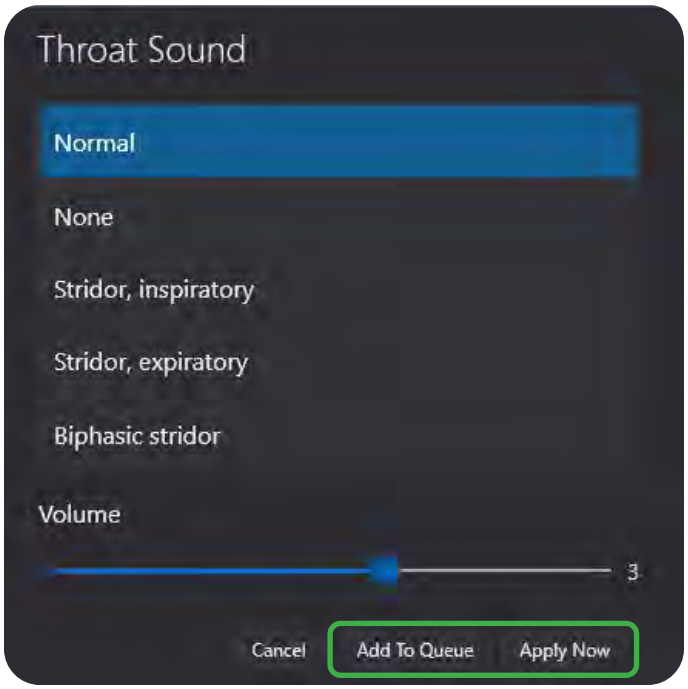
To mimic real patients with breathing issues, SUSIE has normal and abnormal throat sounds that can be selected by the facilitator in order to give auditory clues for assessments.

To select throat sounds and adjust their volume:

1. In UNI 3, under the **Airway** section click **Throat Sound**.



2. Select from the available options the type of **Throat Sound** for SUSIE.



3. Use the **Volume** slider to increase or decrease the volume level of the selected throat sound.

4. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

3.5 BREATHING

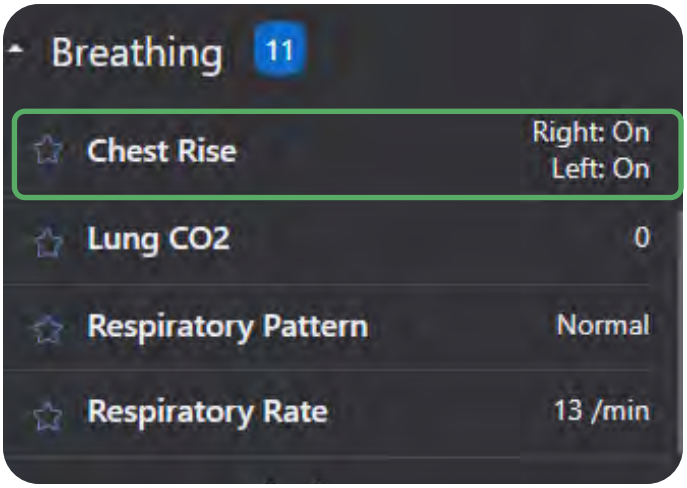
SUSIE has an impressive range of breathing capabilities that simulates lifelike chest rise, different respiratory patterns, lung sounds, oxygen saturation, ventilation options (Bag valve mask [BVM], Laryngeal mask airways [LMA], etc.) and vitals waveforms.

3.5.1. Chest Rise

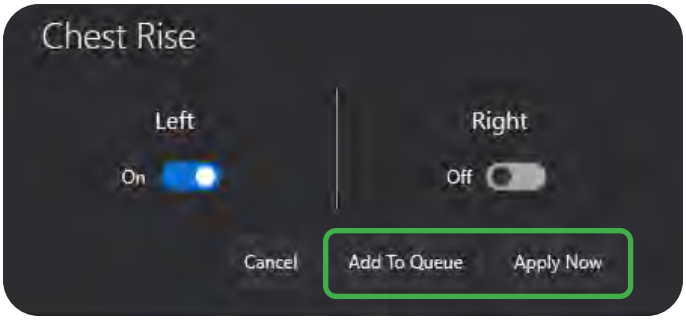
SUSIE's realistic bilateral chest rise allows providers to visually assess breathing. By default, SUSIE presents normal, bilateral chest rise but this can be adjusted to present unilateral chest rise for the left or right, whichever is preferred, or even no chest rise at all.

To change SUSIE chest rise settings:

1. In UNI 3, under the **Breathing** section click **Chest Rise**.



2. Click on the switch for **Left** and/or **Right** to turn chest rise **On** or **Off**.



If the switch is highlighted blue, this indicates that the feature is **ON**. When the switch is greyed out this indicates that the feature is **OFF**.

3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

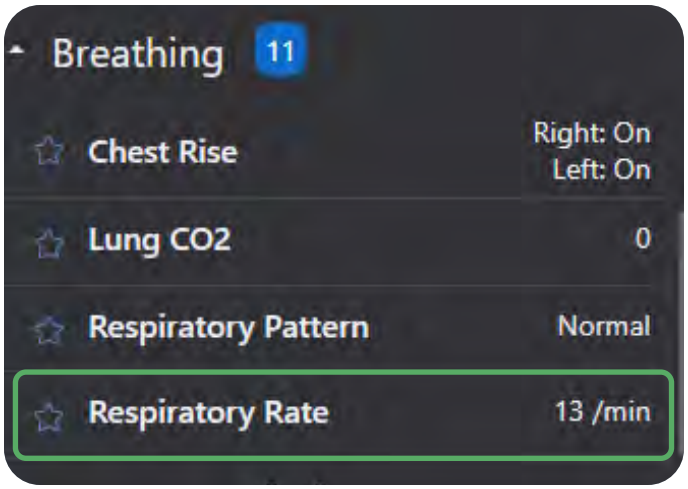
3.5.2. Respiratory Rate & Patterns

SUSIE has selectable respiratory rates with a range from 0 to 120 breaths per minute (bpm) and different respiratory patterns that include **Normal**, **Kussmauls**, **Cheyne Stokes**, **Biots**, **Apneustic**, and **Apnea**.

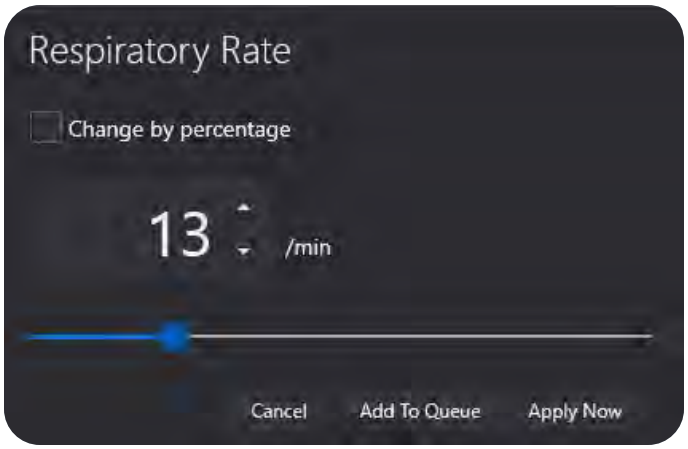
Respiratory Rate

To change SUSIE's respiratory rate:

1. In UNI 3, under the **Breathing** section click **Respiratory Rate**.

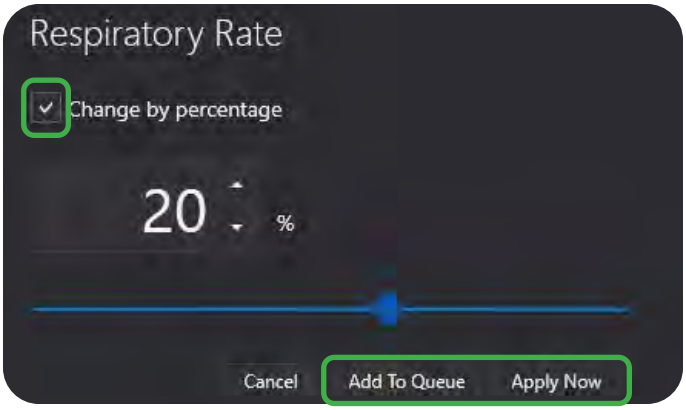


2. Use the slider bar or enter a new value to change the **Respiratory Rate**.



3. Check **Change by Percentage** to affect the **Respiratory Rate** by percent rather than bpm (breaths per minute).

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

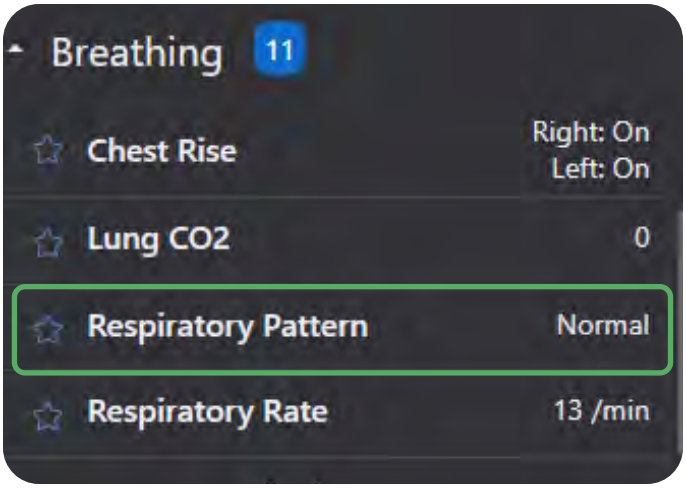


Respiratory Pattern

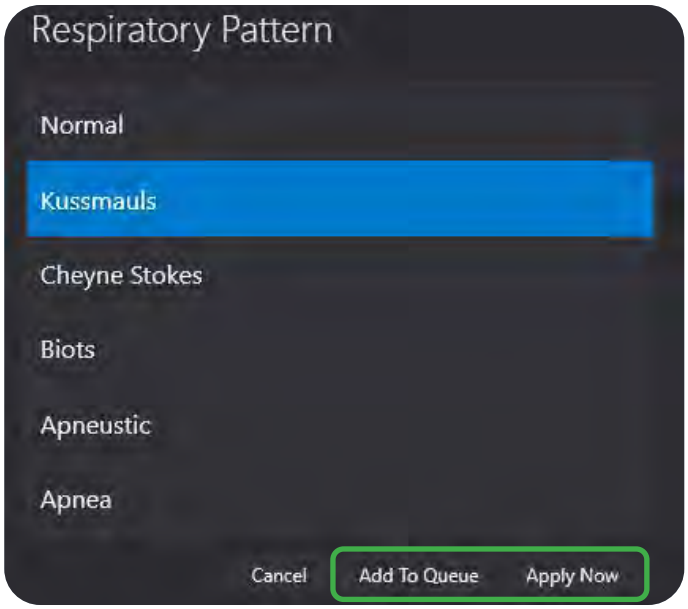
By default, SUSIE presents a normal breathing pattern with chest rise and fall.

To change SUSIE's breathing pattern:

1. In UNI 3, under the **Breathing** section click **Respiratory Pattern**.



2. Select from the available options a **Respiratory Pattern**.



3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

3.5.3. Lung Sounds & Quadrant Locations

Lung Sounds

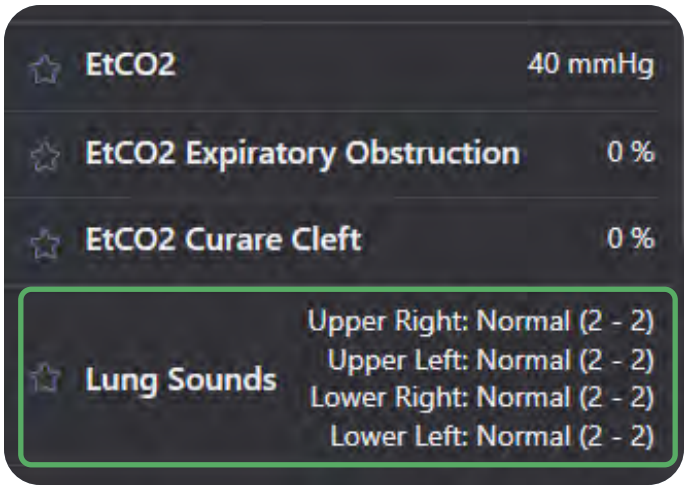
SUSIE can be auscultated using a real stethoscope in 8 locations. The 4 anterior and 4 posterior lung sound auscultation quadrants can simulate lung sounds which include:

- Normal
- Bronchial
- Crackles (fine)
- Crackles (Coarse)
- Inspiratory Muscle Noise
- Inspiratory Pleural Rub
- Expiratory Rhonchi
- Inspiratory Squeaks
- Wheezing Biphasic
- Expiratory Wheezing 1
- Expiratory Wheezing 2

These are a great addition for various auscultation assessments!

To change SUSIE's lung sounds:

1. In UNI 3, under the **Breathing** section click **Lung Sounds**.

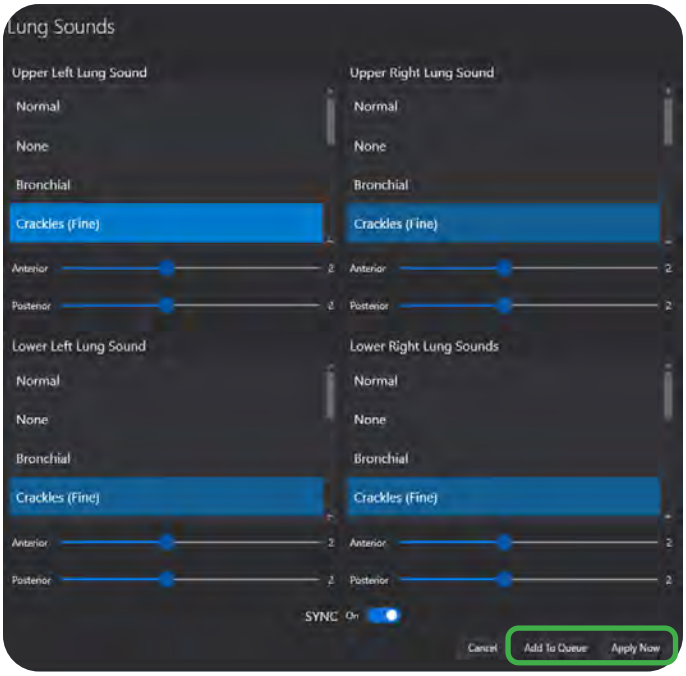


2. Select from the available options to change the **Lung Sounds** for the **Upper Left Lung**, **Upper Right Lung**, **Lower Left Lung**, and **Lower Right Lung** quadrants.

SUSIE's default Lung Sounds are set to Normal.

3. Use the slider bars below each lung quadrant to adjust the volume level for the **Anterior** and speakers.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.5.4. Ventilation

Before practing ventilation techniques on SUSIE, follow the steps below:

1. Select **Respiratory Rate** in the **Breathing** section and adjust the slider to **0** breaths per minute.

2. Select **Apply Now** to activate.

3. Practice BVM techniques using an adult sized mask having a thick seal.

Ventilations can be seen on the **Log** tab on UNI.

Do not perform mouth-to-mouth ventilation. Doing so may lead to molding of the airway. The airway itself cannot be sanitized or cleaned.

Ventilate via the endotracheal tube with manual or mechanical ventilation.

3.5.5. Oxygen Saturation, Calibration, & Finger Location

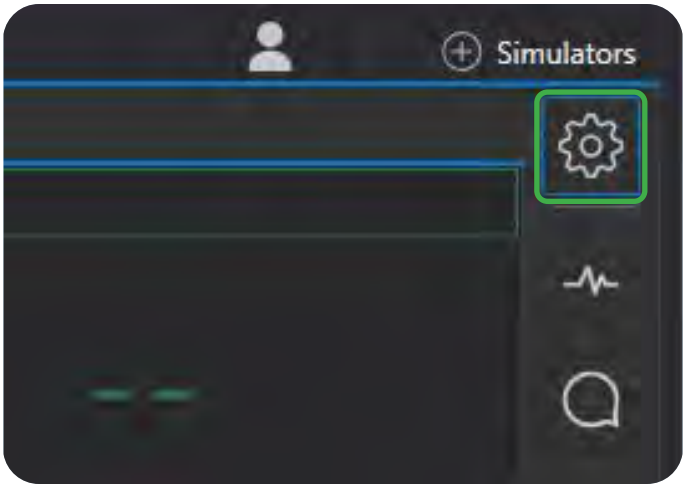
Oxygen saturation refers to the percentage of hemoglobin bound to oxygen within red blood cells. SUSIE can simulate this with a programmable oxygen saturation which can be monitored using real pulse oximetry sensors on her left index finger.

Prior to using the oxygen saturation feature, calibrate the pulse oximetry device for SUSIE's left index finger.

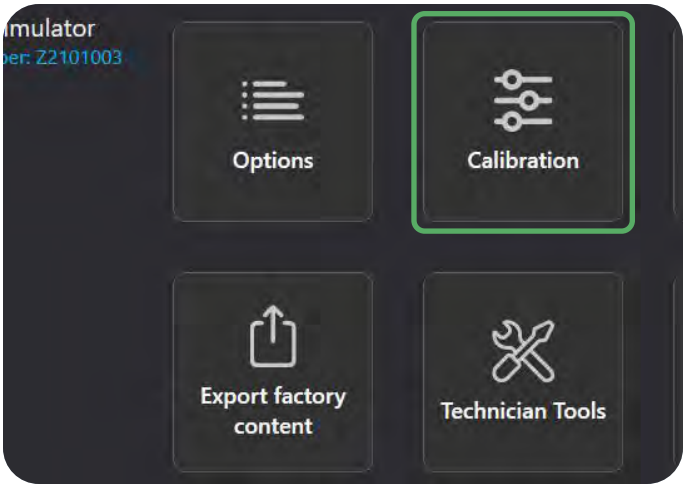
Oxygen Saturation Calibration

To calibrate the simulator with the pulse oximetry device:

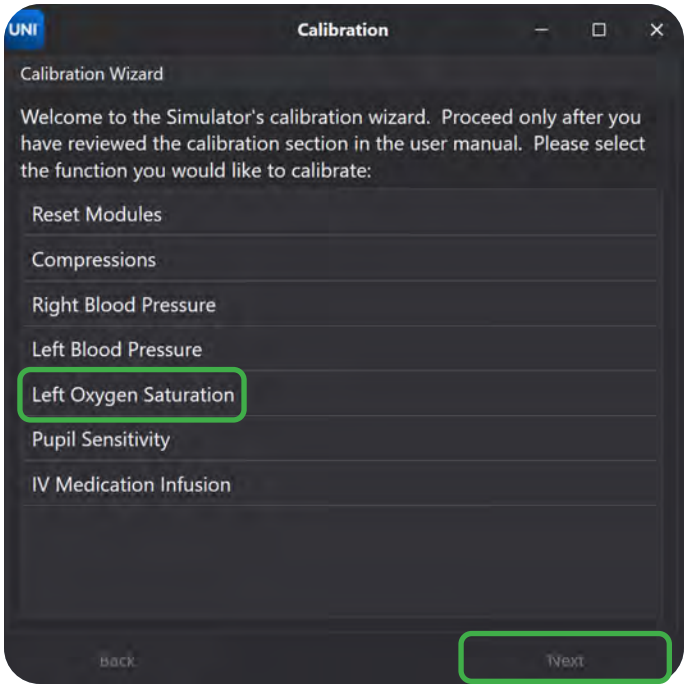
1. In the upper right corner of UNI 3, click **Settings**.



2. Scroll through the menu and click **Calibration**.



3. Select **Left Oxygen Saturation**.



4. Click **Next.**

5. Place the pulse oximeter device on SUSIE's left index finger.

6. Slowly, use the arrows to adjust the oximeter's values to match the values shown on the UNI calibration menu.

The arrows that are used to adjust the oximeter reading will affect the numbers on the actual oximeter. The numbers shown on the UNI calibration menu WILL NOT be changed.

7. Click **OK** once the values on the oximeter monitor and the UNI calibration menu match.

The grey bubble will turn green and proceed to the next value.

8. Continue this calibration process and adjust the values for the oximeter device using the arrows until the process is done. Once complete, click **Finish**.

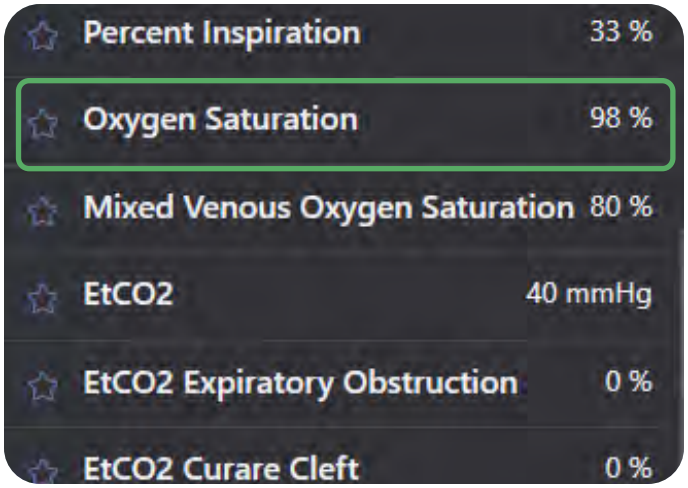
Oxygen Saturation & Finger Location

After calibrating the pulse oximeter, proceed with programming SUSIE's oxygen saturation levels.

To change SUSIE's oxygen saturation levels:

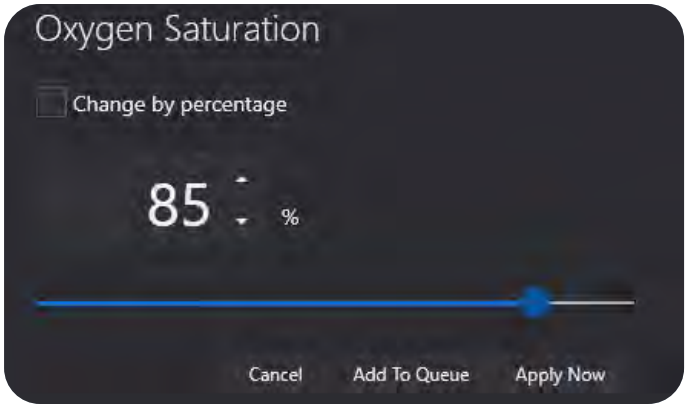
1. Place the pulse oximetry device on SUSIE's left index finger.

2. In UNI 3, under the **Breathing** section click **Oxygen Saturation**.



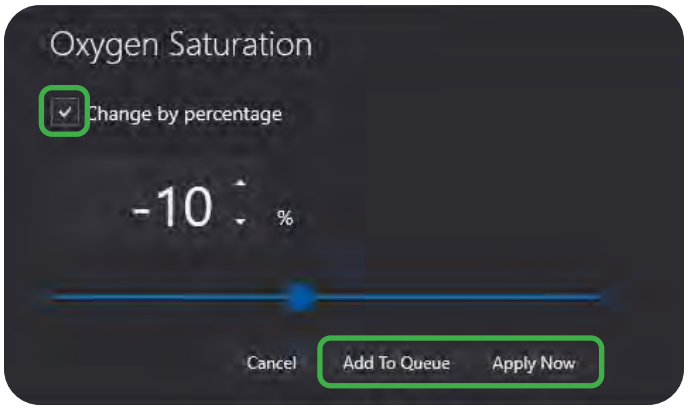
3. Enter the numeric value or use the slider bar to change the level of **Oxygen Saturation**.

SUSIE's default Oxygen Saturation is set to 98%.



4. Check **Change by Percentage** to affect the **Oxygen Saturation** by percentage.

5. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.5.6. Lung CO_2 (Optional), Capnography, & EtCO2 Controls

Lung CO_2 Setup & Capnography

SUSIE has the ability to exhale real carbon dioxide (CO_2) which can be captured on a capnogram. Once a CO_2 cartridge is purchased and installed, the amount of CO_2 can be controlled by changing the **Lung CO2** levels in UNI 3.

Due to shipping regulations, CO_2 cartridges are NOT included with the simulator. The required 16-gram threaded CO_2 3/8" - 24UNF-2A cartridges can be purchased at most bicycle or hardware stores. 12-gram threaded cartridges are also compatible.

It is recommended that the CO2 cartridge be installed at the start of the simulation day to get the maximum duration of run time.

To install the CO2 cartridge for Lung CO2:

1. Securely hold the bottom of the CO_2 cartridge's protective case with one hand and open it by twisting its top counter clockwise with the other hand.

2. Continue to twist the protective case's top until it comes off.

Refer to subsection "Removing and Replacing CO2 Cartridges" on page 75 to learn how to remove/replace the CO_2 cartridge.

3. Align and insert the new cartridge into its slot on the bottom half of the protective case ensuring that the threads are aligned.

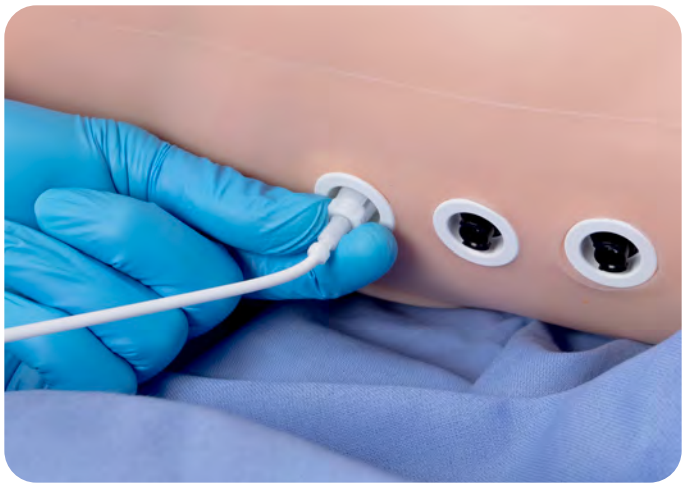
As the cartridge is tightened, the CO_2 regulator will puncture the CO_2 seal. When the seal on the cartridge is broken, it will begin to feel cold to the touch. Continue to tighten the CO2 cartridge until it is fully secured in the CO2 regulator but be sure to **NOT** over-tighten!

4. Screw the CO_2 cartridge into the case until it is tightly secured.

The cartridge will feel cool to the touch as the case pierces the cartridge seal.

5. When the cartridge is completely and firmly in its slot, place the top of the cartridge's protective case back into position and twist it firmly.

6. Attach the CO_2 connecting tube to the CO_2 port on SUSIE's lower left torso.



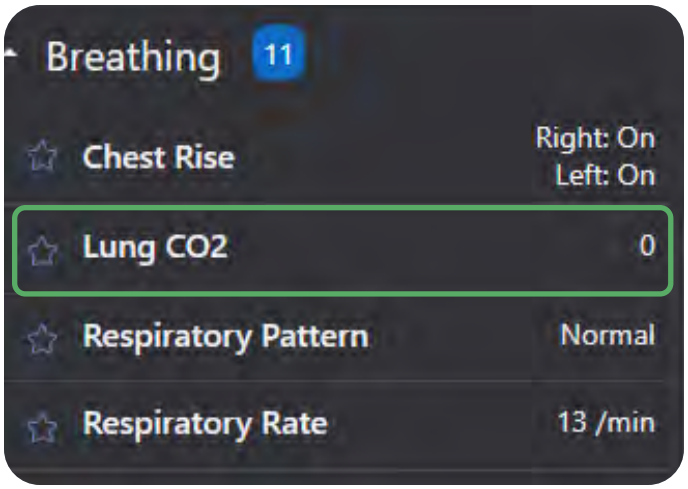
After installing an appropriate sized CO_2 cartridge, the amount of CO_2 that SUSIE exhales can be controlled through **Lung CO_2**. By default, SUSIE's **Lung CO_2** is set at a level of 0. This means that she will not exhale any measureable CO_2. As the levels of **Lung CO_2** increase, so does the measureable amount of CO_2 that SUSIE exhales. At a level 10, SUSIE will exhale her maximum amount of CO_2 during her spontaneous respiratory rate.

During chest compressions, compress SUSIE's chest to a depth of at least 1.5 inches in order for the CO_2 valve to open.

During ventilations, ventilate SUSIE an appropriate amount of ventilations which is around once every 5-6 seconds in order for the CO_2 valve to open.

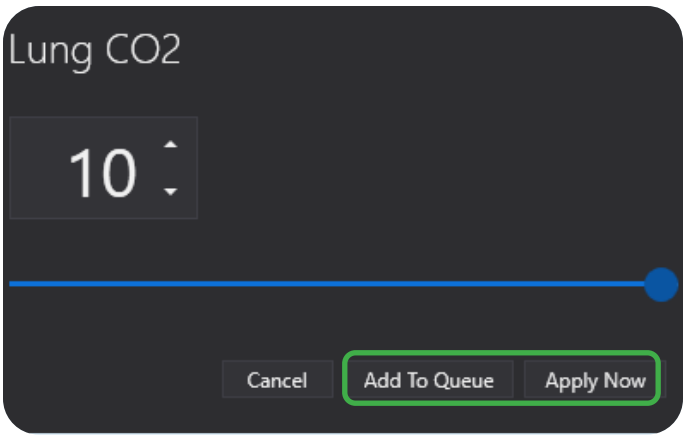
To change SUSIE's Lung CO_2:

1. In UNI 3, under the **Breathing** section click **Lung CO_2**.



2. Enter a numeric value or adjust the slider bar to the desired level within a range of 0-10.

   When Lung CO_2 is at zero, there will be no exhalation of CO_2. As the levels of Lung CO_2 are increased, the amount of CO_2 exhaled will increase.



3. Click **Apply Now** to immediately apply the selection to SUSIE or click **Add To Queue** to load at a later time.

4. Intubate SUSIE with an appropriate sized endotracheal tube and attach a capnometer to monitor her CO_2 exhalation.

Removing and Replacing CO_2 Cartridges

The CO_2 cartridge used for the **Lung CO_2** and capnography will eventually run out and will require replacing. It is always best practice to confirm there is no CO_2 left in the CO_2 cartridge before removing it and replacing it with a new one. Use a capnogram to double check that SUSIE is not exhaling CO_2.

1. Securely hold the bottom of the CO_2 cartridge protective case with one hand and open it by twisting the top counter-clockwise with the other hand.

2. Continue to twist the protective case until the top comes off.

3. With the cartridge completely spent, twist the cartridge counter-clockwise to unfasten it for removal.

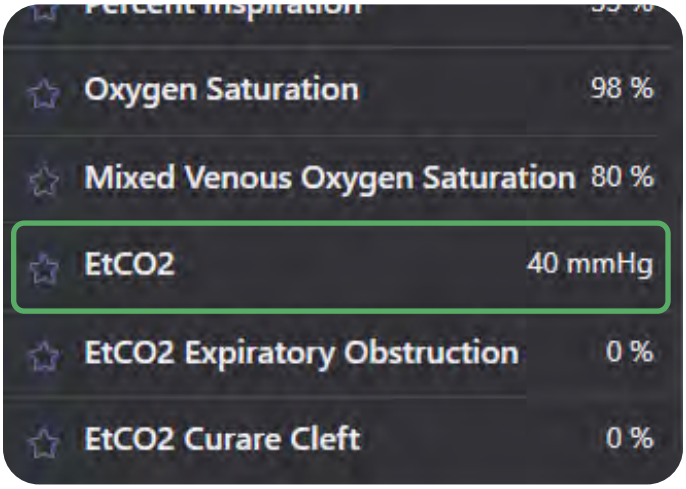
4. Remove the cartridge.

End-tidal carbon dioxide (ETCO2)

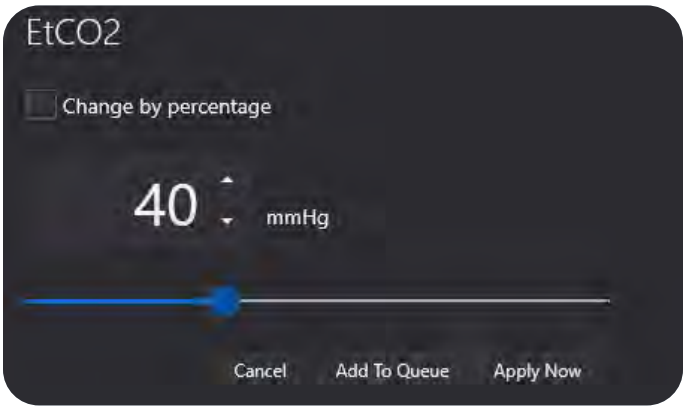
In UNI 3, **EtCO2** is a virtual value that can be displayed on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

To change EtCO2:

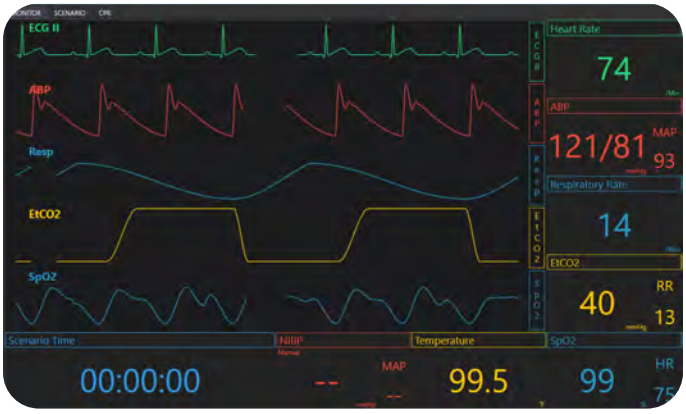
1. In UNI 3, under the **Breathing** section click **EtCO2.**



2. Enter the numeric value or use the slider bar to change the level of **EtCO2**.

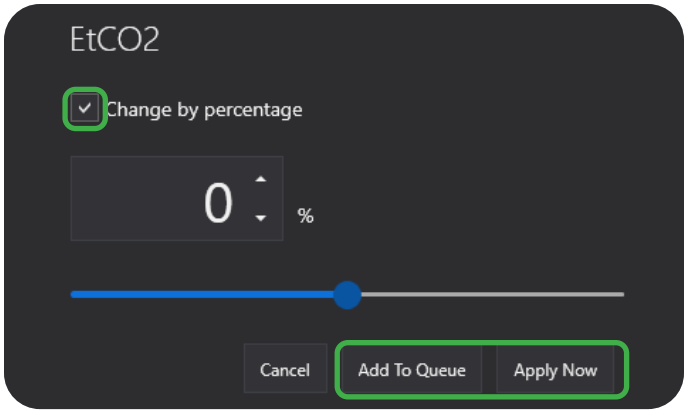


SUSIE's default EtCO2 is set to 40 mmHg which is displayed on the Monitor tab in UNI as the yellow trace.



3. Check **Change by Percentage** to affect the **EtCO2** by percentage rather than mmHg.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

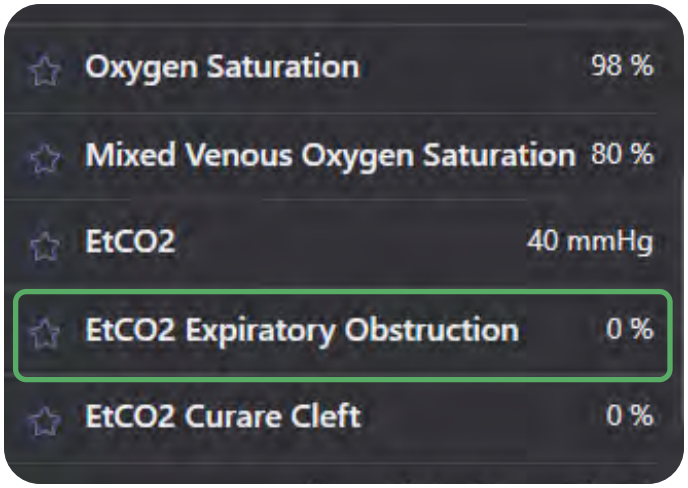


EtCO2 Expiratory Obstruction

EtCO2 Expiratory Obstruction is a virtual value that can be changed to affect SUSIE's EtCO2 waveform on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

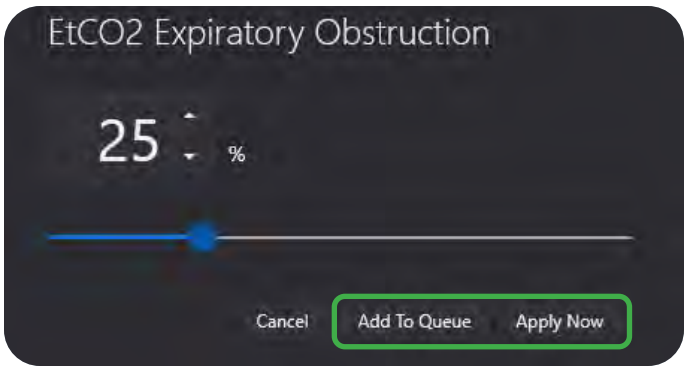
To change the level of **EtCO2 Expiratory Obstruction**:

1. In UNI 3, under the **Breathing** section click **EtCO2 Expiratory Obstruction.**

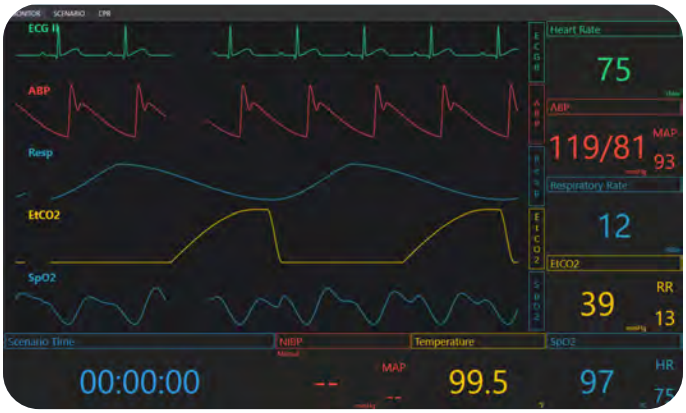


2. Enter the numeric value or use the slider bar to change the level of **EtCO2 Expiratory Obstruction**.

3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



SUSIE's default EtCO2 Expiratory Obstruction is set to 0%. As you increase the percentage of Expiratory Obstruction in UNI 3, the curve of the EtCO2 becomes more dramatic resulting in a "shark fin."



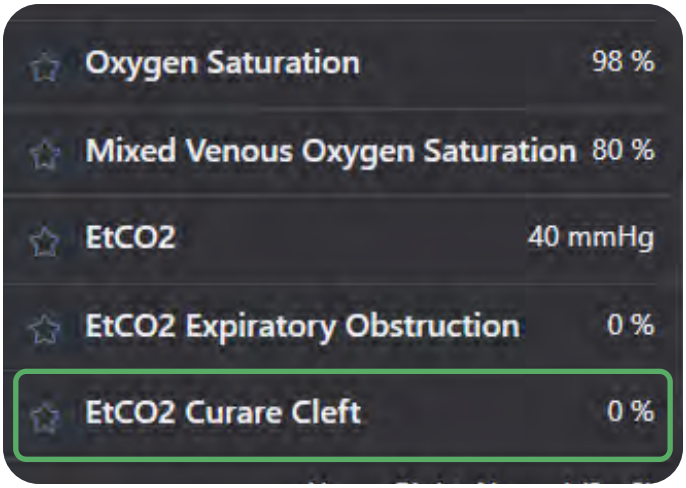
EtCO2 Curare Cleft

An EtCO2 Curare Cleft is a sudden dip, or "cleft" in the plateau of the EtCO2 waveform. This cleft may have different causes but an example can be seen in anesthesia simulations when muscle relaxants are beginning to subside in a patient and the patient takes breakthrough breath.

SUSIE can simulate an EtCO2 Curare Cleft on her EtCO2 waveform within UNI on the Monitor tab or it can be displayed on a Bedside Virtual Monitor (option available for purchase).

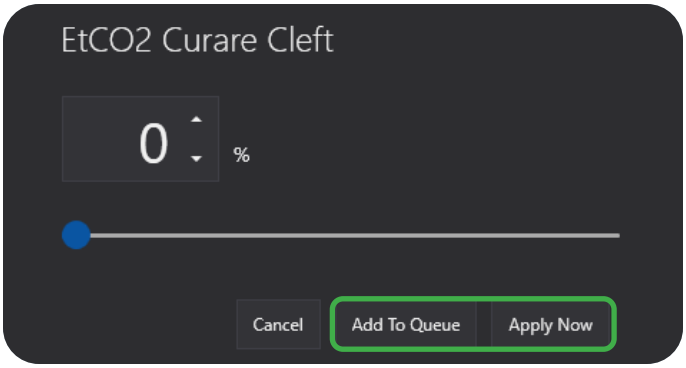
To change the severity of the Curare Cleft for SUSIE:

1. In UNI 3, under the **Breathing** section click **EtCO2 Curare Cleft.**

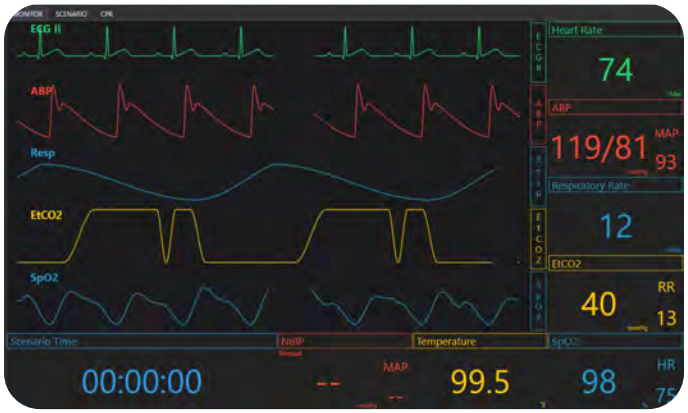


2. Enter the numeric value or use the slider bar to change the level of **EtCO2 Curare Cleft.**

3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



SUSIE's default EtCO2 Curare Cleft is set to 0%. As you increase the percentage in UNI 3, the cleft seen in the plateau portion of the EtCO2 waveform increases.



3.6 CARDIAC

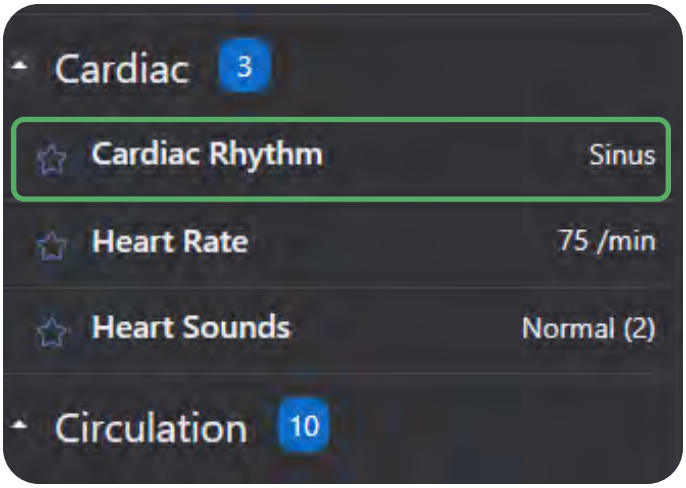
SUSIE's cardiac capabilities, to name a few, include heart sounds and auscultation sites, 4-lead ECG monitoring using real monitoring devices, defibrillation, and CPR feedback.

3.6.1. Cardiac Rhythm

SUSIE has an ECG library with 25+ different cardiac rhythms to choose from.

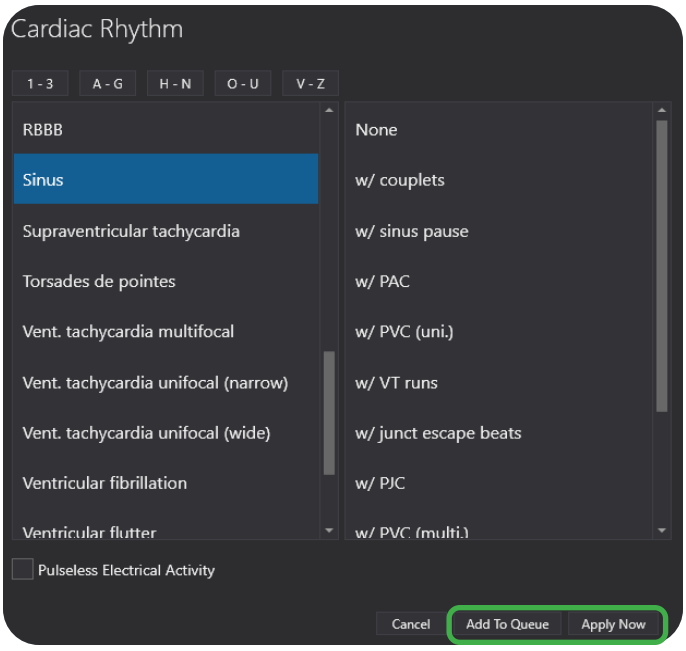
To choose a different cardiac rhythm for SUSIE:

1. In UNI 3, under the **Cardiac** section click **Cardiac Rhythm**.



2. Select from the available options to change SUSIE's **Cardiac Rhythm**.

SUSIE's default Cardiac Rhythm is set to Sinus.



3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

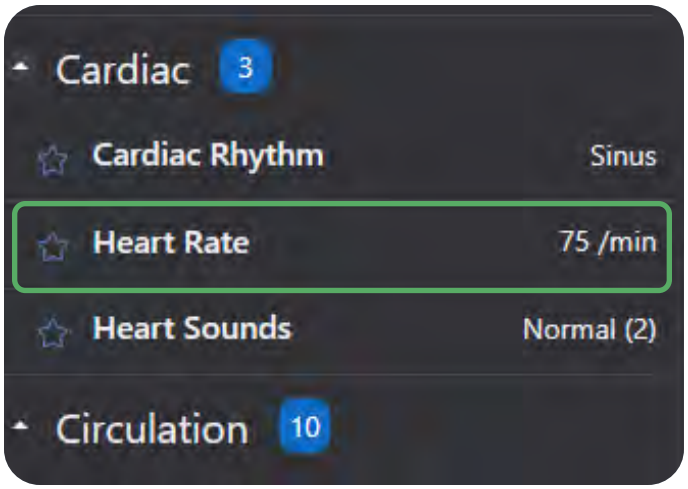
Refer to section"4.3 ECG Designer & Myocardial Infarction Model" on page 165 to learn how to create your own cardiac rhythms.

3.6.2. Heart Rate

SUSIE's programmable heart rate can be changed to suit any simulation needs.

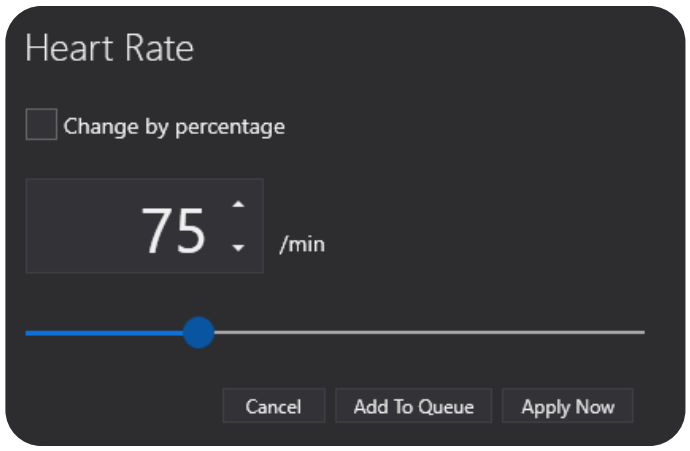
To change SUSIE's heart rate:

1. In UNI 3, under the **Cardiac** section click **Heart Rate**.



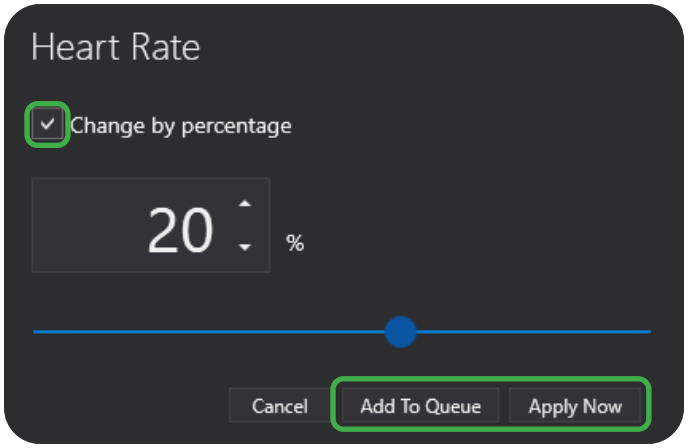
2. Enter a numeric value or adjust the slider bar to change SUSIE's heart rate.

SUSIE's default heart rate is 75 beats per minute.



3. Check **Change by Percentage** to change the **Heart Rate** by percentage rather than by beats per minute.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.6.3. Heart Sounds & Locations

Heart Sounds

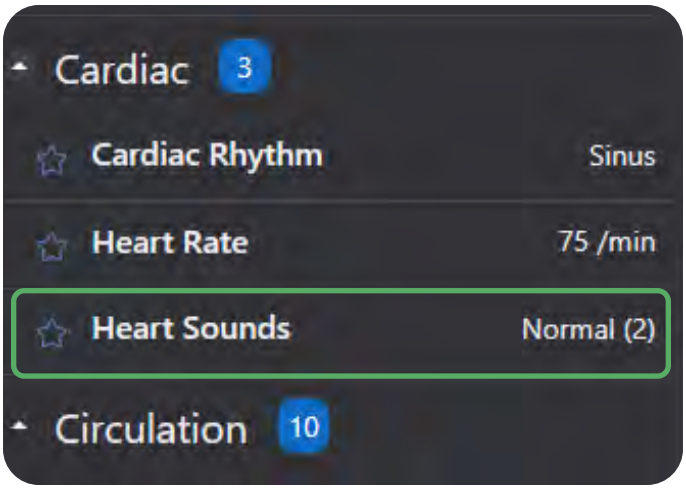
SUSIE has anterior heart sounds which include:

- Aortic Regurgitation
- Aortic stenosis, S2 Present
- Aortic Stenosis S2 Absent (severe stenosis)
- Atrial septal defect, systolic ejection murmur with persistent s2 split
- Holosystolic murmur
- Hypertrophic cardiomyopathy, squatting
- Hypertrophic cardiomyopathy, Valsalva
- Innocent murmur
- Mitral stenosis, (murmur and opening snap)
- Mitral stenosis (opening snap murmur)
- Mitral Valve Prolapse, (mid-systolic click and late systolic murmur)
- Mitral Valve Prolapse, (mid-systolic click, without murmur)
- Pulmonic Stenosis (ejection click, murmur with split s2)
- Pulmonic Stenosis (ejection click, murmur)
- S3 Heart Sound
- S4 Heart Sound
- Split S1
- Split S2, Persistent
- Split S2, Transient
- Pericardial Friction Rub
- Coarctation of the Aorta
- S3 and S4 Gallop

These are a great addition for various auscultation assessments!

To change SUSIE's heart sounds:

1. In UNI 3, under the **Cardiac** section click **Heart Sounds**.

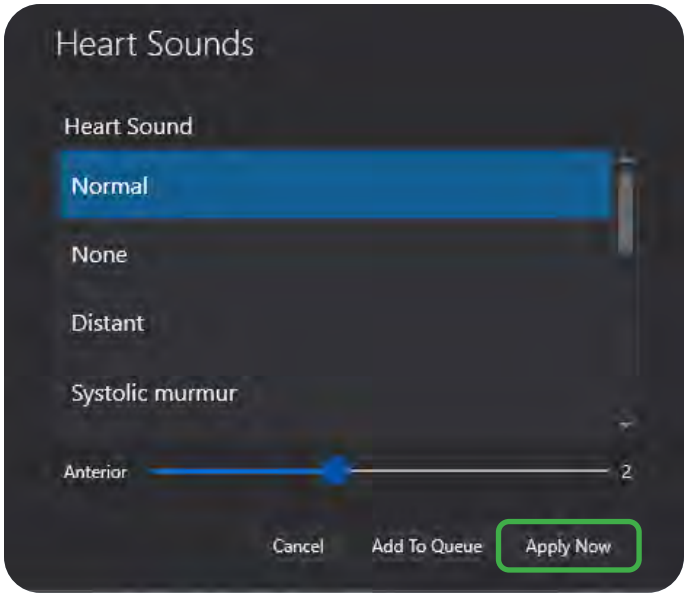


2. Select from the available options to change the **Heart Sounds**.

SUSIE's default Heart Sounds are set to Normal.

3. Use the slider bar below the selected heart sound to adjust the volume level.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



Heart Sound Locations

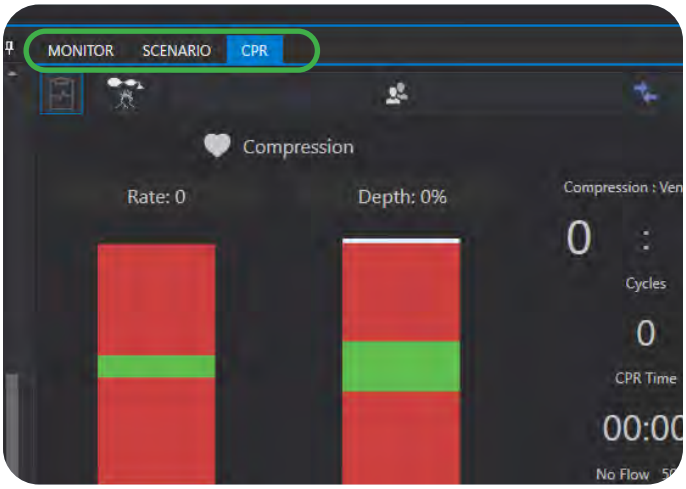
SUSIE has a heart sound speaker that can be auscultated.

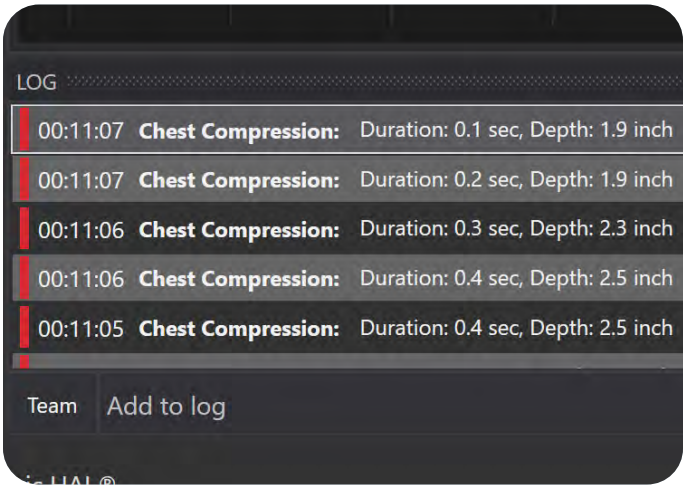
3.6.4. Chest Compressions

SUSIE is capable of having chest compressions by way of her eCPR™ sensors. The provider can use the **CPR tab** in UNI to monitor the effectiveness of the compressions. Proper compressions results in palpable carotid pulses. All chest compressions are also measured and logged in UNI.

The facilitator can set the **heart rhythm** to **ventricular fibrillation** or **asystole** and instruct the provider to perform chest compressions. Monitor the depth and frequency of chest compressions from the CPR trainer window. Before using the chest compression feature for the first time, please calibrate the chest compression feature.

Proper chest compressions result in palpable carotid pulses.



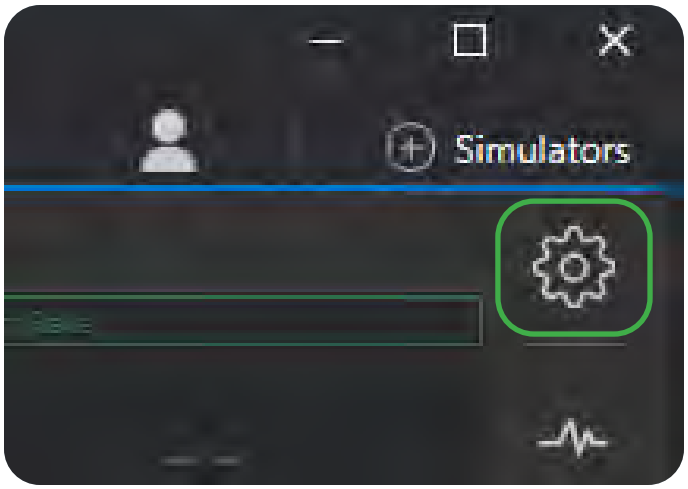


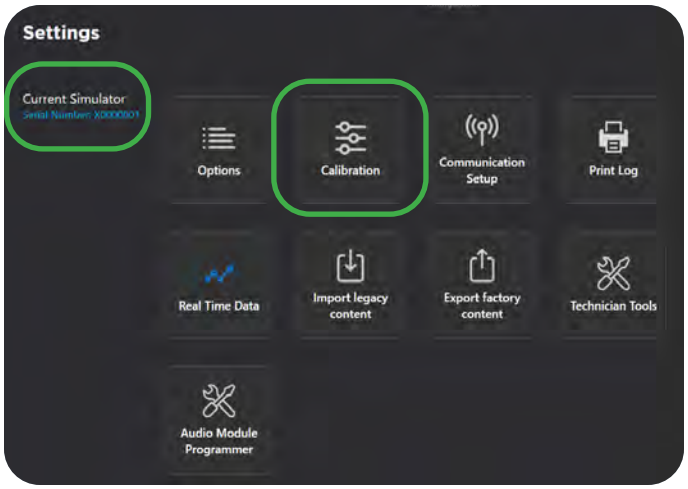
3.6.5. Compressions Calibration

The compression calibration records the performance average of five compressions as the benchmark for a correct compression. Perform the actions requested following the most current CPR guidelines. The CPR window evaluates provider performance based on the benchmark recorded during the calibration process.

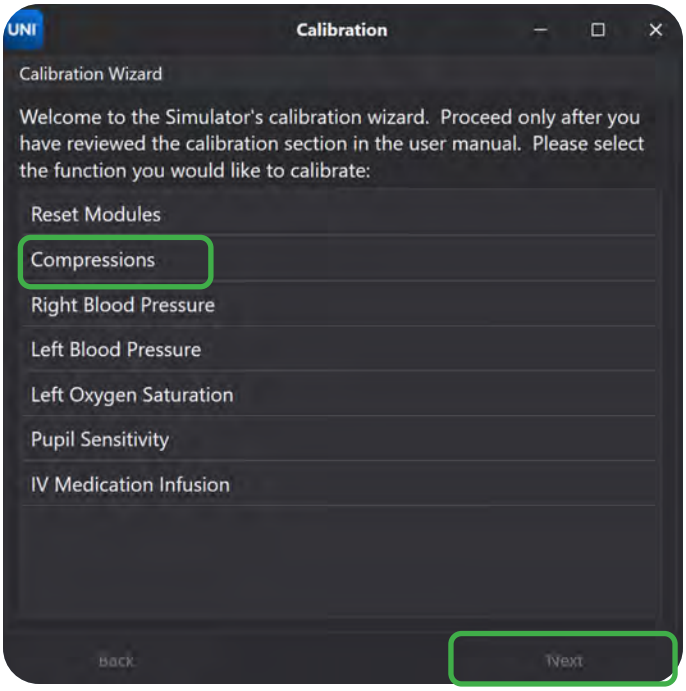
To calibrate the compression performance benchmark using the UNI software:

1. Click the **Settings** icon in the UNI software. Then locate the **Calibration** setup that is found in the **Current Simulator** section.



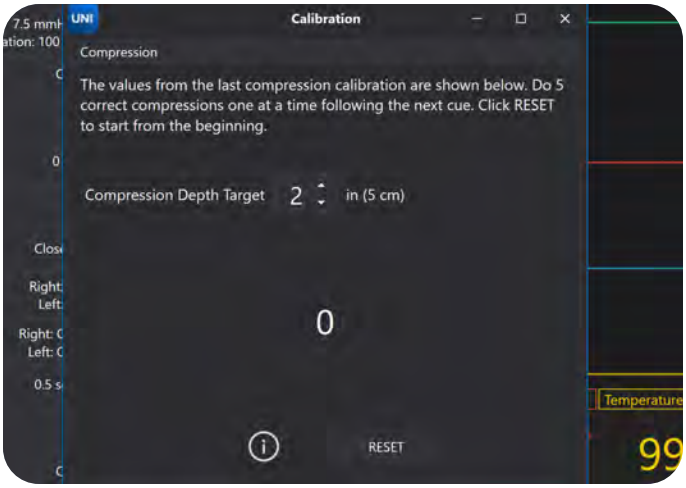


2. Select the **Compressions** option and click **Next**.



3. Follow the cues given by the calibration wizard. Perform 5 correct compressions at the corresponding depth. Do the same when the next cue occurs.

4. Click **Next** to complete the calibration.



3.6.6. ECG & Defibrillation

SUSIE supports 4-lead ECG monitoring using real medical monitoring equipment. SUSIE also supports standard defibrillation, cardioversion, and pacing with live energy with anterior/lateral and anterior pad placement.

ECG & Defibrillation Guidelines

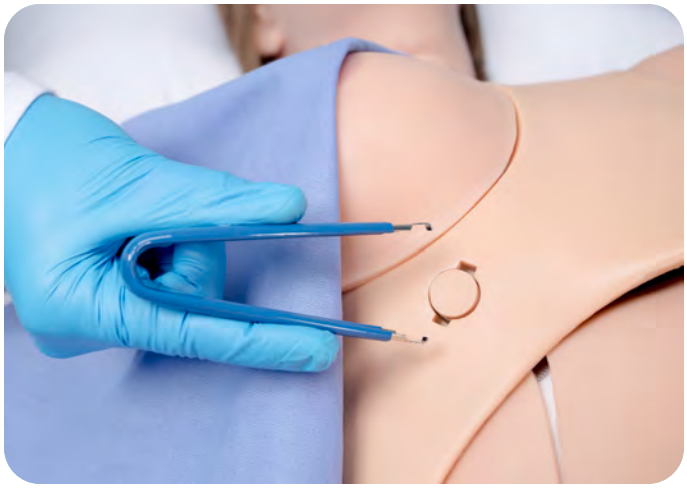
- Only deliver electrical therapy when the simulator is fully assembled, dry, and undamaged.
- Defibrillation is only allowed on the sternum and apex sites. Remember to always use the Adapters for Non-Snap DEF Electrodes in these locations, when necessary.
- Make sure the defibrillation pads to be used on the simulator are in good condition.
- It is a good practice to remove gel residues after every use. Failure to do so will leave behind a film of electrode gel that hardens causing arcing and pitting.
- To aid removal of ECG gel, sprinkle baby powder on the residual ECG gel to dry it up and remove it gently with the pad of your finger.
- Medical products, such as electrodes, may use powerful adhesives that can be difficult to remove. A gentle, degreasing cleanser may be needed.
- Should dark traces appear on the conductive sites due to gel residue or previous arcing, use a pencil eraser to remove the traces and then clean with alcohol.
- Do not reuse the gel-adhesive pads. Do not leave them on for next day use.
- **NEVER** deliver a shock to ECG electrode sites. Doing so will result in internal damage to the simulator. This is considered improper use and is **NOT** covered by the simulator's warranty. The system will require repair at a Gaumard facility.
- Use hard paddles or wet-gel pads.
- Avoid using solid-gel pads since they present higher risk of burning the simulator's skin.
- Gel pads have a shelf-life. Confirm they are not expired to avoid arcing.
- Be sure the simulator is not in contact with any electrically conductive surfaces.
- Use the simulator only in a well-ventilated area, free of all flammable gases.
- **NEVER** attempt to service or modify any of the electrical connections, especially those between conductive skin sites and the internal electronics.
- Discontinue use if any wires are found exposed with damaged insulation.

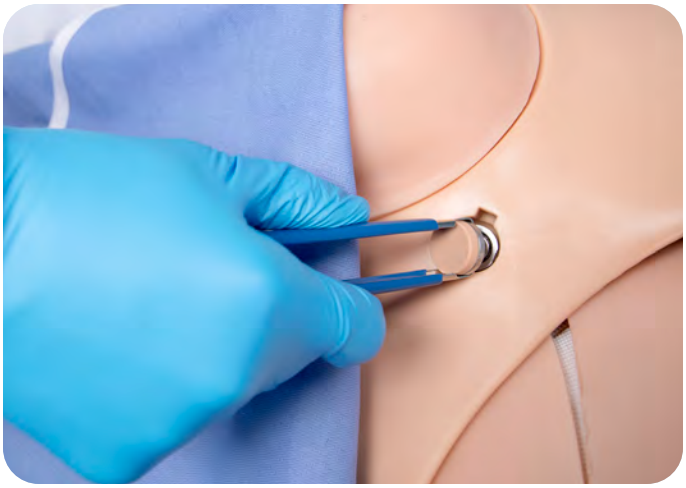
ECG Setup

To prepare SUSIE for an ECG simulation there are two methods of connecting her to a real medical monitoring device. You can either directly connect the ECG leads to the **ECG Snap Inserts** or use real gel electrodes together with the **ECG Patch Inserts**.

To connect an ECG monitor to SUSIE's **ECG Snap Inserts**:

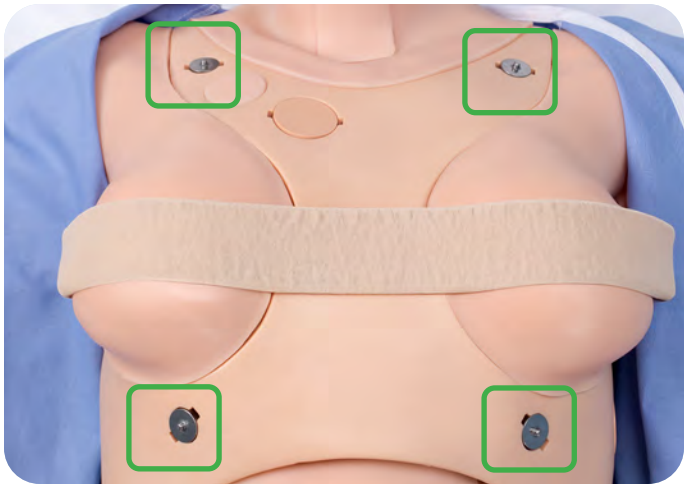
1. Use the **ECG & Defibrillation Inserts Extraction Tool** to remove the default ECG Inserts.



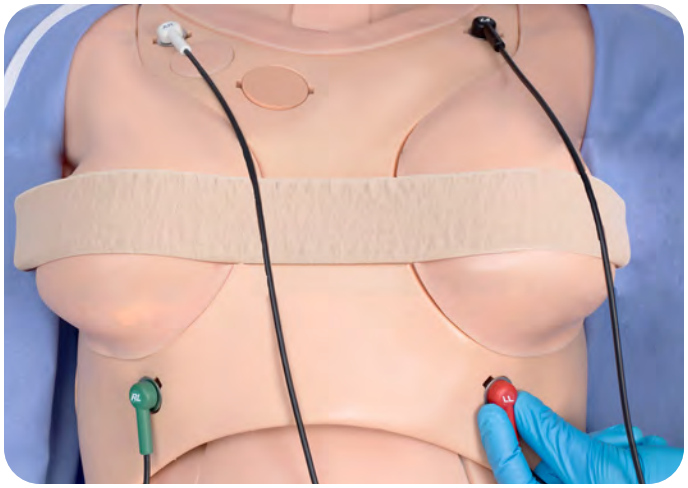


2. Install the **ECG Snap Inserts** into the ECG locations on SUSIE's anterior torso.

Torso with ECG Snap Inserts installed in each of the 4 anterior locations.



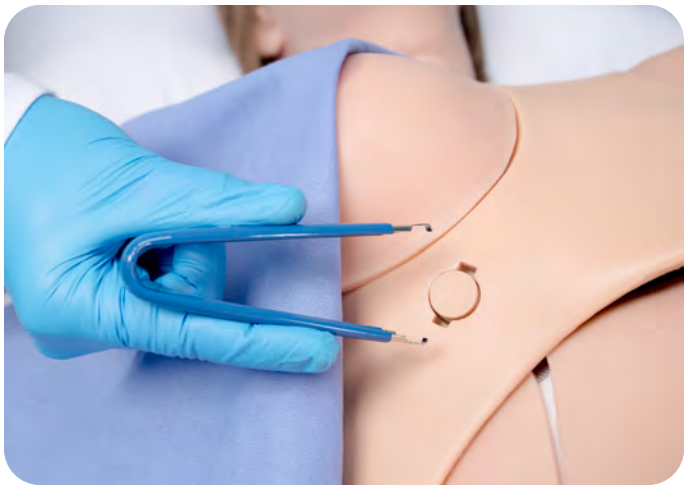
3. Connect the ECG Monitor leads directly to each of the **ECG Snap Inserts**.

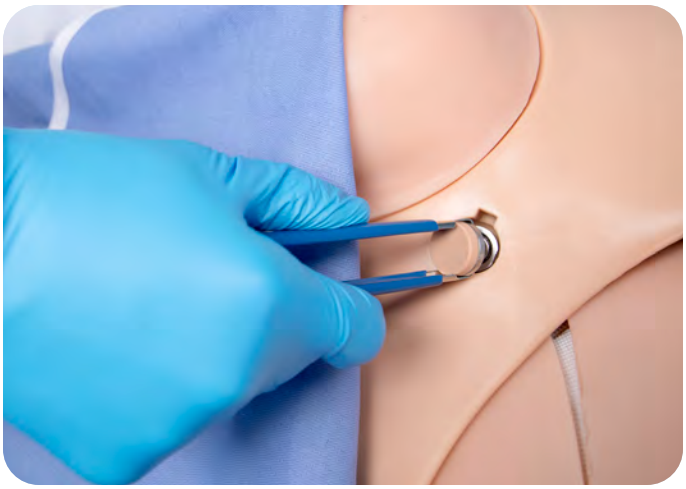


SUSIE can apply real gel electrodes to the **ECG Patch Inserts** and then connect ECG leads.

To attach real gel electrodes to SUSIE's **ECG Patch Inserts**:

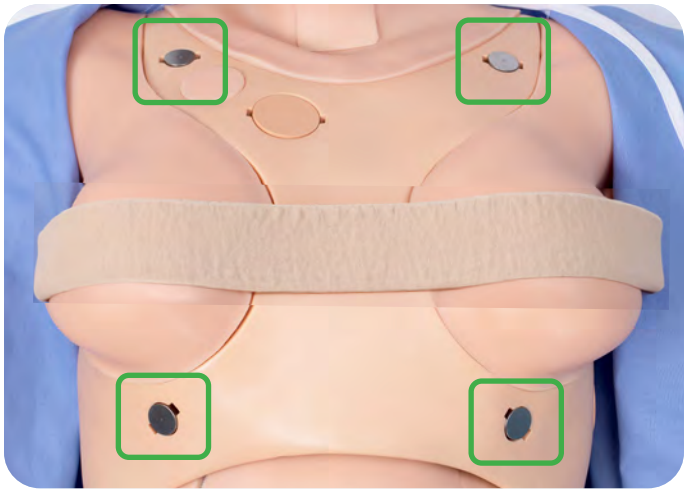
1. Use the **ECG & Defibrillation Inserts Extraction Tool** to remove the default ECG Inserts.



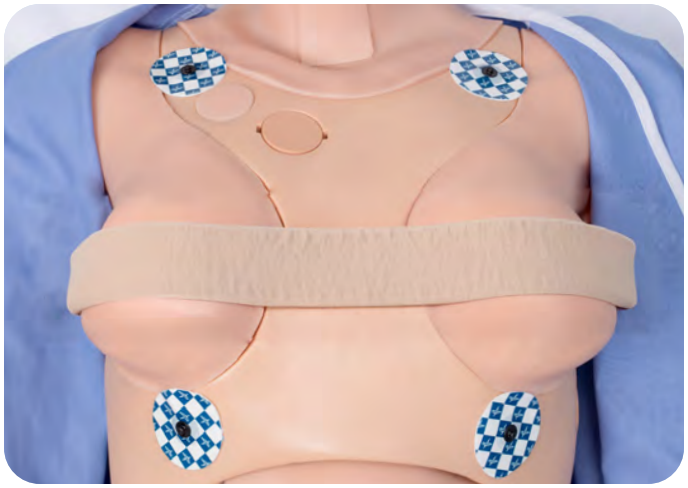


2. Install the **ECG Patch Inserts** into the ECG locations on SUSIE's anterior torso.

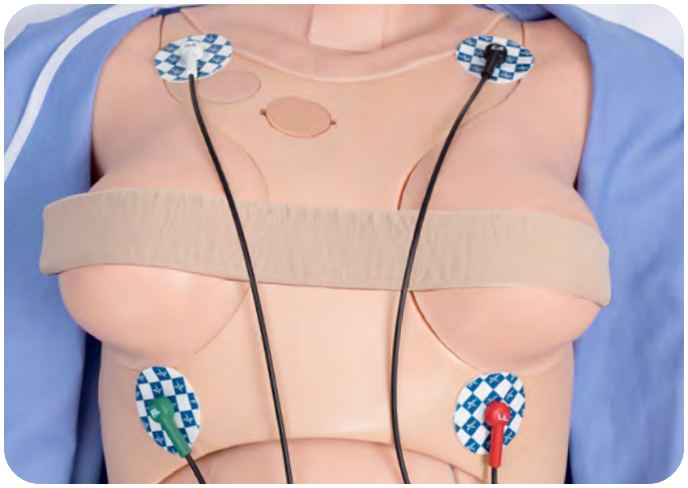
Torso with ECG Patch Inserts installed in each of the 4 anterior locations.



3. Use real gel ECG electrodes and place one atop each of the **ECG Patch Inserts**.



4. Connect the ECG leads to the gel ECG electrode by pressing the lead onto the ECG snap.



Defibrillation Setup

SUSIE supports standard defibrillation, cardioversion, and pacing with live energy on her apex and sternum sites.

To provide SUSIE with electrical therapy, attach the defibrillation pads to the **Defibrillation Patch Inserts** to safely deliver electrical therapy energy.

To apply defibrillation pads to SUSIE's **Defibrillation Patch Inserts:**

1. Use the **ECG & Defibrillation Inserts Extraction Tool** to remove any inserts.

2. Install the **Defibrillation Patch Inserts** for the sternum and apex.

Sternum Site

Apex Site

3. Apply real defibrillation pads to the **Defibrillation Patch Inserts** on the sternum and apex location.

Always place where the defibrillation patch does not overlap an ECG site.

Do NOT deliver electrical therapy to ANY of SUSIE's ECG electrode sites. If electrical energy is delivered to any of the ECG electrode sites, this has the potential to short circuit SUSIE's ECG module.

SUSIE is now ready to be connected to a defibrillation device!

Defibrillation Option Connection

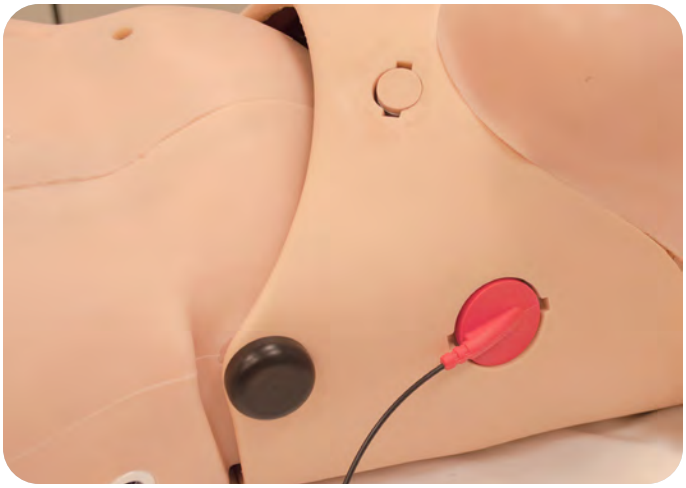
These snaps allow for easy attachment and cleanup of a modified defibrillation snap adapter cable which allows the simulator to be hooked up to real medical monitoring equipment. These snap adapters are connected to SUSIE's Defibrillation Snap Inserts. These can be made to be compatible with Philips, Zoll, Physio, or a customer specific equipment.

Refer to section "6.1 Snap compatible defibrillation sites" on page 197 to see each option visually.

1. Use the **ECG & Defibrillation Inserts Extraction Tool** to remove any inserts.

2. Connect the black connector to SUSIE's sternum site

3. Connect the red connector to SUSIE's apex site.



The simulator is now ready for simulation in accordance with the desired option!

3.7 CIRCULATION

3.7.1. Pulse Locations & Controls

Pulse Locations

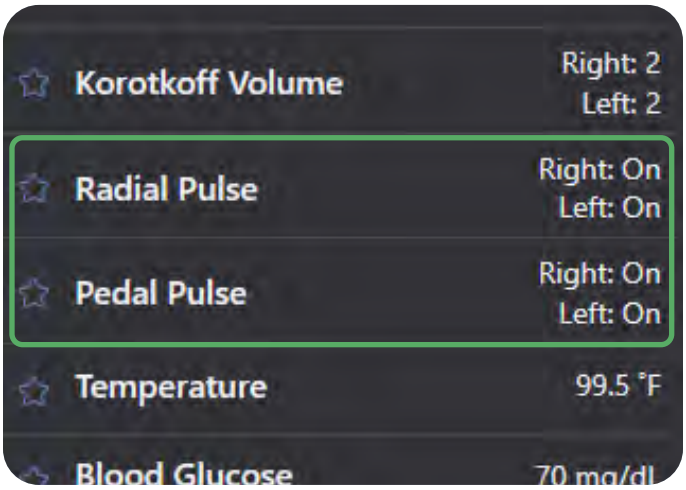
SUSIE has bilateral palpable pulses located at the carotid, brachial, radial, femoral, popliteal, and pedal locations.

Pulse Controls

SUSIE has independent controls to turn her bilateral radial and/or pedal pulses on or off.

To disable or enable radial or pedal pulses:

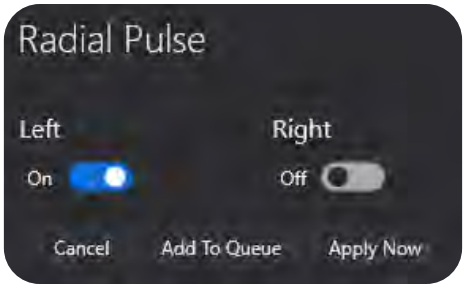
1. In UNI 3, under the **Circulation** section click **Radial Pulse** or **Pedal Pulse**.

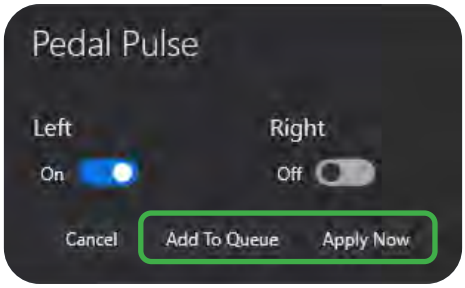


2. Click on the switch to turn the pulses **On** or **Off**.

> SUSIE's default Radial and Pedal pulses are turned ON. When the switch is highlighted blue the pulses are ON and when the switch is grayed out, the pulses are OFF.

3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.





3.7.2. Blood Pressure, Controls, & Waveforms

Blood pressure can be taken bilaterally by means of an automatic Non-Invasive Blood Pressure (NIBP) cuff or an auscultatory modified manual blood pressure cuff with sphygmomanometer. The blood pressure and volume of Korotkoff sounds are adjustable through the use of the UNI software.

Modified Auscultatory Blood Pressure

SUSIE's modified auscultatory method of taking blood pressure requires a blood pressure cuff that has an additional tubing that gets connected to the left or right shoulder of the simulator (provided in her accessories). The bell of a stethoscope is placed above the bend of SUSIE's elbow to auscultate for Korotkoff sounds, which the volume can be controlled in UNI 3.

To connect the modified blood pressure cuff:

1. Obtain the **Modified Blood Pressure Cuff** from SUSIE's accessories and connect the modification hose to the port located on SUSIE's left or right shoulder.

2. Wrap the **Modified Blood Pressure Cuff** around SUSIE's left or right bicep, just as you would a real patient.

3. Use the attached sphygmomanometer to inflate the cuff and place the bell of a stethoscope above the bend of SUSIE's elbow to listen for Korotkoff sounds.

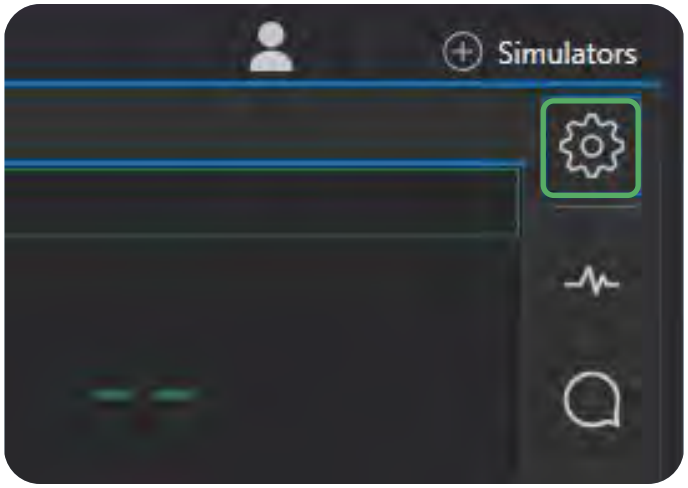
Calibrating & Using the Modified Auscultatory Blood Pressure Cuff

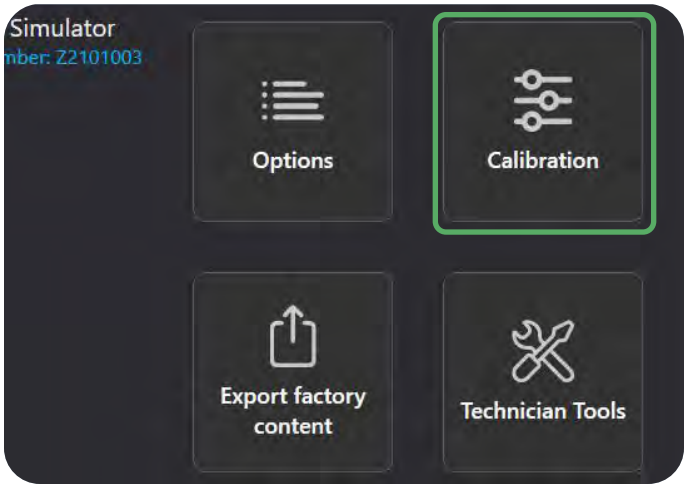
Before using the modified auscultatory feature, be sure to calibrate the cuff to SUSIE.

To calibrate the modified cuff:

1. Connect the **Modified Blood Pressure Cuff** to SUSIE as mentioned in the previous section.

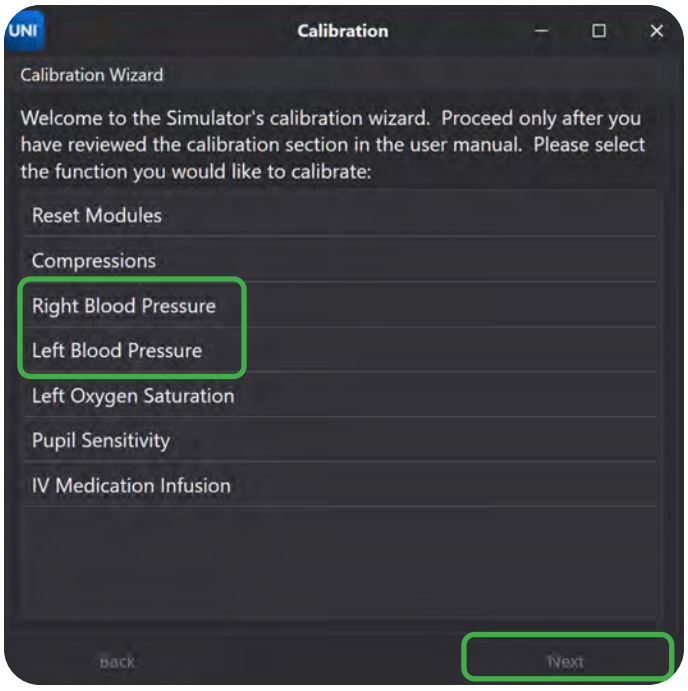
2. Click on the **Settings** icon and select **Calibration**.





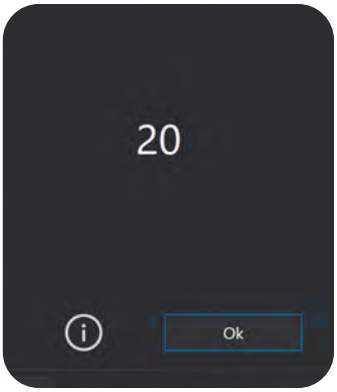
3. Select from the **Calibration** menu **Right Blood Pressure** or **Left Blood Pressure**.

4. Click **Next**.

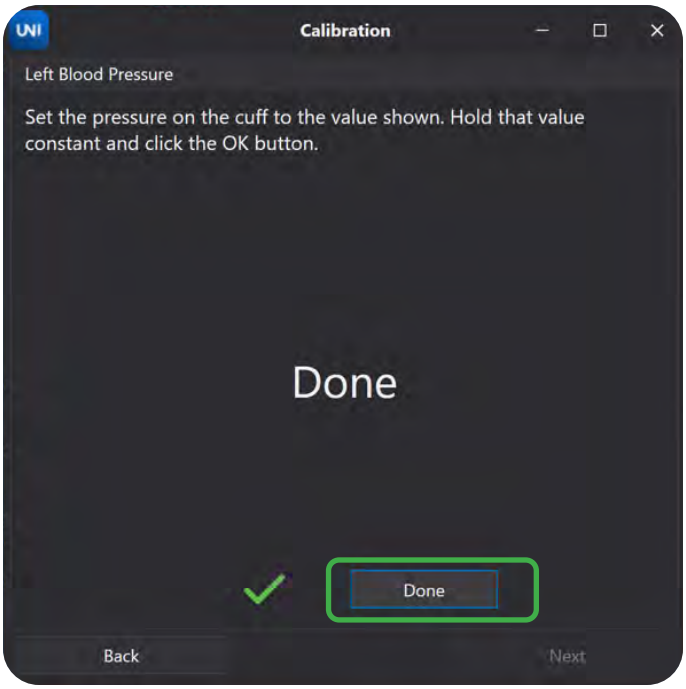


5. Follow the steps of the desired **Right Left Blood Pressure Calibration Wizard** that appears.

The wizard will ask the user to cycle through the pressure values of 20, 40, 60, 80, 200, 300, and then Done.



6. Click **Done**.



Modified Automatic (Oscillometric) Blood Pressure

To monitor SUSIE's blood pressure, a modification must be done on the automatic blood pressure cuff before use.

SUSIE does not include an automatic NIBP cuff due to customers having different automatic NIBP equipment. However, SUSIE does include a **Blood Pressure Tube Adapter Kit** that provides the "T" connector.

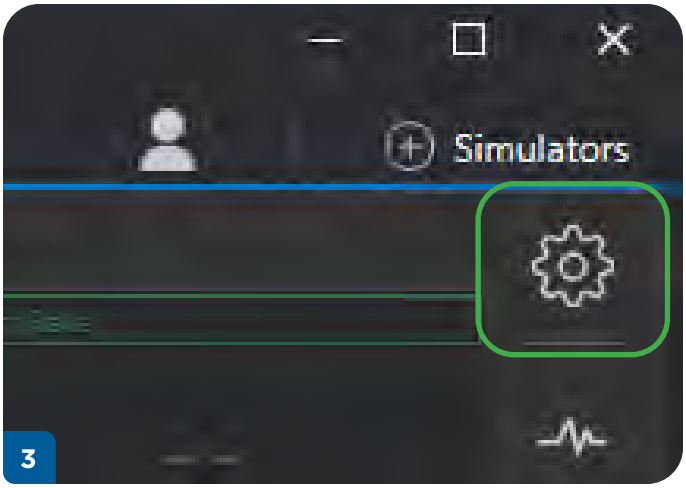
1. Cut the hose of the NIBP cuff.

The "T" connector of the **Blood Pressure Tube Adapter** is what gets connected to the cut ends of the hose on the automatic blood pressure cuff. This adds the additional pneumatic line that connects to SUSIE's upper left and right shoulders.

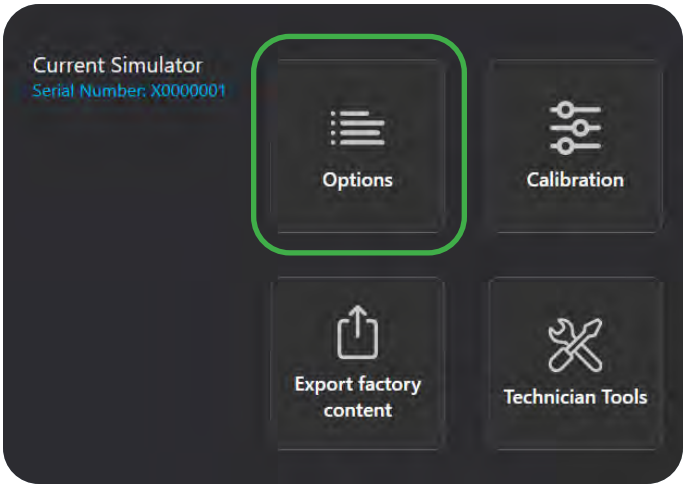
2. Connect the modified hose to the NIBP port on SUSIE's upper left or right shoulder.

3. Apply the cuff to SUSIE's left or right arm—just as you would a real patient. Be sure to connect the cuff to the automatic blood pressure machine as well.

4. To activate the Automatic Blood Pressure, click on the **Settings** icon in the upper right corner.

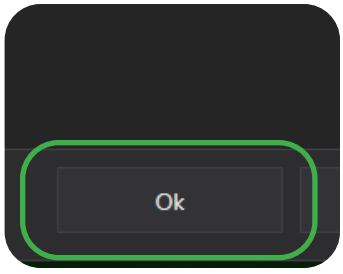


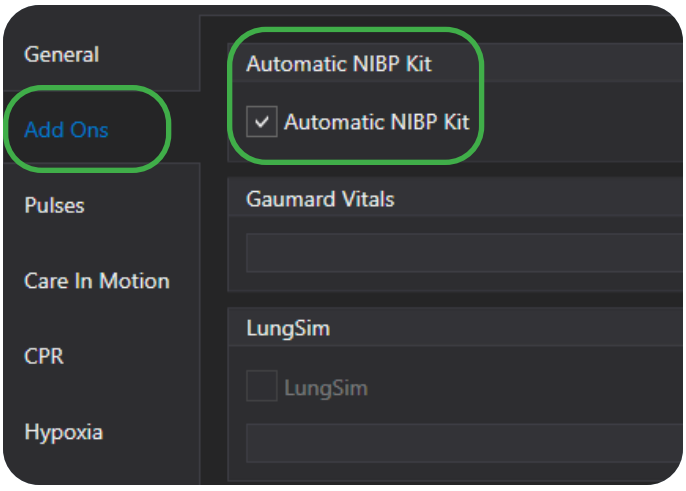
5. Select **Options** in **Current Simulator** section.



6. Click the **Add Ons** tab, and check the **Automatic NIBP Kit** box.

7. Click **Ok**.





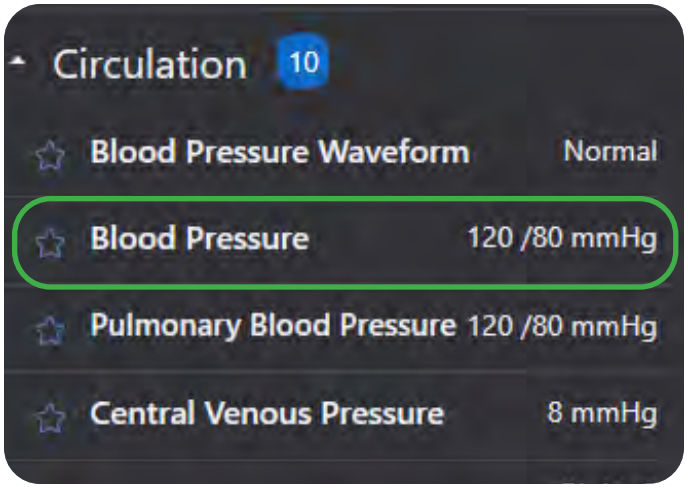
Blood Pressure

To adjust the values for blood pressure on SUSIE (non-invasive) use the **Blood Pressure** control in UNI 3.

The **Blood Pressure** values will be displayed on the real monitoring devices and on the Monitor within UNI as the **ABP** parameter. If the optional Bedside Virtual Monitor is purchased, the Blood Pressure values may also be displayed on there as well.

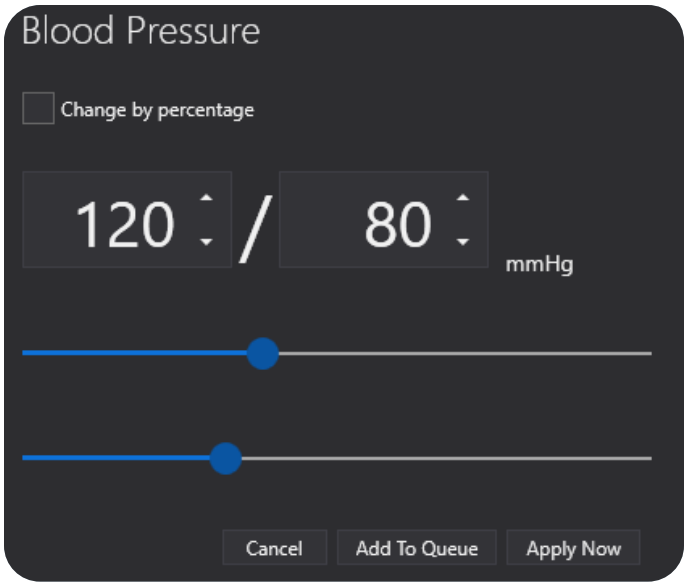
To change SUSIE's Blood Pressure:

1. In UNI 3, under the **Circulation** section click **Blood Pressure.**

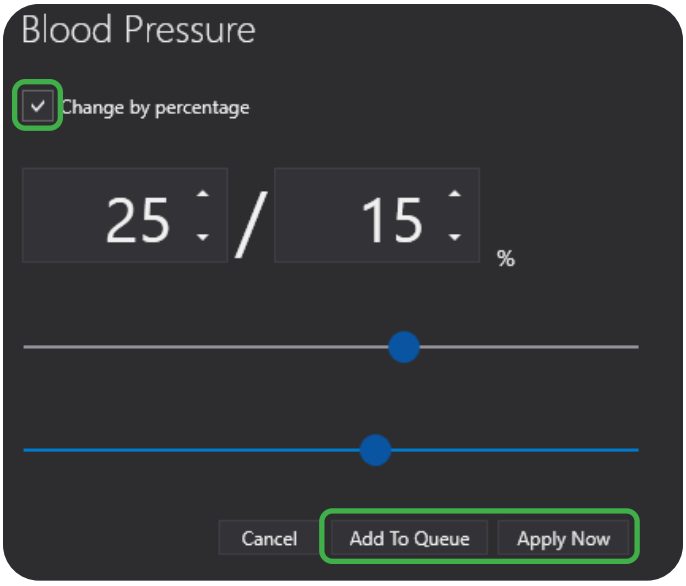


2. Enter a numeric value or adjust the slider bar to change SUSIE's systolic and diastolic Blood Pressure.

SUSIE's default blood pressure is 120/80 mmHg.



3. Check **Change by Percentage** to change the **Blood Pressure** by percentage rather than by units of pressure.



4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

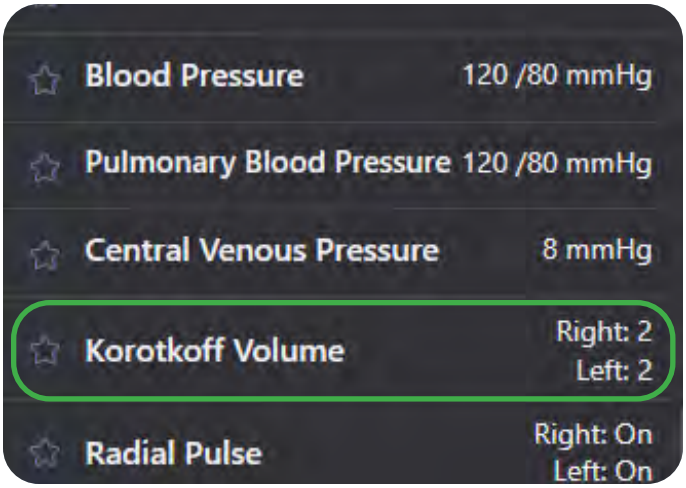
Korotkoff Volume

Korotkoff sounds are the "tapping" or "knocking" sounds heard with a stethoscope as the cuff deflates when taking blood pressure. These sounds are generated by the changing blood flow that happens as the cuff deflates and blood rushes through the artery.

SUSIE has the ability to simulate Korotkoff sounds when taking her blood pressure. The volume of these sounds can be controlled to assist with the assessment.

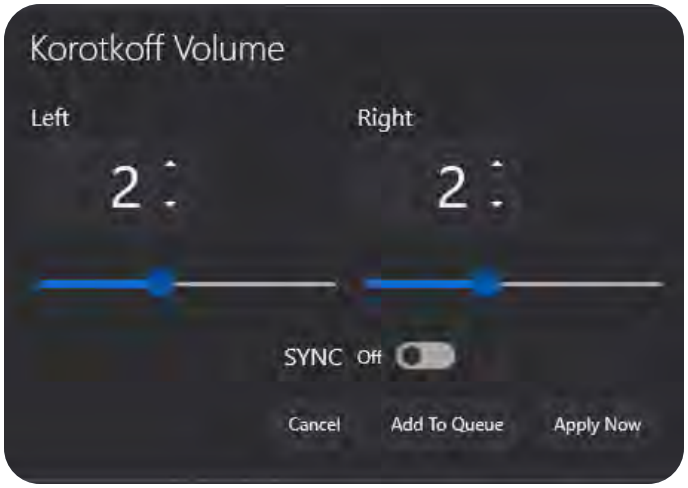
To change the Korotkoff volume level:

1. In UNI 3, under the **Circulation** section click **Korotkoff Volume.**



2. Enter a numeric value or adjust the slider bar to change the **Korotkoff Volume**.

3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

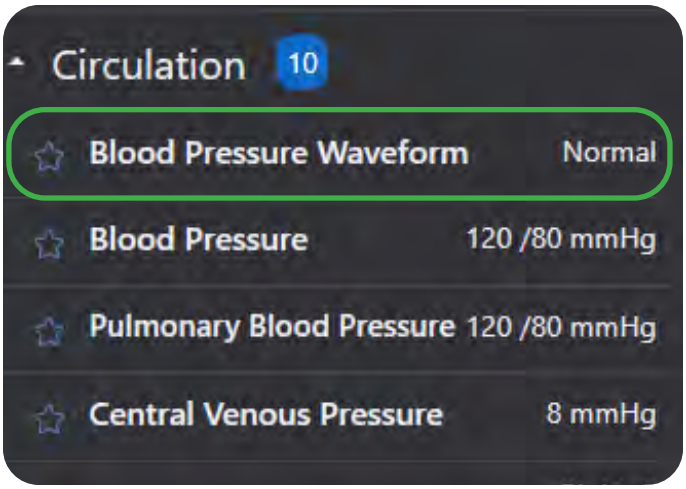


Blood Pressure Waveform

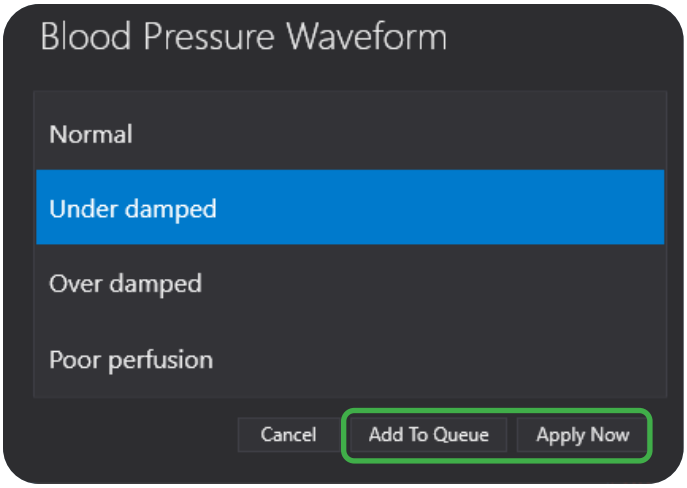
In UNI 3, **Blood Pressure Waveform** displays different ABP waveforms on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

To change the selection for the **Blood Pressure Waveform**:

1. In UNI 3, under the **Circulation** section click **Blood Pressure Waveform.**



2. Select from the available options.

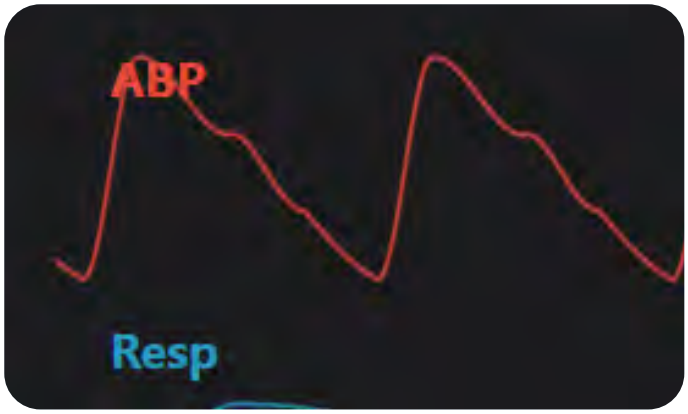


3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

When **Under damped** is selected for the **Blood Pressure Waveform** this is how the waveform is displayed:

When **Over damped** is selected for the **Blood Pressure Waveform** this is how the waveform is displayed:

When **Poor Perfusion** is selected for the **Blood Pressure Waveform** this is how the waveform is displayed:

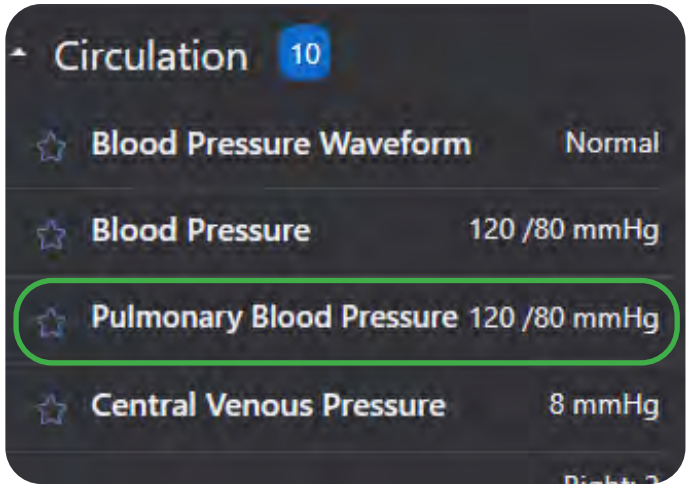


Pulmonary Blood Pressure & Central Venous Pressure

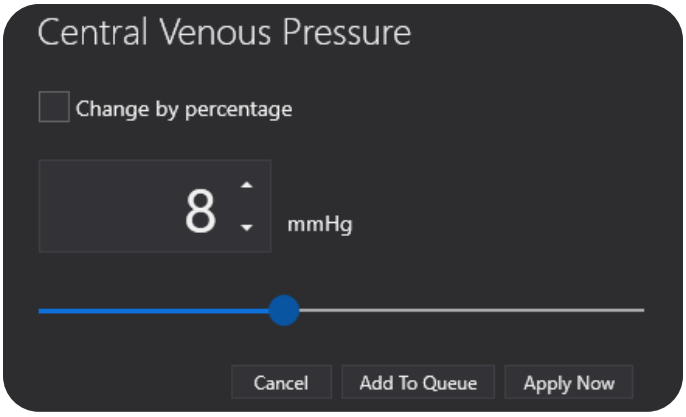
Pulmonary Blood Pressure and **Central Venous Pressure** are virtual values that can be changed to affect SUSIE's EtCO2 waveform on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

To change the level of these pressures:

1. In UNI 3, under the **Circulation** section click **Pulmonary Blood Pressure** or **Central Venous Pressure.**

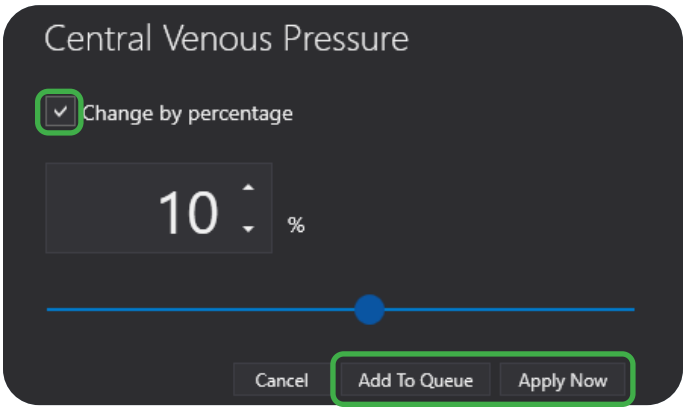


2. Enter the numeric value or use the slider bar to change the level of the pressure.



3. Check **Change by Percentage** to change the **Blood Pressure** by percentage rather than by units of pressure.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.7.3. IV Arm

SUSIE has both a Drug Recognition right arm and bilateral IV arms. SUSIE's IV arms provide excellent practice for performing IV infusions, blood draws, simulating bulging veins, and simulating collapsed veins. It is best practice to prime the IV arm for infusion exercises or to draw fluids and to always clean and purge the IV systems at the end of each simulation day.

SUSIE must be turned on when introducing fluids into the drug recognition arm. This includes calibration, purging, draining, IV infusion, and injecting. Introducing fluids into the drug recognition arm while the simulator is off will damage the arm and its drug recognition components.

To prime and use the IV arm for exercises:

1. Fill the Filling Syringe with either diluted Gaumard artificial blood concentrate or clean water and connect to an available port on the IV arm.

Use only diluted Gaumard's artificial blood concentrate or clean water to fill the vasculature of the IV arms. Any other simulated blood brand may contain sugar or other additives that may cause blockage of the vasculature system.

SUSIE has a right Drug Recognition arm and a left regular IV arm. The IV ports are color coded: **black** is the drainage port and **white** is the fill port. Read the following section on how to properly prime the IV for Drug Recognition.

2. Connect drainage hose to the other port on the IV arm.

For drainage purposes, the provider will likely want a receptacle to place the other end of the drainage hose into.

3. Push the fluid through the IV arm until fluid exits the drainage hose and air bubbles are not present.

To simulate bulging veins, clamp the drainage hose and push a little more fluid into the IV system - not excessively but just enough to plump the veins.

To simulate collapsed veins, at this step clamp the drainage hose and pull back on the filling syringe to remove a small amount of fluid from the IV system.

4. Disconnect the filling syringe.

Leave the drainage hose in place if performing infusion exercises so that the infused fluid can exit the system. Failure to leave the drainage hose in place while performing infusion exercises may burst the veins.

3.7.4. Drug Recognition

Train medication administration and management to improve patient safety with SUSIE's drug recognition system!

SUSIE has drug recognition sensors integrated into her right arm and is also supplied with 20 syringes that can be programmed for specific drugs. This drug recognition system works together to detect medication type, concentration, and dose when they are administered.

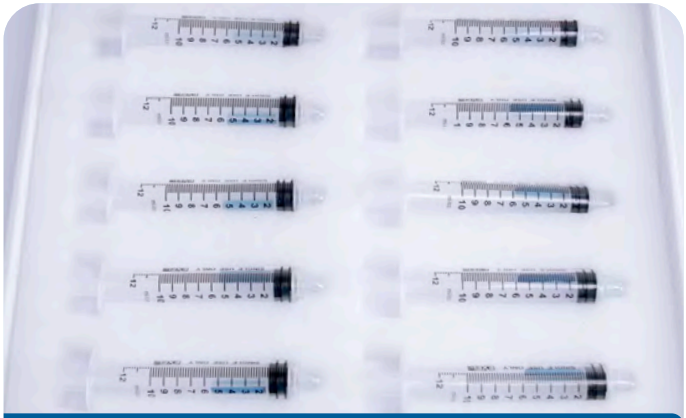
The drug recognition is located on the right arm.

SUSIE must be turned on when introducing fluids into the drug recognition arm. This includes calibration, purging, draining, IV infusion, and injecting. Introducing fluids into the drug recognition arm while the simulator is off will damage the arm and its drug recognition components.

The drug recognition arm has a black drainage port and a white filling port. Do NOT reverse the ports while introducing fluids into the system.

SUSIE's drug recognition arm needs to be primed before being used during simulation so that it can perform accurate volume readings.

Automatric Drug Recognition Syringes - Box 1



Automatric Drug Recognition Syringes - Box 2

Priming the Drug Recognition Arm

The drug recognition sensors are active only when fluid is present in the system. Prime the Drug Recognition arm by filling the system with fluid, be it clean water or diluted Gaumard artificial blood concentrate. This process should be done before simulation begins so that the system is ready.

To prime the drug recognition arm for infusion exercises:

1. Be sure that the simulator is turned on and connected to UNI.

2. Attach the drain tube to the black drainage port on the right lower arm.

Place the open end of the drain into a waste collection container.

3. Fill the filling syringe with clean water or diluted Gaumard artificial blood concentrate and connect the syringe to the white port on the right lower arm.

4. Push the fluid into the system until fluid exits the drain and there are no air bubbles appearing.

Once this process is complete and a drug is programmed into UNI, SUSIE is now prepared for infusion exercises into the bilateral IV arms.

Programming the Drug Recognition Syringes

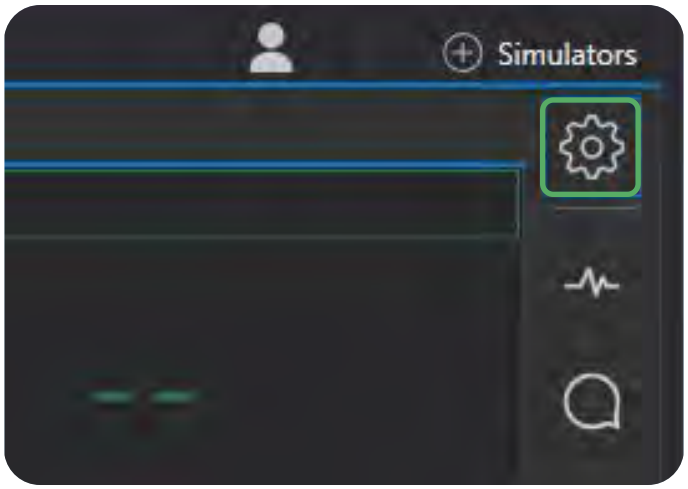
SUSIE's accessories include 2 packages, each with 10 Drug Recognition syringes and a syringe programming holder. These items, along with UNI 3 and SUSIE, are needed to successfully program the Drug Recognition syringes to a drug that has already been pre-programmed in UNI or to a custom programmed drug.

To program a Drug Recognition Syringe:

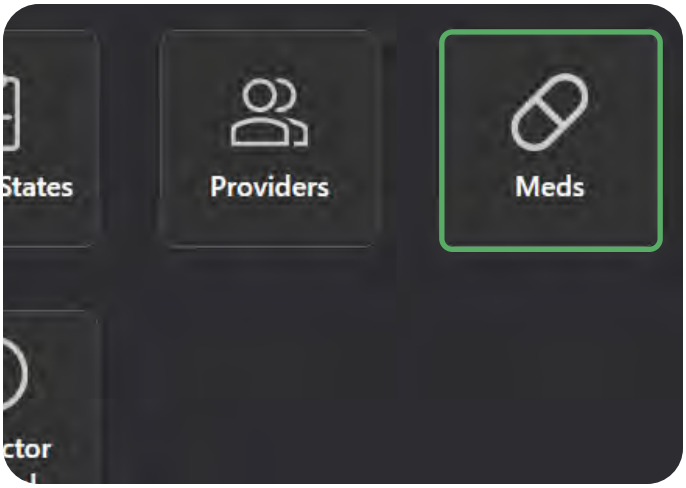
1. Be sure that the simulator is turned on and connected to UNI.

2. Attach the syringe programming holder to the right wrist of SUSIE.

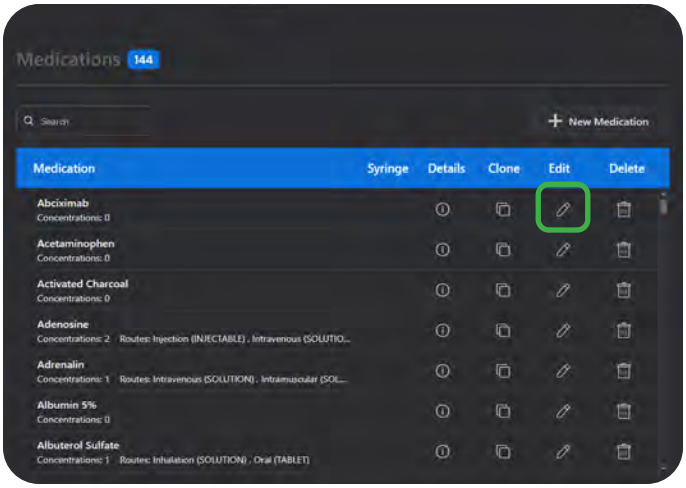
3. In UNI, click the **Settings** icon.



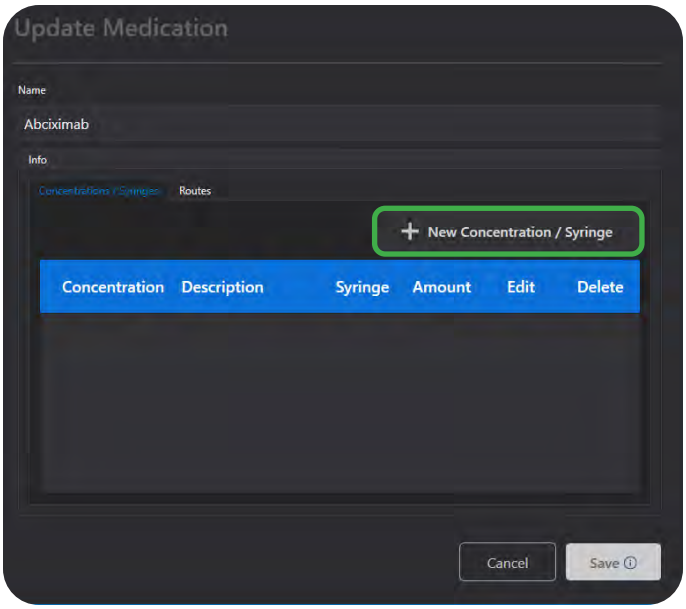
4. Click the **Meds** button.



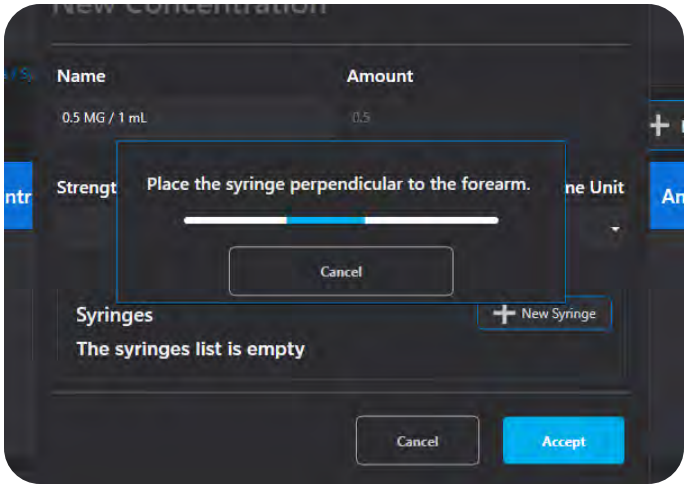
5. Click the **Edit** icon on the **Medication** that will be assigned to the drug recognition syringe.



6. Click **+ New Concentration/Syringe**.

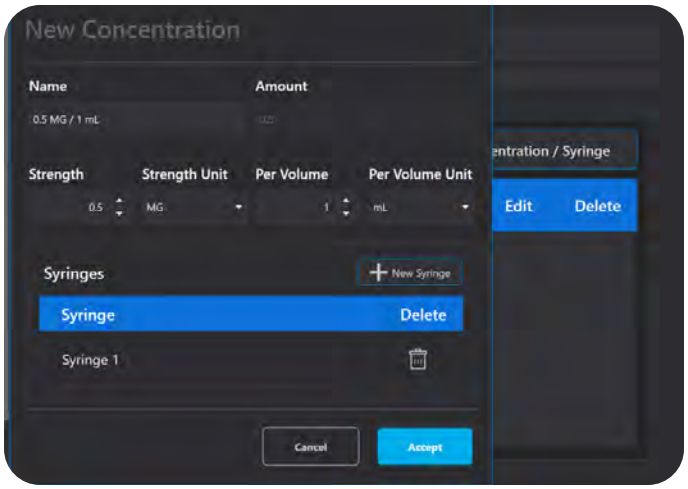


7. Place a drug recognition syringe perpendicular to the forearm.



While the syringe is in the **Syringe Programming Holder**, this orients the syringe perpendicular to the drug recognition arm. Once the drug recognition syringe is perpendicular to the wrist, UNI receives this feedback and allows the user to program a Medication name to the syringe.

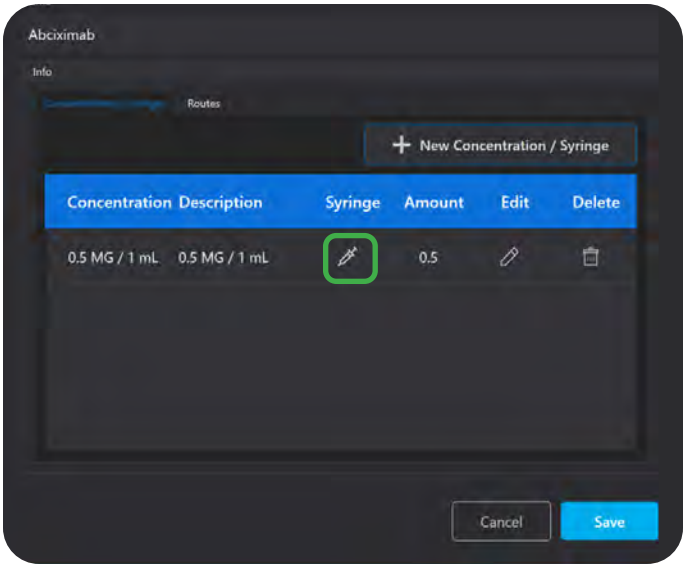
8. Once UNI 3 detects a signal from the drug recognition syringe placed perpendicular to SUSIE's arm, it will program it and add it to the **Syringes** list.



The syringes remain programmed unless the medication properties are deleted manually and reprogrammed using this process.

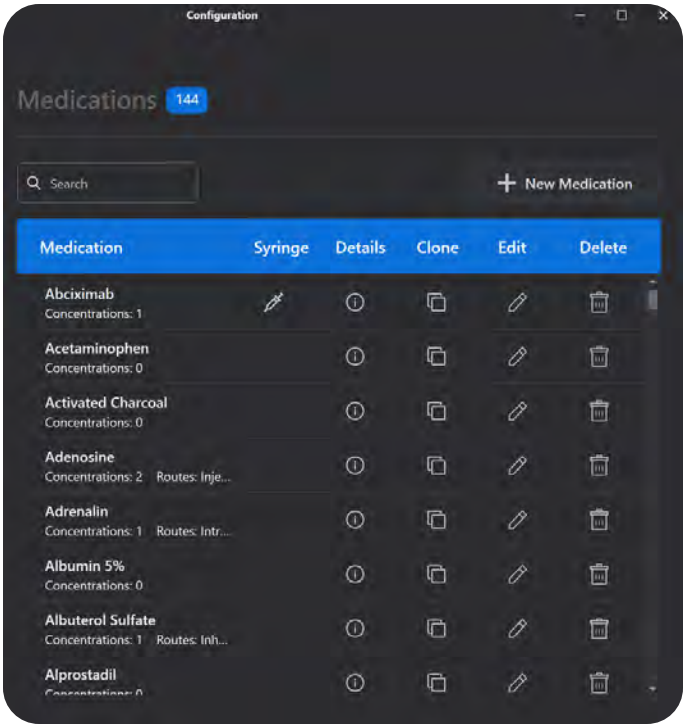
9. Click **Accept**.

When a drug recognition syringe is programmed to a Medication, the information line will update to display a **Syringe** icon.



10. Click **Save**.

In the main **Medications** list, all drug recognition syringes that are programmed to a **Medication** will have a **Syringe** icon displayed next to the **Medication** name.



3.7.5. Temperature, Blood Glucose, & Capillary Refill Time

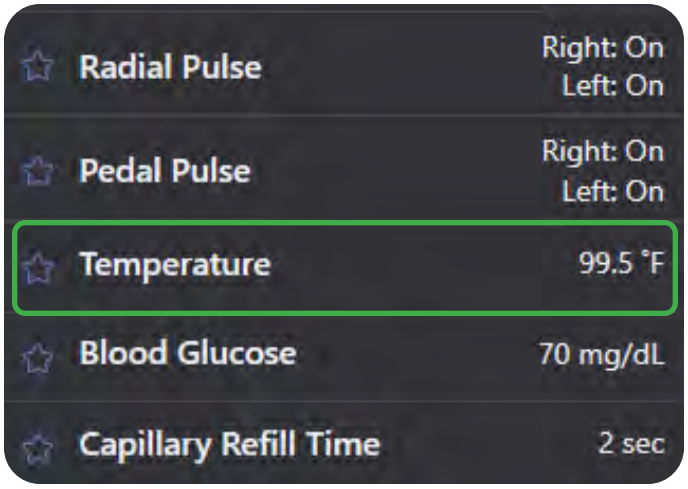
SUSIE contains a few other circulation vitals such as temperature, blood glucose, and capillary refill time that are virtual. This means that these vitals will appear in UNI 3 and can be controlled on the software but there is no physical feature on the simulator. These virtual vitals are still great tools that can be used and seen on an accompanying Gaumard Vitals bedside virtual monitor.

Temperature

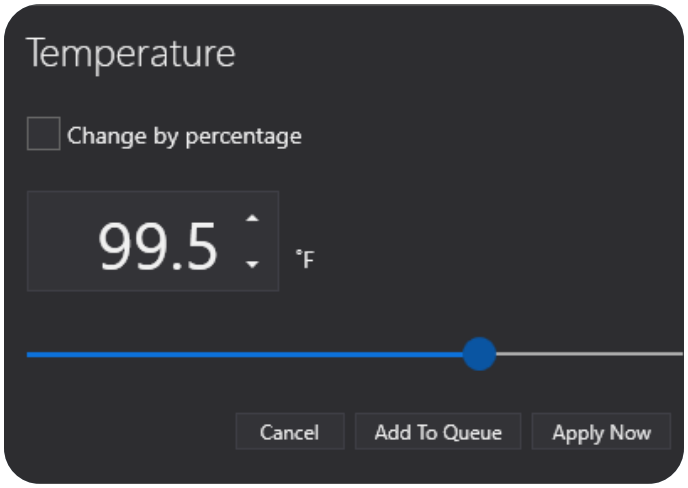
The human body's temperature is a crucial aspect of its functioning and overall health. Maintaining an optimal temperature is essential for the body to perform its various physiological processes efficiently.

To manipulate SUSIE's virtual temperature to simulate different health conditions:

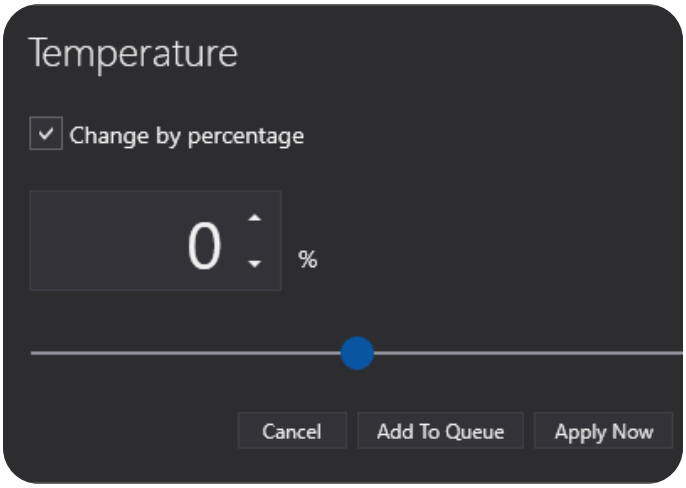
1. Under the **Circulation** section, click **Temperature.**



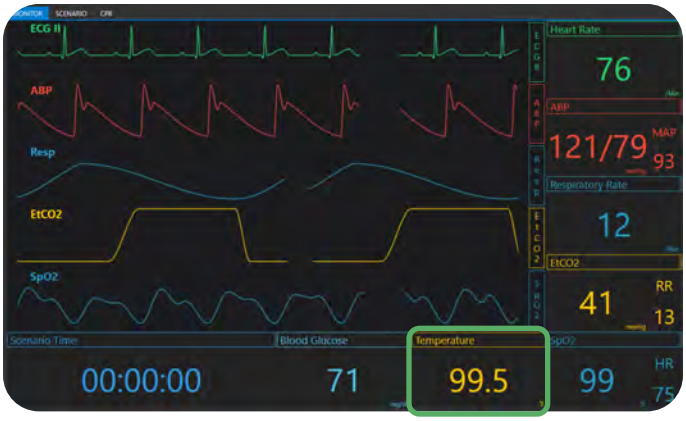
2. Enter the numeric value or use the slider bar to change the level of the pressure.



3. Check **Change by Percentage** to change the **Temperature** by percentage rather than by units of degrees.



4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

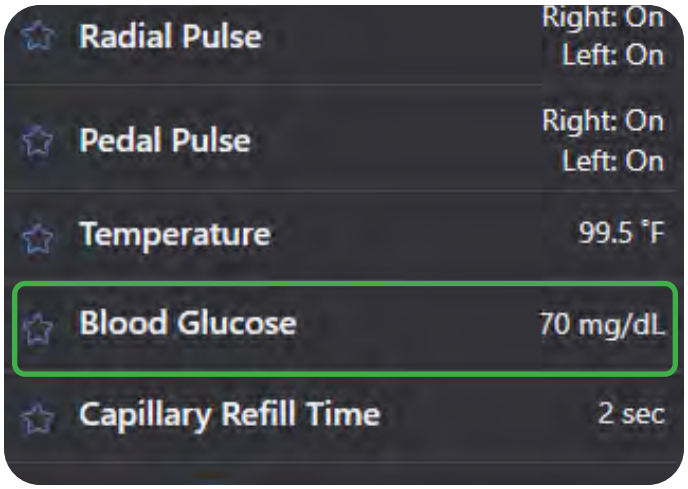


Blood Glucose

The Blood Glucose control in UNI 3 is only a virtual vital that may be displayed on the Monitor tab within UNI and/or on the Bedside Virtual Monitor (option available for purchase).

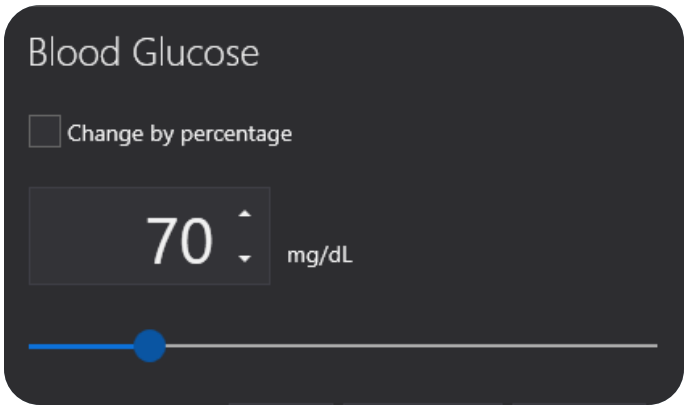
To change SUSIE's virtual Blood Glucose reading:

1. In UNI 3, under the **Circulation** section click **Blood Glucose.**

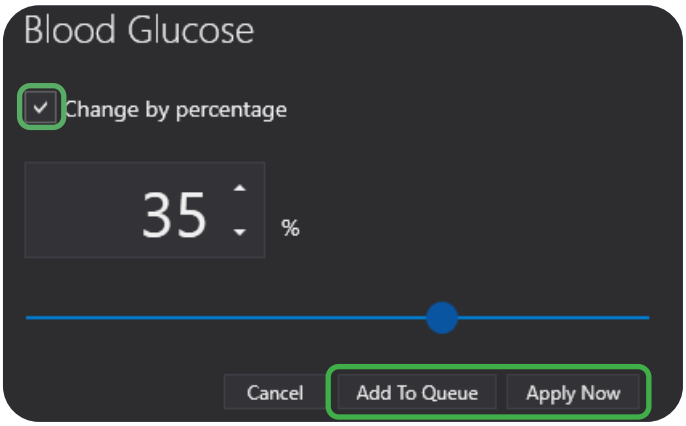


2. Enter a numeric value or adjust the slider bar to change the value of the **Blood Glucose**.

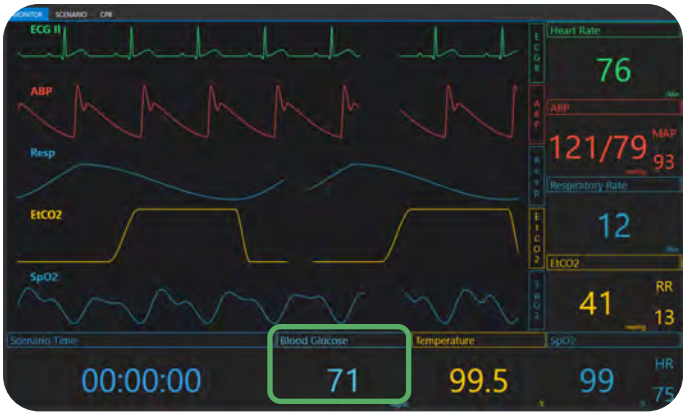
3. Check **Change by Percentage** to change the **Blood Glucose** by percentage rather than by units of volume.



4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



The Blood Glucose value can be selected to appear on the Monitor within UNI or on a Bedside Virtual Monitor (option available for purchase).



Blood Glucose Left Middle Finger

In addition to the Blood Glucose control in UNI 3, SUSIE has a removable Blood Glucose Left Middle Finger. The tip of the finger can be detached from SUSIE's hand and manually filled with a glucose solution (3 different Gaumard glucose solutions are provided) to simulate glucometer procedures.

To fill SUSIE's Blood Glucose finger:

1. Select the glucose level from the 3 provided bottles.

2. Remove the left middle finger.

3. Remove cap from small hexagonal wrench.

4. Unscrew the metal tip.

5. Fill the syringe with fluid from the desired simulated glucose bottle.

6. Fill the finger with 1 mL of fluid.

7. Screw in the metal tip and reattach the finger.

SUSIE is now ready for glucometer procedures on the left hand!

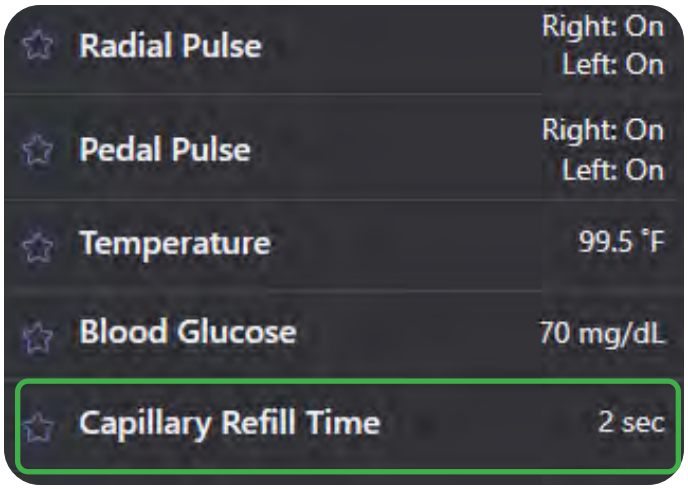
Capillary Refill Time

Capillary Refill Time refers to the time taken for a distal capillary to regain its normal color after enough pressure has been applied to turn the nail bed white, or "blanched."

Capillary Refill Time is a virtual vital for SUSIE. The theoretical time taken for SUSIE's nail bed to regain her normal color may be controlled through UNI 3.

To adjust SUSIE's capillary refill time:

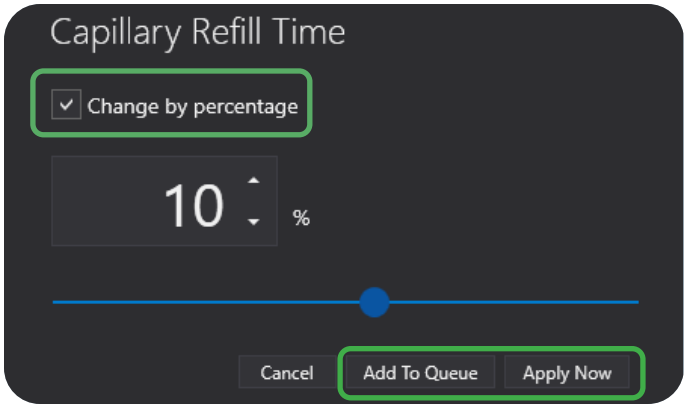
1. In UNI 3, under the **Circulation** section click **Capillary Refill Time.**



2. Enter a numeric value or adjust the slider bar to change the **Capillary Refill Time**.

3. Check **Change by Percentage** to change the **Capillary Refill Time** by percentage rather than by units of time.

4. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.7.6. Central Venous Line

SUSIE has a subclavian Central Venous Line (CVL) insert located on the right side of her upper torso.

The subclavian CVL includes a pre-placed simulated catheter for sterile dressing changes, flushing, and simulated medication administration. SUSIE's CVL port can be connected and a continuous infusion can be administered.

To prime the CVL for exercises:

1. Locate the **Central Venous Line Filling kit** and **Insert**.

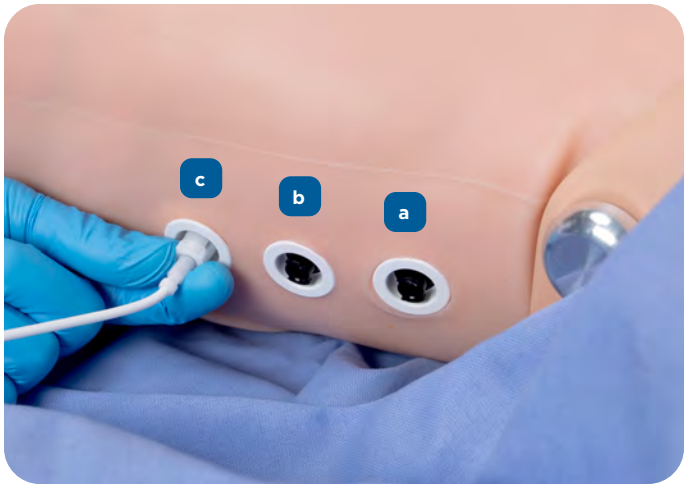
2. Fill the syringe with 15 mL of simulated blood and inject into the CVL insert.

In order to withdraw blood for sampling/ patency check, this needs to be done BEFORE flushing the site with 0.9% normal saline, otherwise the 15 cc of blood prefilled in the reservoir will be diluted.

The CVL is now ready for exercises!

To fill and drain the central line for CVL for exercises:

1. Locate the **Central Line Filling/Drainage Port** on SUSIE's right side upper torso.



a. Bladder Filling/Drainage Port
b. Central Line Filling/Drainage Port
c. CO_2 (Option) Connection Port

2. Insert filling syringe or drainage tube to the **Central Line FIlling/Drainage Port** for its corresponding use.

If liquid is passed through during a CVL exercise, insert the drainage tube into the CVL port and insert one end into a receptacle for fluid return.

3.7.7. Catheterization

SUSIE has female genitalia that may be catheterized. To set this up, fill the bladder before insertion of a catheter to ensure fluid return.

Filling the Bladder

To prepare SUSIE for catheterization, fill the bladder with diluted Gaumard artificial urine or clean water. SUSIE's bladder can hold up to 250 mL.

To fill the bladder:

1. Fill the Bladder Filling Syringe with fluid and connect it to the bladder filling/drainage port located on SUSIE's left lower torso.

   The Bladder filling/drainage port is the first from the top on SUSIE's left lower torso.

2. Fill the Bladder Reservoir up to 250 mL.

Catheterization

To catheterize SUSIE:

1. Lubricate a 16 Fr straight catheter.

Remember to always lubricate the catheter with the simulator's accompanying lubricant, **Mineral Oil**, prior to insertion. This will help the catheter to slide into the female genitalia smoothly and prevent skin tears.

2. Insert the lubricated catheter into the urethra until there is fluid return.

Removing the Female Genitalia

To remove the genitalia, it must first be separated from the uterus by unclasping the cervix.

1. Gently lift the abdominal cover.

2. Remove the inner abdominal pad.

3. Unlock the round ligaments from the left side of the uterus.

4. Unlock the round ligaments from the right side of the uterus.

5. Gently twist the uterus counter-clockwise to unfasten it from the cervix.

6. Set the uterus aside.

The vagina is now free to be removed!

7. Remove the vagina.

Male Genitalia (Optional)

As an option, SUSIE has full interchangeable male and female genitalia.

To install the Male Genitalia:

1. Obtain the Male Genitalia and align the fluid connector to the urine port on SUSIE's pelvis.

> Be sure that the white fluid connector slides into the urine port. If the fluid connector is not properly inserted, there may not be any fluid return when catheterizing SUSIE.

2. Press on the top and bottom of the Male Genitalia to secure the Velcro to the simulator.

Male Genitalia Interchangeable Testes (Optional)

SUSIE's optional male genitalia contains two sets of interchangeable testes (two are healthy and two have tumors).

To insert:

1. Gather the desired testes for insertion.

2. From the backside of the male genitalia, slide them into the testicle pocket.

3. Install the male genitalia as seen in the previous section.

Male Genitalia Catheterization (Optional)

With the male genitalia installed, SUSIE is still capable of performing urinary catheterization with a 16 Fr catheter.

To catheterize:

1. Lubricate a 16 Fr catheter with Gaumard mineral oil.

2. Insert the lubricated catheter for fluid return.

Ensure the catheter fits flush in the genitalia. If there is too much space, the liquids may leak.

3.7.8. Intramuscular (IM) & Subcutaneous (Sub-Q) sites

Intramuscular Sites (IM)

SUSIE has bilateral quadriceps and buttocks for intramuscular injection sites.

The bilateral intramuscular sites are for needle placement ONLY. Do not inject fluids into the IM sites as there is no cleaning procedure for this.

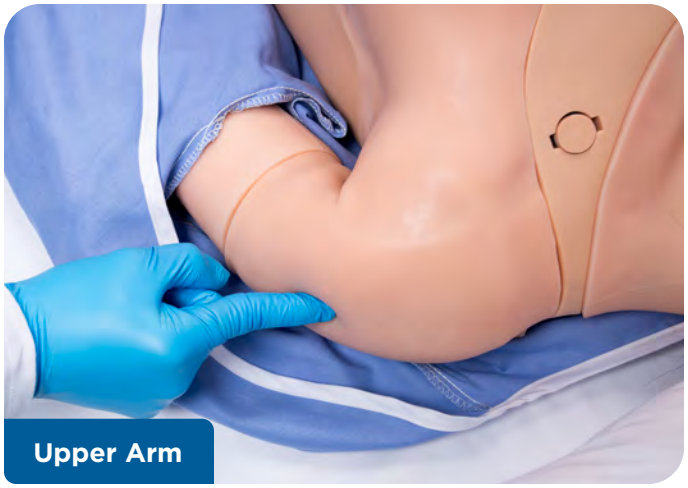

Quadricep


Buttocks

Subcutaneous Sites (Sub-Q)

SUSIE has bilateral upper arm subcutaneous injection sites.

The bilateral subcutaneous sites are for needle placement only. Do not inject fluids into the sub-Q sites as there is no cleaning procedure for this.


Upper Arm

3.8 GASTROINTESTINAL

3.8.1. Bowel Locations & Controls

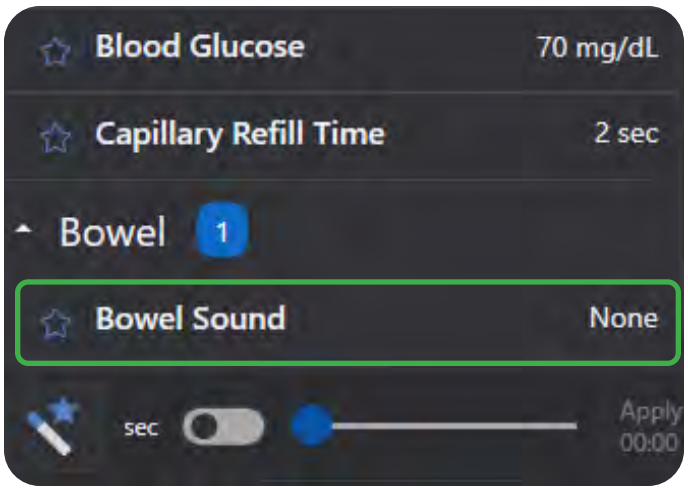
SUSIE has four quadrants dedicated to bowel sounds.

Bowel Controls

SUSIE has 4 distinct bowel sounds that includes **None**, **Normal**, **Hyperactive**, and **Borborygmus**.

To change the bowel sounds and adjust the bowel volumes on SUSIE:

1. In UNI 3, under the **Bowel** section click **Bowel Sound**.

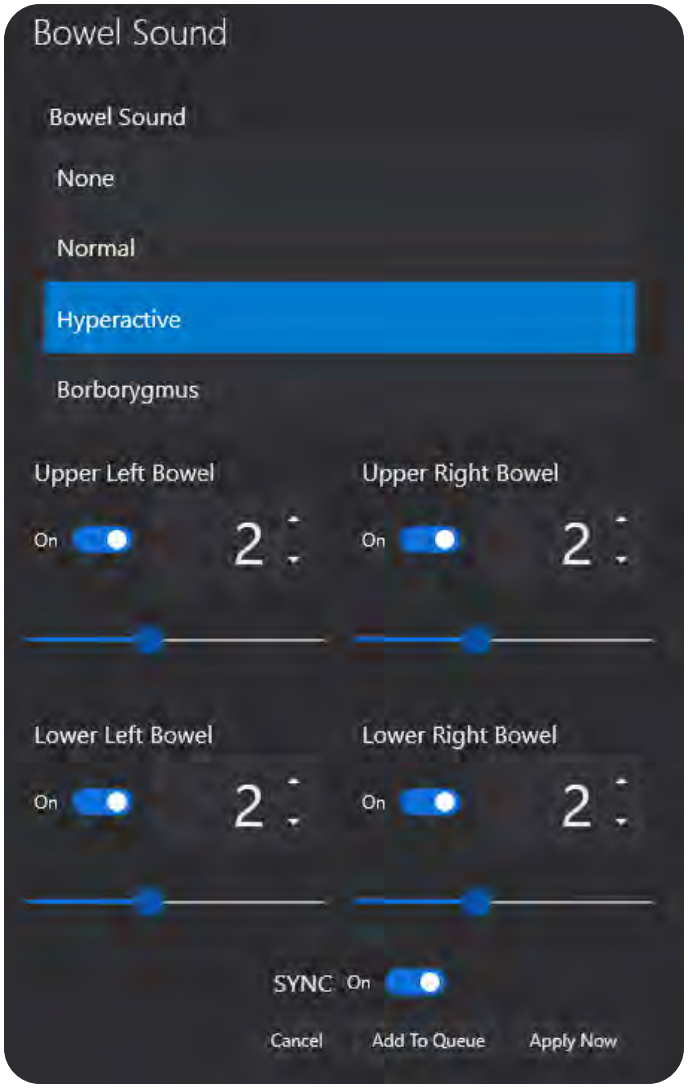


2. Select the desired bowel sound from the available options.

3. Click on the switch to turn the bowel sounds **ON** or **OFF** for that particular quadrant.

4. Enter the numeric level or use the slider bar to adjust the volume for each individual bowel quadrant.

5. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.



3.8.2. Enema

Enemas may be performed on SUSIE's patent rectum, which may hold up to 1L of fluid.

The enema needs to be held in place by the provider. If the seal breaks slightly, a strong stream of water will come out of the rectum.

Ensure that the insertion of the enema device passes the anal seal (duckbill).

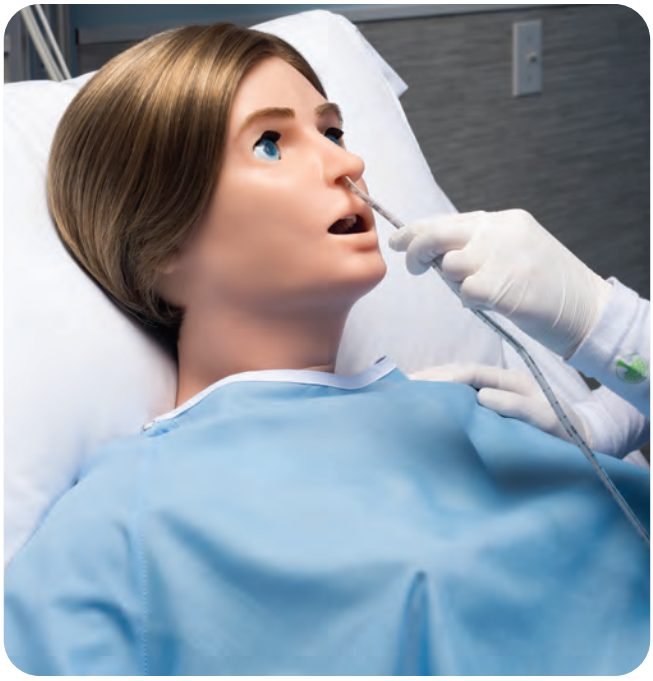
3.8.3. NG/OG Feeding

Before introducing fluids to SUSIE through a nasogastric (NG) tube, follow the steps below to prepare:

1. Place SUSIE on a 30° inclination angle or higher.

2. Lubricate the NG tube.

3. Insert the tube.



4. Wait until UNI logs the tube placement.

The tube placement can be seen when logged in the **Log** section on the UNI software.

Inserting fluids before the software logs the tube placement will void the warranty and can permanently damage the simulator.

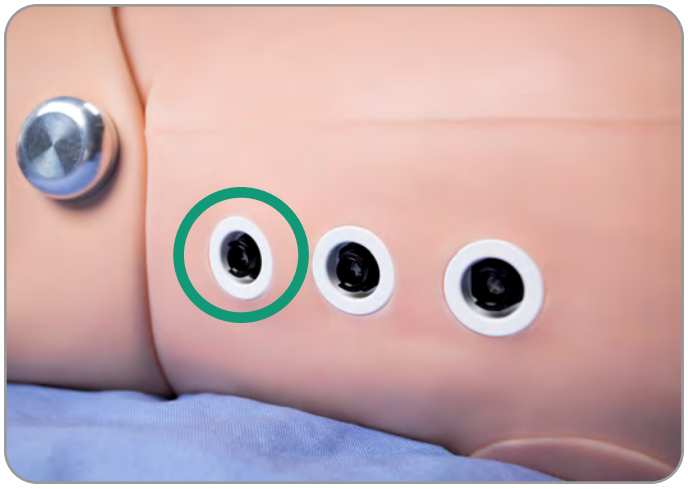
4. Inject fluid at a rate slower than 1 mL/s.

The stomach bag holds 1.5 L and the gastric reservoir holds 70 mL.

Cleaning the Stomach Bag

At the end of each simulation session, be sure to drain the contents of the stomach bag through the fill/ drainage port located on SUSIE's **RIGHT** lower torso.

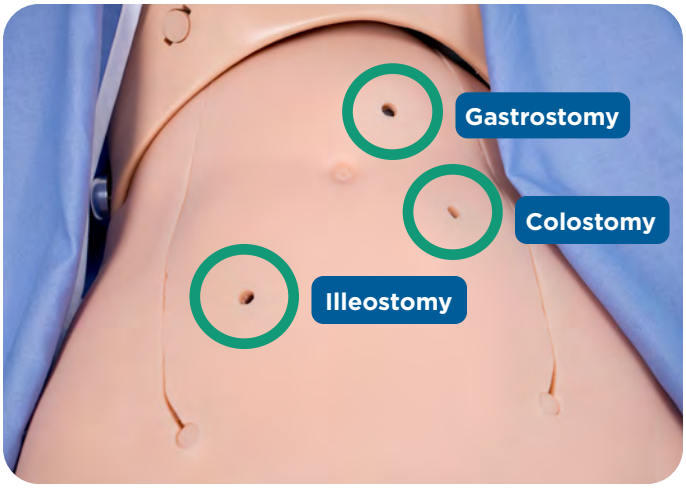
Clean the stomach bag by extracting the contents and then flushing the bag with a cleaning solution of 70% isopropyl alcohol.



3.8.4. Ostomy

SUSIE has 3 distinct ostomy sites:

- Ileostomy
- Colostomy
- Gastrostomy



Ileostomy

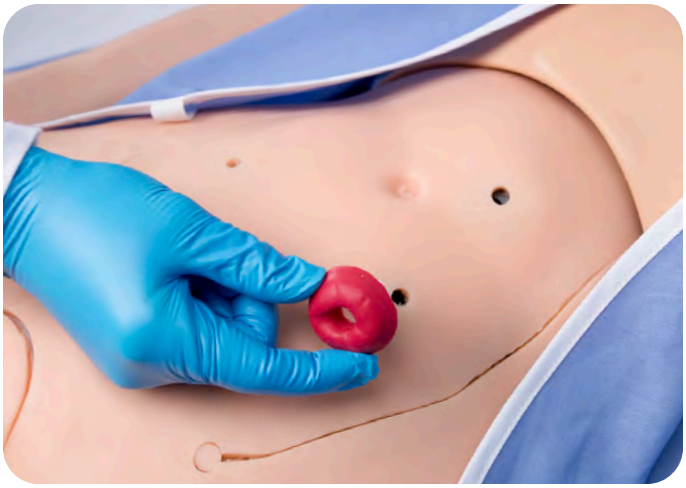
SUSIE's Ileostomy site is intended for nursing care procedures and cannot be irrigated.

SUSIE is provided with 2 sets of stomas that may be changed out to display a healthy or post-operative appearance. The healthy stoma displays a vibrant red whilst the post-op stoma displays a dull pinkish-red.

Colostomy

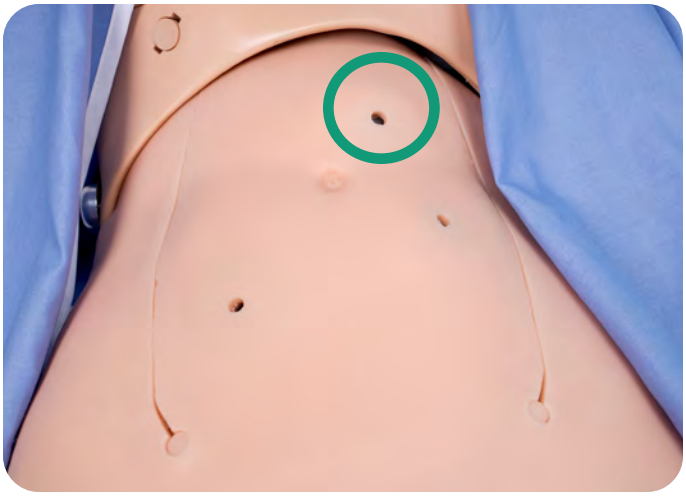
SUSIE's colostomy site is intended for nursing care procedures including the ability to perform irrigation exercises

SUSIE's colostomy bag holds 1.5 liters of fluid for irrigation purposes.



Gastrostomy

SUSIE's gastrostomy site is intended for nursing care procedures including the ability to introduce or remove fluids.



The gastric reservoir holds 70 mL.

With SUSIE, providers are able to check for placement and patency, aspirate stomach contents, and hear a “swoosh” sound when passing a small amount of air through the g-tube while utilizing a stethoscope to auscultate.

It is recommended to use gastrostomy tube sizes 18-22 Fr.

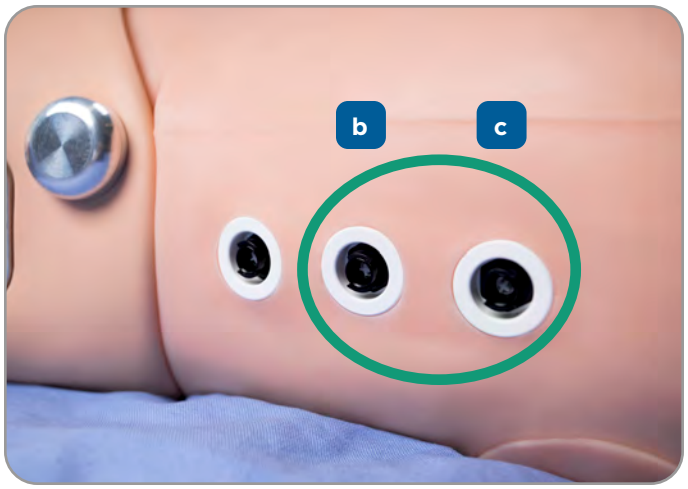
Cleaning the Colostomy & Gastrostomy bags

At the end of each simulation session, be sure to drain the contents of the colostomy and gastrostomy bags through the drainage ports located on SUSIE's right lower torso.

Clean the colostomy and gastrostomy bags by extracting the contents and then flushing the bag with a cleaning solution of 70% isopropyl alcohol.

b. Gastrostomy Drainage Port

c. Colostomy Drainage Port



3.9 BREAST EXAMINATION

SUSIE has excellent articulation! Both arms can be placed behind of the head to position for breast examination.

3.9.1. Right 1 (Normal breast)

3.9.2. Right 2 (Fibrocystic changes)

This breast represents (in a slightly exaggerated form) various stages of fibrocystic disease, which may be found in many normal women. There are six discreet fibrocystic nodes on the lower outer quadrant and a somewhat larger node on the upper inner quadrant. Two additional malignant tumors can also be palpated in the axilla region, resulting from enlarged lymph nodes.

The images provided show locations of some of the provided nodes.

3.9.3. Right 3 (Retracted nipple)

This breast shows a retracted nipple, and on careful palpation, a mass can be felt immediately under the nipple. The breast represents a carcinoma in one of the milk ducts.

3.9.4. Left 1 (Discrete benign nodes)

This breast shows one of the most common types of benign growths (fibroadenomas) for women under the age of 30. Three fibroadenomas varying in size from 10-16mm and an additional 20mm benign tumor are scattered around the breast.

3.9.5. Left 2 (Benign solitary mass)

There is a solitary tumor in this breast. It is well circumscribed and has a stalk. The tumor can be moved and is not adherent to the breast tissue. It is benign and usually occurs in younger women.

3.9.6. Left 3 (Giant Sarcoma)

This breast shows a comparatively rare but palpable tumor: a giant sarcoma (or giant mammary myxoma) of which the wildly growing masses can be easily felt. The giant sarcoma can be palpated in the lower outer quadrant, and the sarcomas, including a columnar mass, are scattered within the upper quadrants.

The images provided show locations of some of the provided nodes.

3.9.7. Left 4 (Schirrus Carcinoma)

This form of breast cancer (scirrhus carcinoma) is one of the more commonly encountered malignant tumors of the breast. When palpating, note the infiltrating nature of the growth. It has no well-defined borders and cannot be moved within the breast.

3.10 GYNECOLOGICAL PACKAGE

3.10.1. Gynecological Package Contents

SUSIE gynecological package includes realistic genitalia, cervix, and uteri that support:

- Bimanual pelvic exam
- Insertion of speculum and visualization of cervices
- PAP, douching, and sounding
- Placement and removal of the intrauterine device

SUSIE also has excellent hip articulation and can be placed in stirrups for examinations, cross her legs, or sit upright unassisted.

Interchangeable uteri & cervices	QTY
Anteverted Uterus	1
Retroverted Uterus	1
IUD Uterus (Installed)	1
6-8 Week Pregnant Uterus	1
10-12 Week Pregnant Uterus	1
20 Week Pregnant Uterus	1
Normal Cervix (1 Installed)	5
Abnormal Cervix	Set of 6
6-8 Week Pregnant Cervix	Set of 3
10-12 Week Pregnant Cervix	Set of 3

Uteri w/ External Pathologies Kit	QTY
Enlarged uterus	1
Small uterus	1
Uterus with moderate retroversion	1
Myomatous uterus	1
Uterus with left side salpingitis	1
Uterus with right side salpingitis	1
Severely anteverted-anteflexed uterus	1
Uterus with large ovarian cyst	1
Uterus with medium ovarian cyst	1
Bicornuate uterus	1

Uteri w/ Internal Pathologies	QTY
Normal anteverted uterus	1
Uterus with polyposis	1
Uterus with varied polyps	1
Uterus with hyperplasia	1
Myomatous uterus	1
Uterus with early carcinoma	1
Uterus with advanced carcinoma	1
Uterus with fundus carcinoma	1
Subseptate uterus	1

3.10.2. Remove/Change the Uterus and Cervix

To interchange the uterus and/or the cervix insert:

1. Gently lift the abdominal cover.

2. Remove the inner abdominal pad.

3. Unlock the round ligaments from the left side of the uterus.

4. Unlock the round ligaments from the right side of the uterus.

5. Gently twist the uterus counter-clockwise to unfasten it from the cervix.

6. Set the old uterus aside.

7. Remove the cervix through the vagina.

The vagina does not have to be taken off to remove the cervix. However, to clarify the purpose in this guide, the vagina is removed.

8. Insert a new cervix through the vagina and align the 4 white connectors.

The vagina does not have to be taken off to remove the cervix. However, to clarify the purpose in this guide, the vagina is removed.

9. Insert the new uterus and gently twist clockwise.

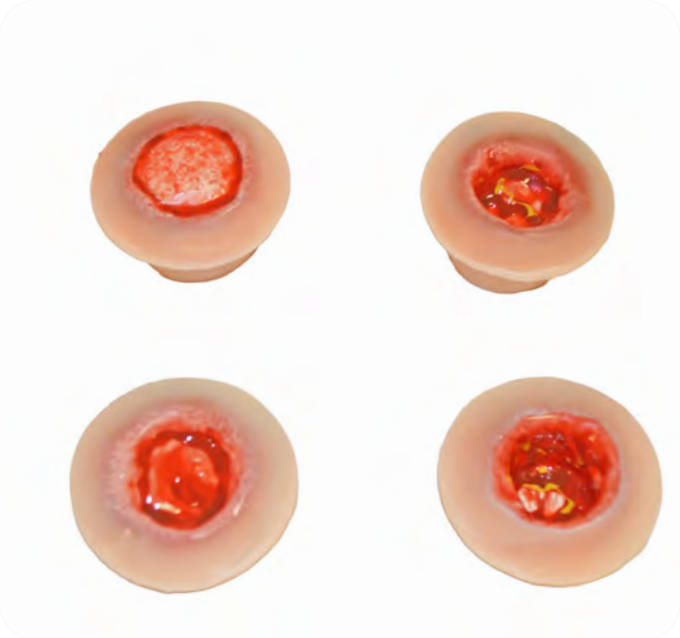
10. Hook the round ligaments on both sides back to the torso.

11. Reinsert the inner abdominal pad.

12. Velcro the lower torso skin back in place.

3.11 ULCERS

SUSIE has a set of 4 Decubitus Ulcers that may be switched out for the healthy inserts located in her buttocks. Additionally, SUSIE also has an Ulcerated Left Foot that may be switched out for the Healthy left foot.



Decubitus Ulcers

Switch out the healthy insert located in SUSIE's buttocks for a decubitus ulcer.

Ulcer

Ulcerated Left Foot

SUSIE is shipped with an ulcerated foot that can be easily installed. Follow the steps below to remove the healthy foot and replace it with an ulcerated foot.

1. Remove the ankle bolts on the left healthy foot with the provided hexagonal wrenches.

2. Pull out the red pulse line from the foot and disconnect.

3. Connect the red pulse line of the ulcerated foot to the leg.

4. Tuck the red pulse connector into the ulcerated foot.

5. Align the foot into the ankle and use the hexagonal wrench to tighten.

4. Working with UNI 3®

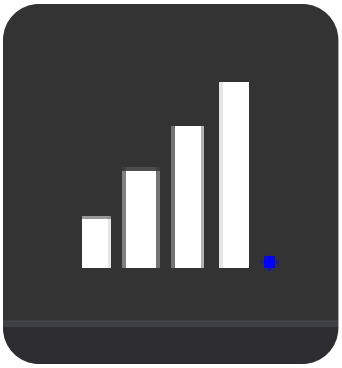
4.1 UNI® INTERFACE

The UNI 3 software is used to control the simulator, monitor the vital signs, and evaluate the provider's performance. The simulation technician or facilitator carrying out the simulation operates the UNI software.

The UNI control elements and scenario programming procedures are consistent throughout the Gaumard family of advanced fidelity simulators. Some software controls and features covered in this guide may be hidden depending on the simulator's hardware configuration and optional upgrade.

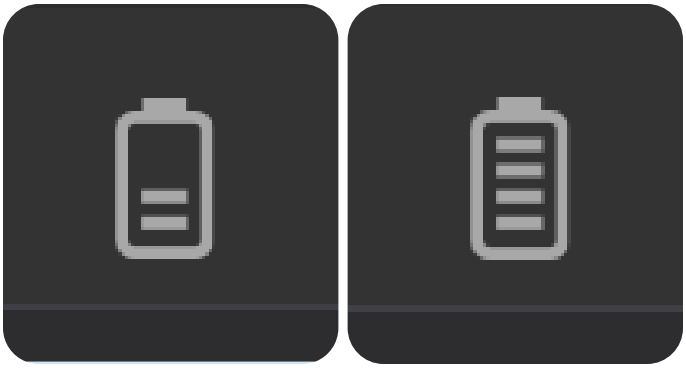
4.1.1. Connection Status

The communication indicator displays the status of the radio link between the tablet's Bluetooth feature/ USB RF module and the simulator. Full bars indicate excellent communication or normal operation.



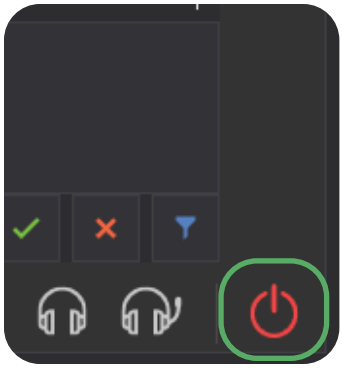
4.1.2. Battery Life Indicator

The battery indicator is located on the lower-left corner of the UNI software. The battery status indicator changes as the battery in the simulator is used; the less battery the simulator has, the less bars that will appear on the indicator.
When the battery is depleted, the simulator is set to STAND-BY mode automatically to protect the simulator's internal components. The simulator will not initialize until it has been recharged.



4.1.3. Power/Stand-by Button

The standby button is located on the bottom right corner of the UNI software. Use the stand-by feature to conserve battery.

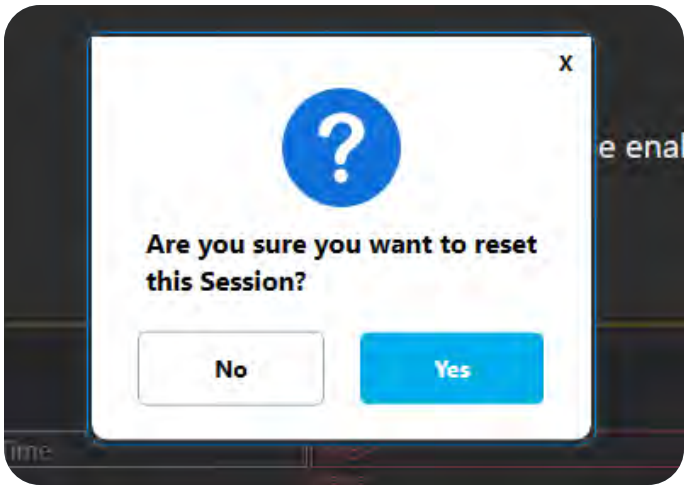


4.1.4. Session Clock

The session timer allows the facilitator to maintain a chronological record of individual simulation sessions. Events during the simulation are logged in accordance to the session time.

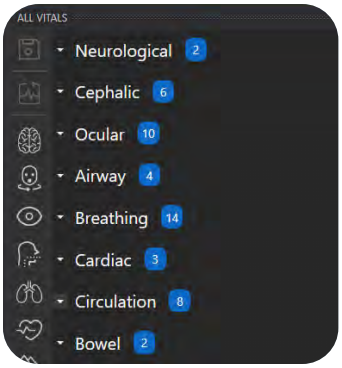
The session timer can be reset by right-clicking the session timer and selecting **Reset Session Clock**.

The session itself can also be reset by right-clicking the session timer and selecting **New Session**. Click **Yes** when the assurance prompt appears.



4.1.5. Systems List View

The vital section's are divided into separate categories.




Neurological


Cephalic


Ocular


Airway


Breathing

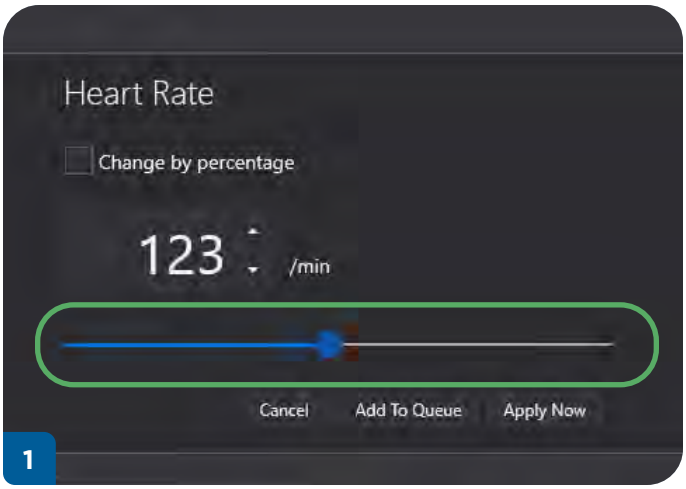

Cardiac


Circulation


Bowel

4.1.6. Changing Vital Signs

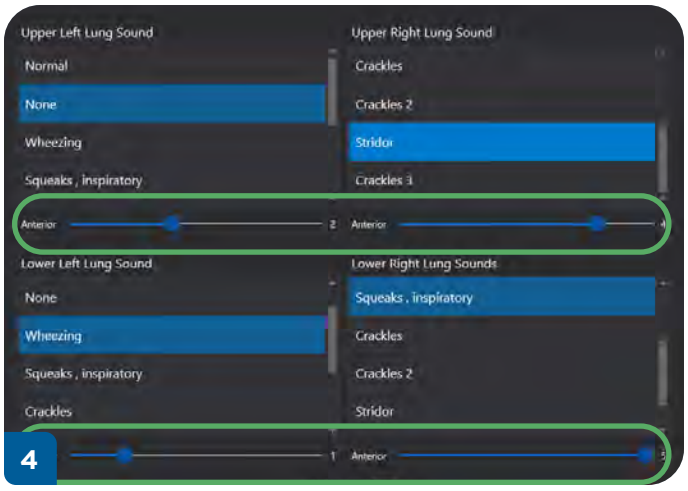
1. To adjust numerical values (e.g. heart rate, blood pressure, respiratory rate, etc.), click a vital and drag the slider control.



2. The facilitator may also use their keyboard for manual entry and click the green **Apply Now** to confirm the change.

3. To change patterns, sounds, and rhythms, click on the specific control to display the library (e.g. EKG rhythms, heart and lung sounds, respiratory patterns, etc.)

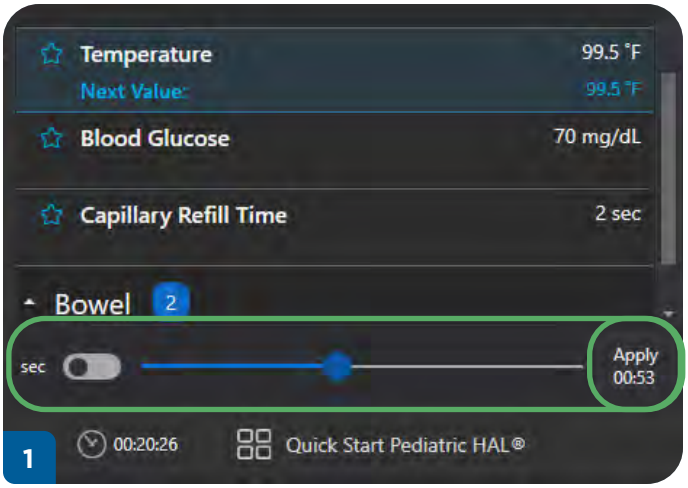
4. Click the slider control below the sound library to adjust the volume of the sounds.



4.1.7. Applying Changes

When applying the changes, it is important to note that no changes will be made to the simulator's condition until they are applied by clicking **Apply Now**. If the conditions are added to queue, then they must be applied at **Apply 00:00**, where the zeros represent the facilitator's chosen time.

1. Adjust the slider to decide on which time the changes will be applied. Then, on the right-hand side of the slider, select **Apply** on whichever time it was adjusted to.



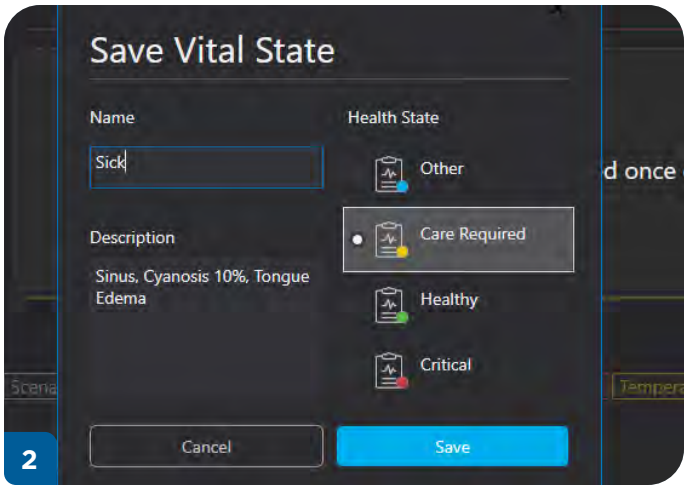
On the left-hand side of the slider is a box to check on seconds or minutes for when the conditions can be applied. The maximum amount of time for seconds is 2 minutes. The maximum amount of times for minutes is 59 minutes.

4.1.8. Creating Palette Items

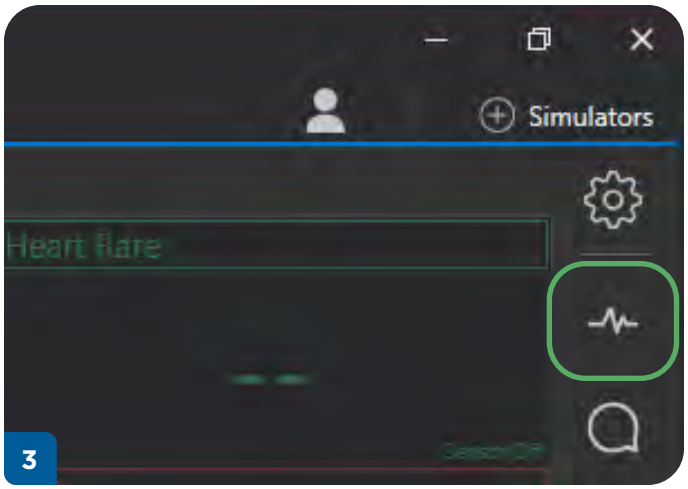
A palette item stores one or more vital sign settings into a single loadable object. Use a palette item to update a set of vital signs quickly. For example, one palette item can be created to update all the cardiac parameters to a healthy state.

1. To create a new palette item, set the values for the desired vital signs parameters and select the **Vital State menu** icon.

2. Enter a name for the palette, add a description, and choose a color code to refer to the Health State. Click **Save** to create the palette item



3. When the palette is needed, it can be searched for in the **Vital States** tab which can be found by clicking the **Vital States** icon.



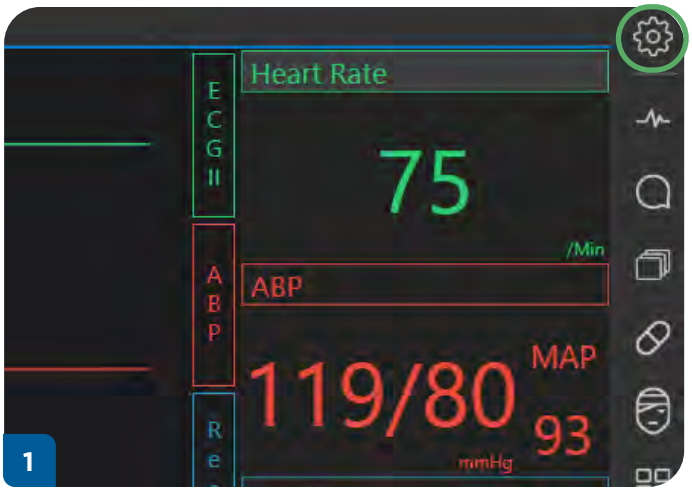
4.2 SCENARIOS

4.2.1. How to Create a Scenario

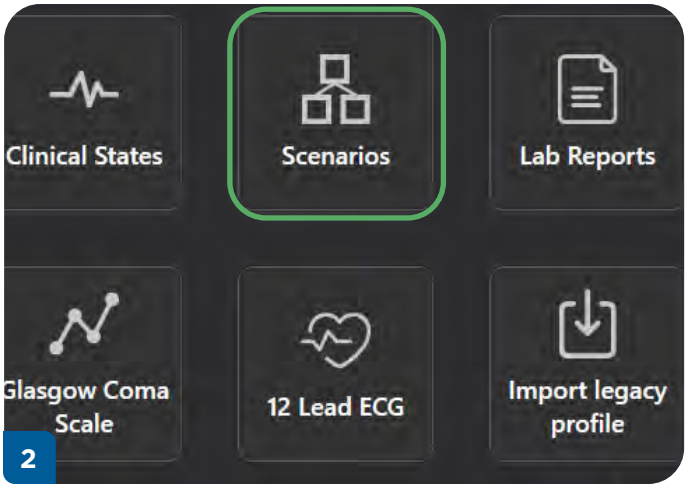
Create and apply scenarios in UNI to simulate a multitude of experiences! UNI has the capability to build a very simple, linear scenario to very complex, multi-path scenarios.

To create a simple, linear scenario:

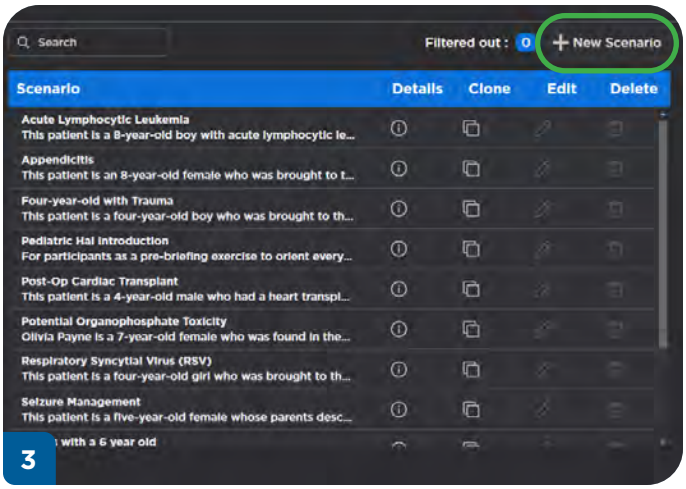
1. In UNI, click on the **Settings** icon in the upper right corner.



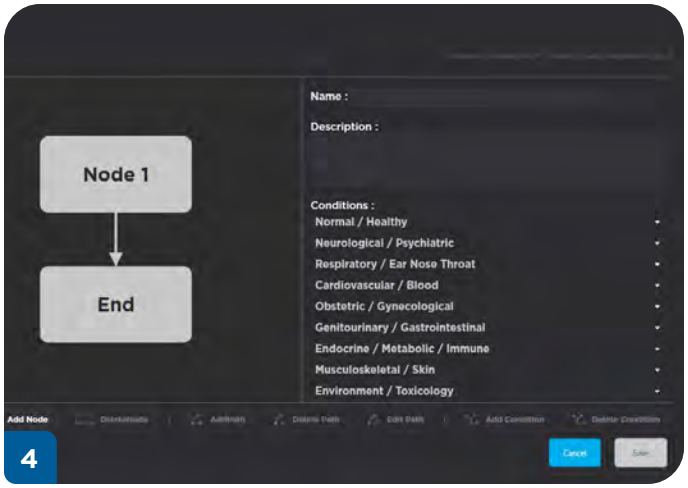
2. Under **Simulator Model**, click **Scenarios**.



3. Click **+ New Scenario**.

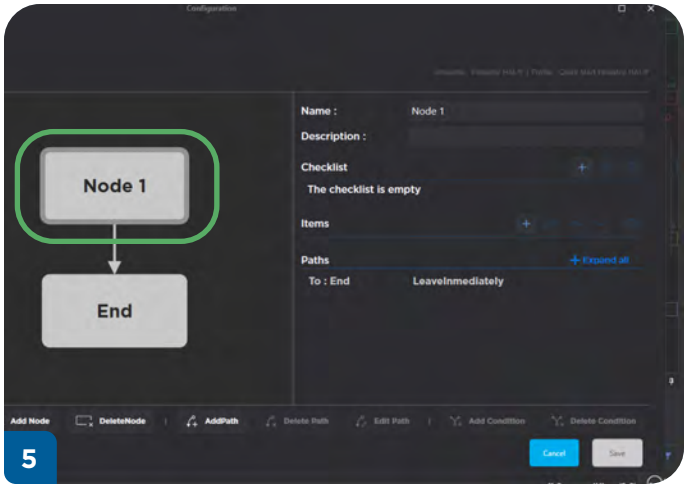


4. Give your scenario a **Name**, **Description**, and assign it a **Condition**.



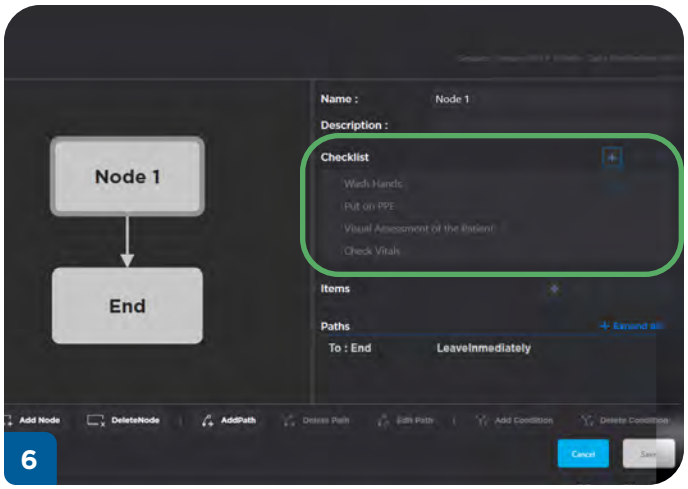
5. Click on **Node 1** to add information.

Nodes contain **Checklists**, **Items**, **Paths**, and **Conditions**.



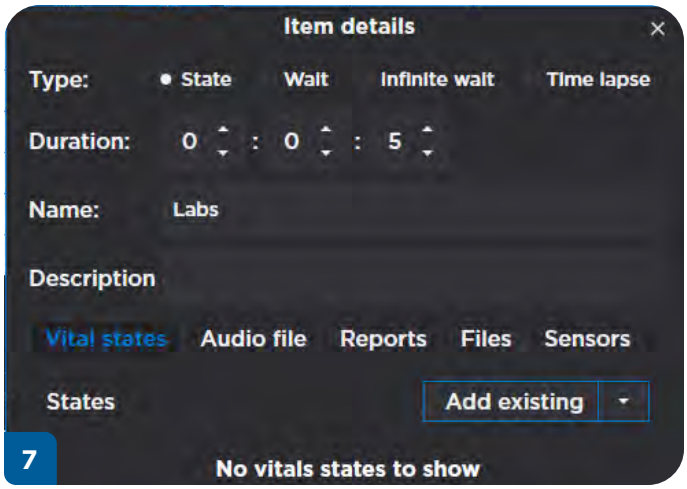
6. Click on the **Add Checklist +** icon to add a checklist to the **Node**.

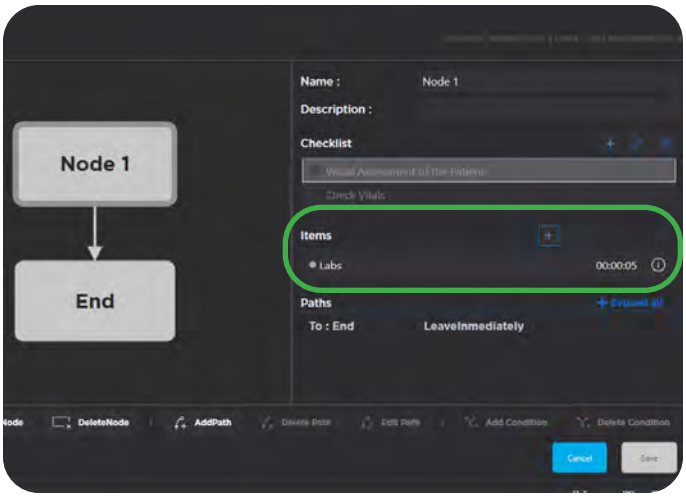
Checklists allow the user to create a list of actions or notes they would like to see participants do during the scenario. The checkboxes next to each entry allows the user to keep track of what the participants do or not.



7. Click on the **Add Item +** icon to add an item to the **Node**.

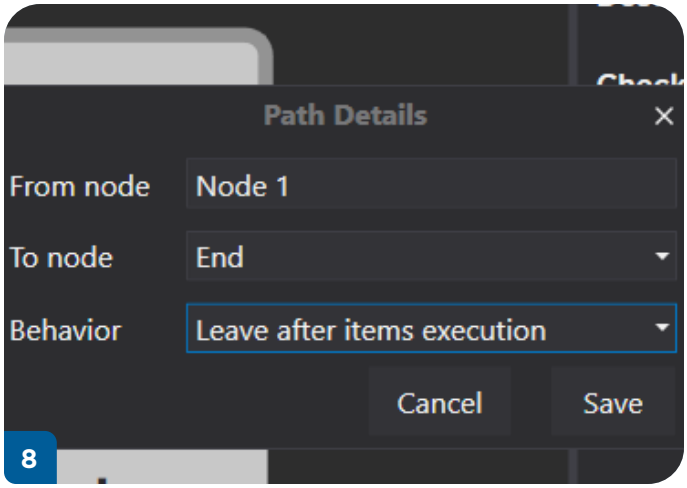
Items include **Visual States**, **Audio Files**, **Reports**, **Files**, and **Sensors**. All of these items can be created beforehand and then added to a scenario.

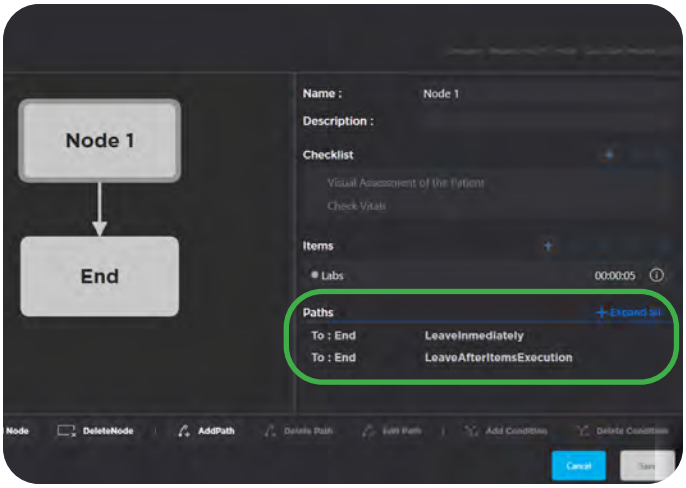




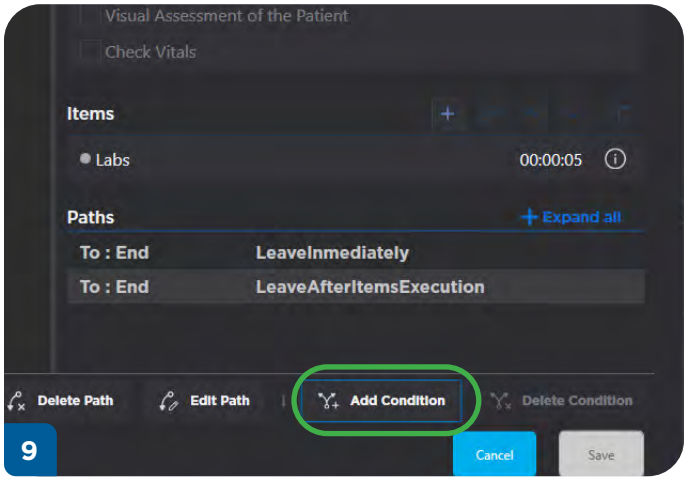
8. Click on the **Add Path +** icon to add a path to the **Node**.

A **Path** refers to the trajectory from one node to another after the last **Item** in a node plays. In this example, **Paths** can be used to tell **Node 1** to go to the **End**.

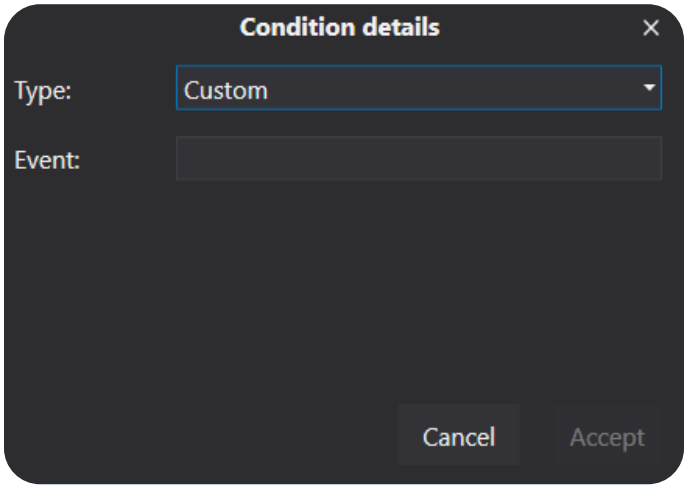




9. Click on a **Path** that has been added, then click the **Add Condition** icon to add a condition to the Node.



A **Condition** refers to the additional actions participants need to address before a **Node** finishes. This includes performing **Electrical Therapy**, administering **Medication**, performing **CPR**, packing or applying pressure to a **Trauma** site, opening an **Airway**, triggering a **Neurologic** pressure sensitive sites, and more.



10. Click **Save** to save changes to all the added information on your scenario.

4.2.2. How to Play a Scenario

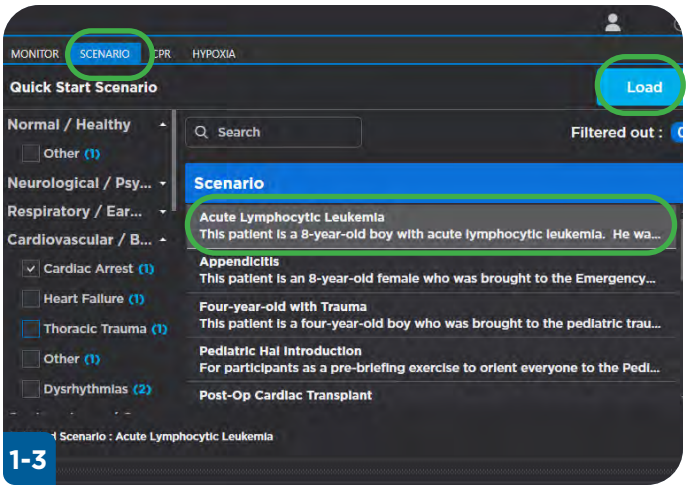
After creating a scenario the next step is to load and play it!

To load and play your scenario:

1. In UNI along the top toolbar, click the **Scenario** tab.

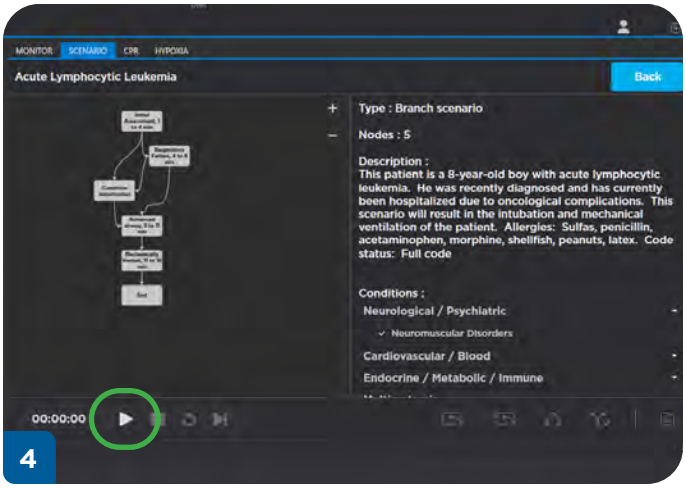
2. Select the desired scenario.

3. Click **Load**.



> **Select a System:** On the left-hand side, the kinds of scenarios are categorized by physiological systems to the left of the Quick Launch page; i.e. respiratory, cardiovascular, etc.

4. Click **Play**.



4.2.3. Simulated Learning Experiences (SLE)

SUSIE S2400 Simulated Learning Experiences (SLEs) package provides you with a library of ready-to-use, evidence-based scenarios designed to help maximize participant's learning through outcome-focused simulated clinical patient encounters. The package includes 12 SLEs complete with a facilitator's guidebook for planning, setting up, and facilitating each learning experience:

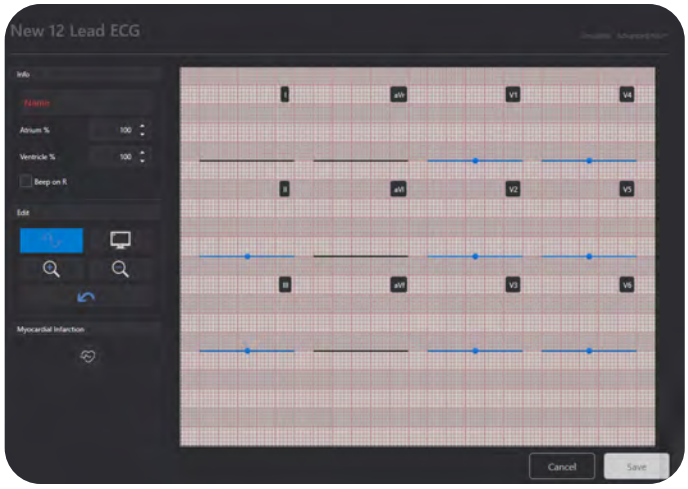
- Alcohol Withdrawal Syndrome
- Acute Work-Related Airflow Obstruction
- Bacterial Meningitis
- Central Line Maintenance
- Gastrostomy Tube Maintenance
- Postoperative Adult with Acute Asthma
- Postoperative Colostomy Care & Maintenance
- Diabetic Ketoacidosis
- Difficult Airway
- Fluid Electrolyte Imbalance
- Opioid Overdose Postoperatively
- Suspected Insulin Overdose

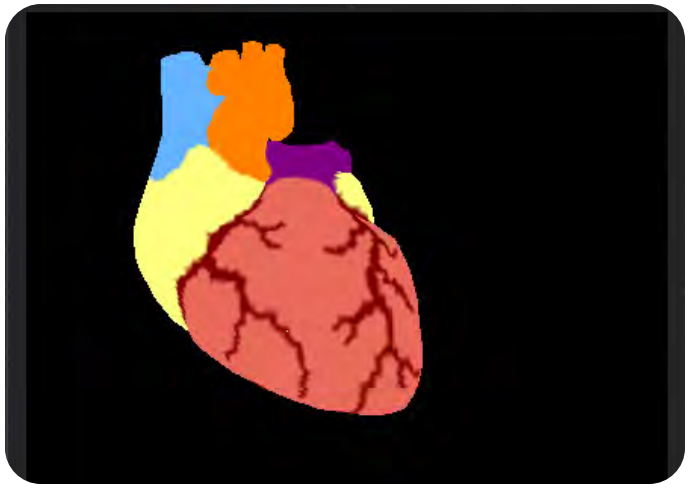
4.3 ECG DESIGNER & MYOCARDIAL INFARCTION MODEL

SUSIE S2400 is equipped with a 4 Lead Chest Skin, but has a 12 Lead ECG Pacer Module as standard, which allows her to work with UNI 3's 12 Lead ECG Designer.

The 12 Lead ECG Designer allows you to create your own ECG rhythms, select them in the UNI software, and display their waveforms on real medical monitoring equipment, the Monitor tab in UNI 3, or a Bedside Virtual Monitor (option available for purchase). All 12 Lead Chest Skins have the ability to use the ECG Designer in their UNI software.

Embedded in the 12 Lead ECG Designer, the Myocardial Infarction (MI) Model tool is used to assist in creating MI images and corresponding ECG rhythms.



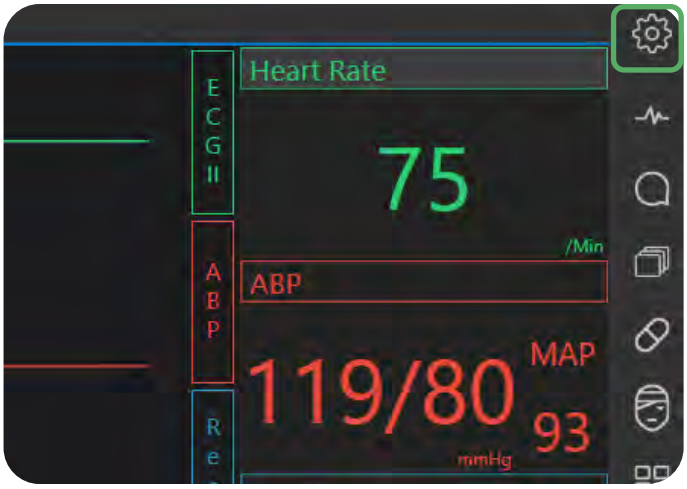


4.3.1. Access, Create, Save, & Load a Custom 12 Lead ECG

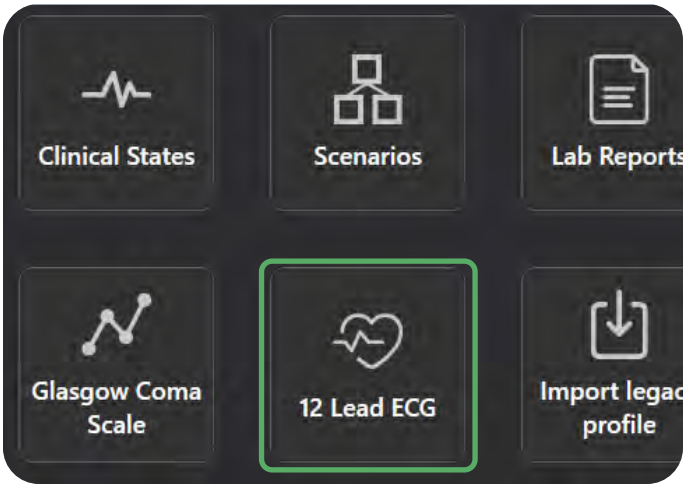
Access the 12 Lead ECG Designer

To open the 12 Lead ECG Designer:

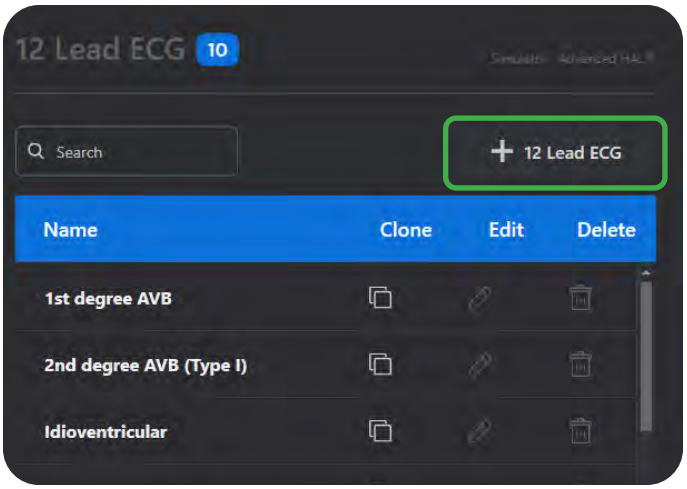
1. In UNI 3, click on the **Settings** icon in the upper right corner.



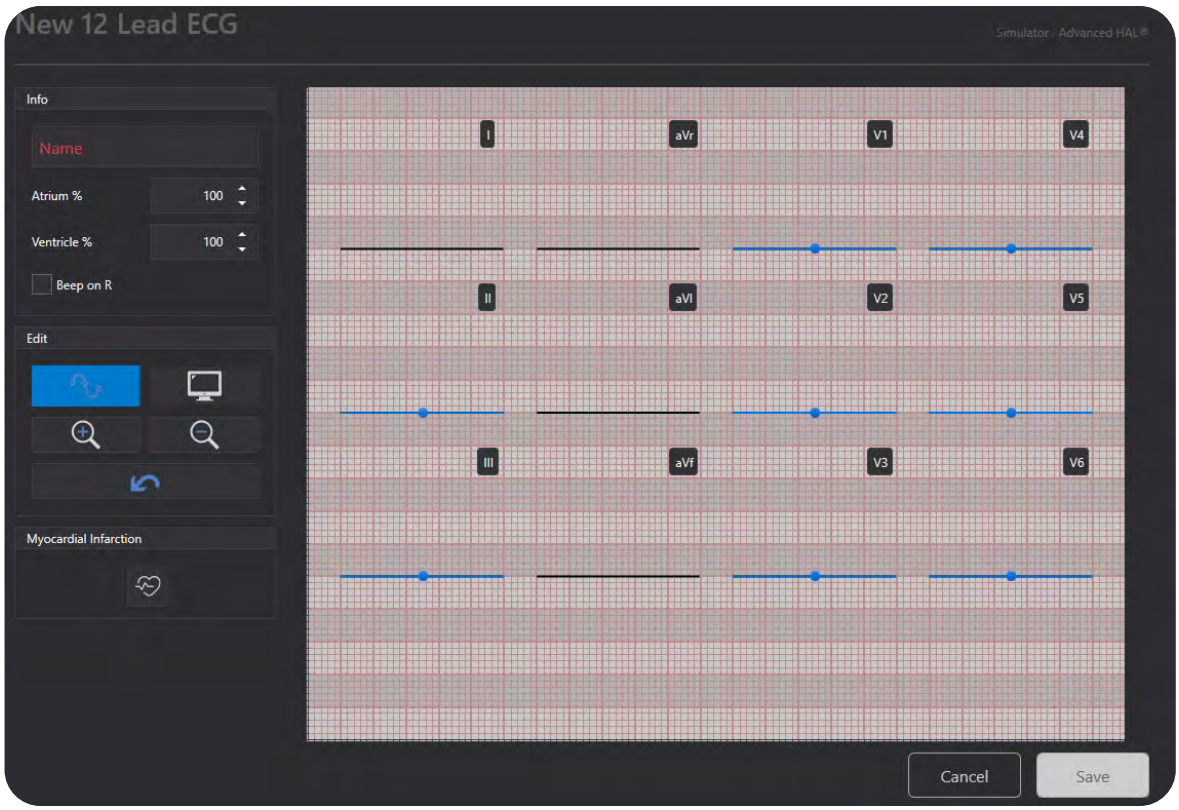
2. Under **Simulator Model**, click **12 Lead ECG**.



3. Click **+ New 12 Lead ECG.**



This will open the ECG Designer window where you may customize your own ECG.



Create a 12 Lead ECG

The ECG Designer opens with a set of flat lines in all waveforms. These flat lines can be adjusted to create new rhythms or existing rhythms can be loaded and edited. Whether creating a new ECG from scratch or editing a pre-existing rhythm they can all be saved and become part of the UNI ECG library.

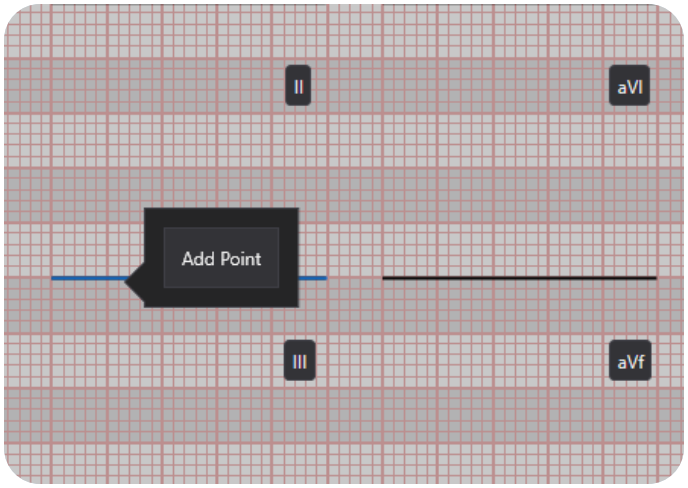
Rhythms drawn in the ECG Designer are assumed to be 60 beats per minute. Any morphology changes as a result of lower or higher rates will be automatically handled by the UNI software.

Waveforms I, aVR, aVI, and aVF are dependent on Lead II therefore they cannot be edited directly but rather indirectly based on changes to Lead II.

To create a new rhythm from scratch when starting with all flat lines for the waveforms:

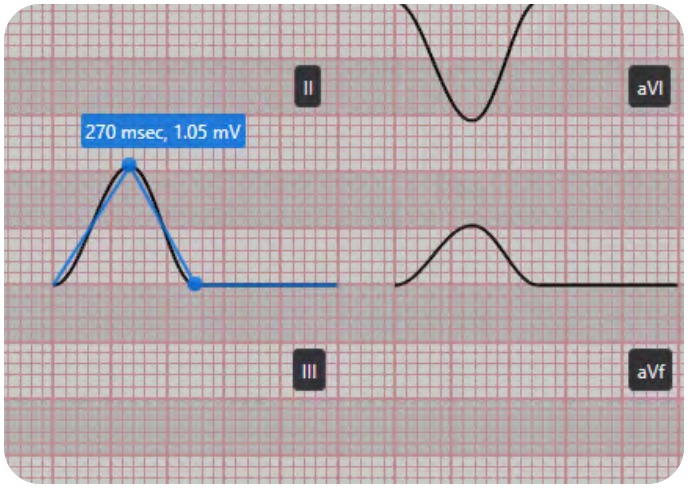
1. Click on any of the blue highlighted leads/waveforms to **Add Point**.

Add as many points to the lead/waveform as needed. These points are used to drag the lead/waveform into the desired parameters (amplitude, trough, wavelength, etc.,).



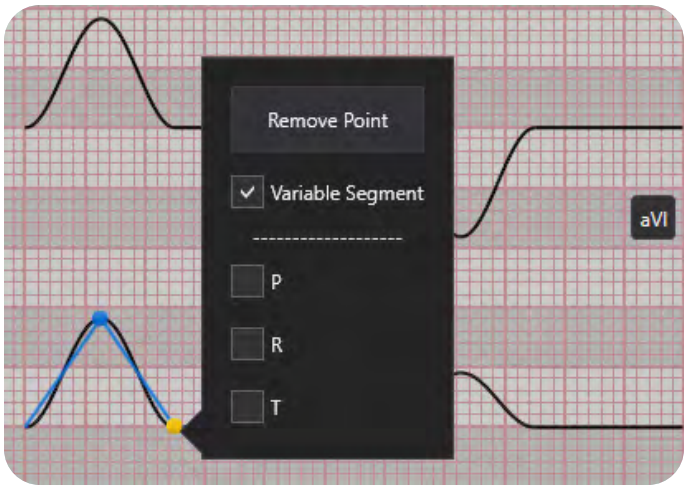
2. Drag the points on the lead/waveform to shape into the desired EKG waveform.

As the point is dragged the EKG Designer will tell you the units of ms/mV of the new location for the point.



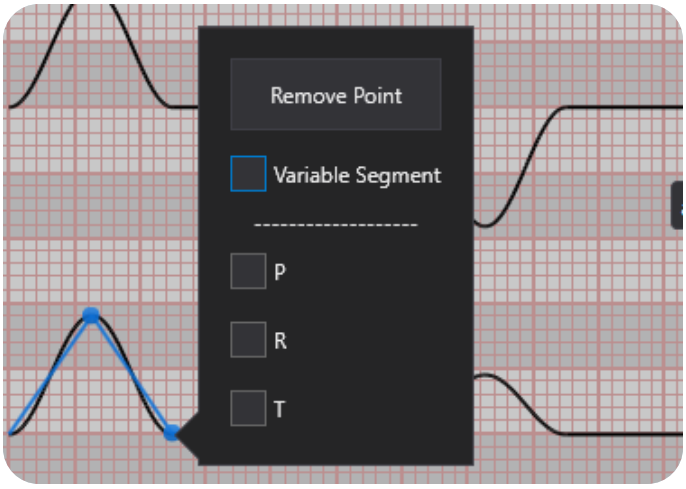
3. If desired, a **Variable Segment** can be identified. This refers to the line between two points that can be extended or reduced as the heart rate decreases or increases. Click on a desired point and select **Variable Segment**.

Once selected, the variable segment becomes highlighted in yellow. If a variable segment is present, that segment needs to be identified on all lead waveforms.



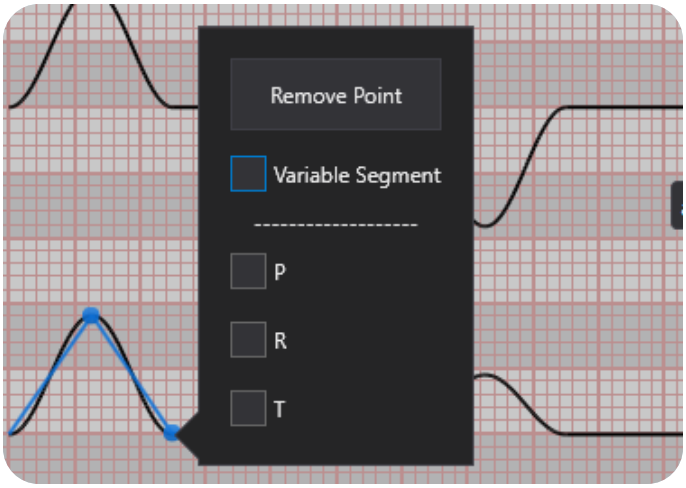
To remove elements added to the lead/waveform:

1. To remove the highlighted **Variable Segment**, right-click on the point and de-select the **Variable Segment** option.



This will remove the yellow highlight for that segment.

2. To remove a point, right-click on the point and select **Remove**.



When a point is removed the waveform will revert back to its x-axis.

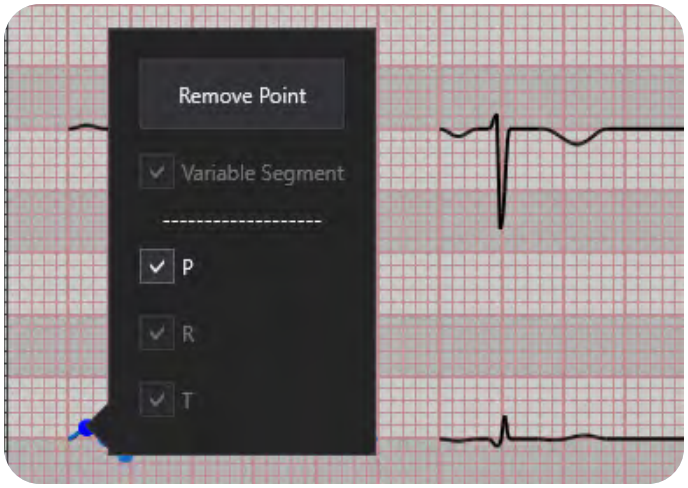
Assigning Variables to a 12 Lead ECG

When creating custom ECG rhythms it is important to identify the P, R, & T points on Lead II so that the ECG can be properly synched to "Beep on R" if necessary when connected to real medical monitoring equipment or the Bedside Virtual Monitor.

On Lead II, add enough points and drag them into the desired form as described in the previous section, then:

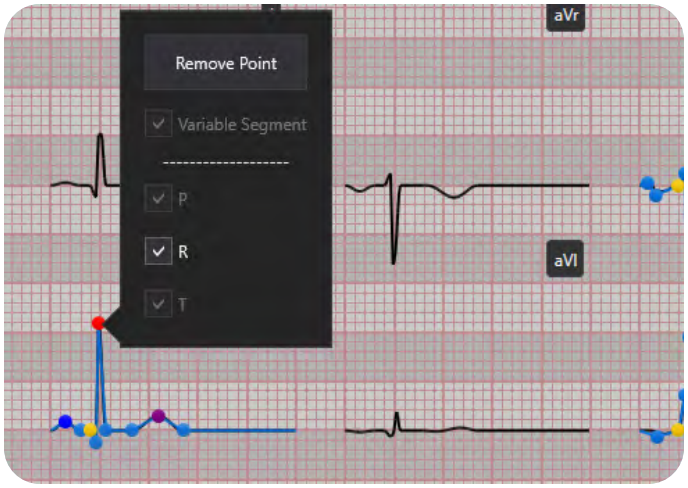
1. To identify the **P** point, right-click on the desired point and select **P**.

Once selected, the P point will appear as a blue dot on the waveform.



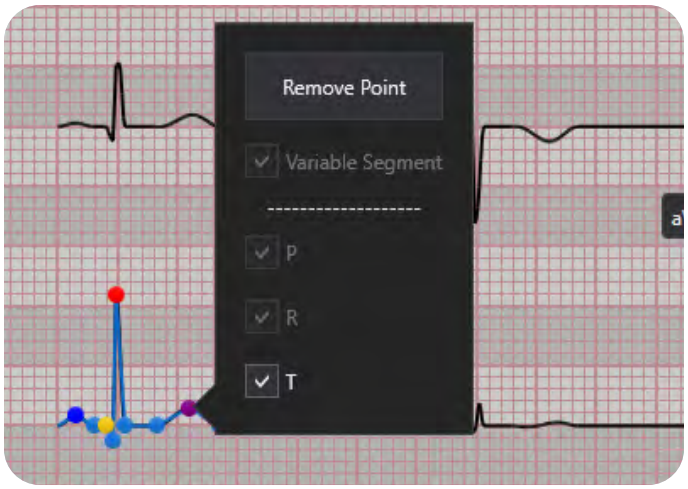
2. To identify the **R** point, right-click on the desired point and select **R**.

Once selected, the R point will appear as a red dot on the waveform.



3. To identify the **T** point, right-click on the desired point and select **T**.

Once selected, the T point will appear as a purple dot on the waveform.



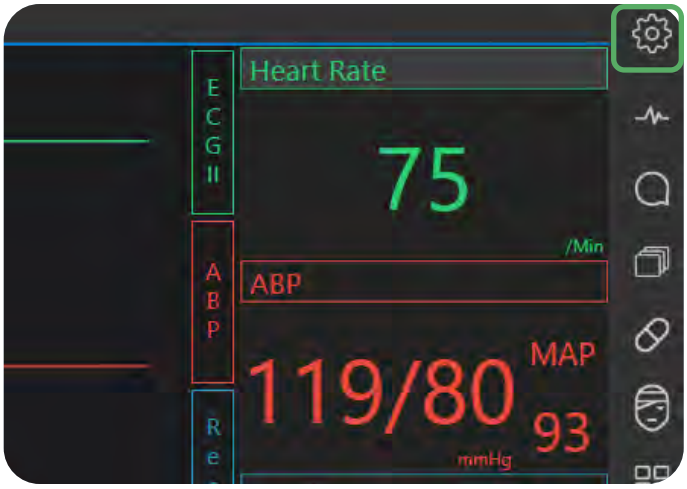
Modify a Pre-Existing ECG

It is also possible to load a pre-existing ECG rhythm, make further changes, and save it as a new rhythm.

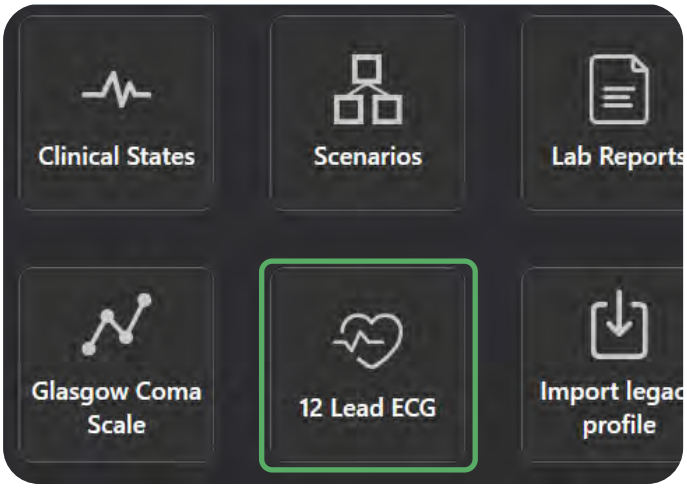
There are some default ECG rhythms that cannot be directly modified which include **1st degree AVB**, **2nd degree AVB (Type I)**, **Idioventricular**, **Junctional**, **LBBB**, **RBBB**, **Sinus**, **Supraventricular tachycardia**, **Vent**. **tachycardia unifocal (narrow)**, and **Vent**. **tachycardia unifocal (wide)**. It is easy to identify these as the non-editable ones since the **Edit** icon will be grayed out for them. Instead, these ECGs can be cloned, or copied, and the edits can be done and saved on this copy. All other custom created ECGs can be directly edited or copied and edited as well.

To modify an existing ECG file:

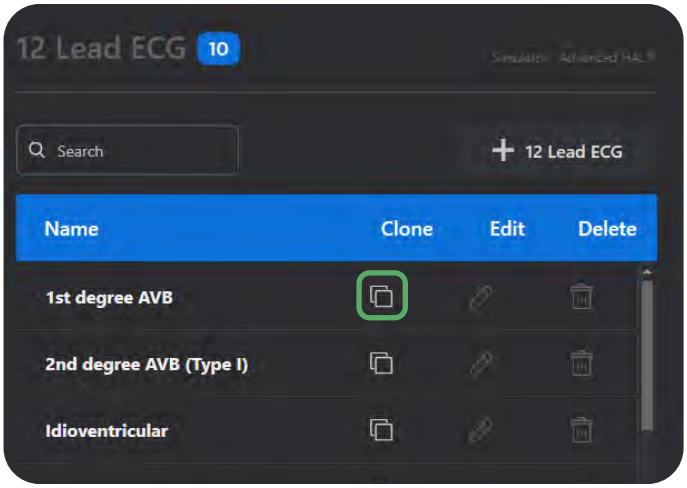
1. In UNI 3, click on the **Settings** icon in the upper right corner.



2. Under **Simulator Model**, click **12 Lead ECG**.



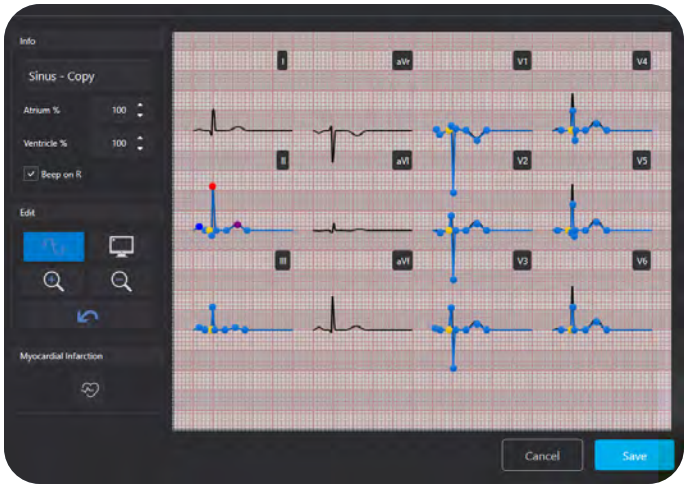
3. Click the **Clone** icon on the selected ECG rhythm**.**



Or, if the **Edit** tool is available for the selected ECG rhythm, click the **Pencil** icon.

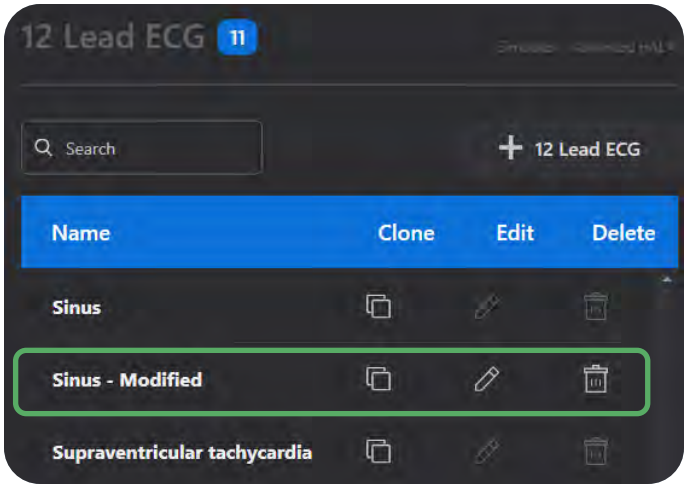
4. This will open a copy of the selected ECG rhythm. Make your modifications to the ECG rhythm.

As explained in the previous sections, adding and removing points, variable segments, and identification of P, R, T points can also be done in copied and edited ECG files.



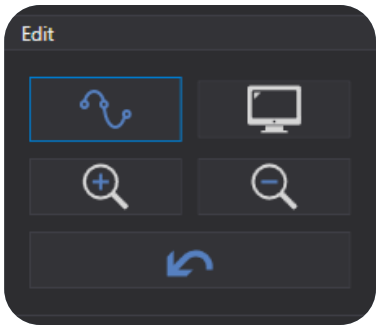
5. Click **Save**.

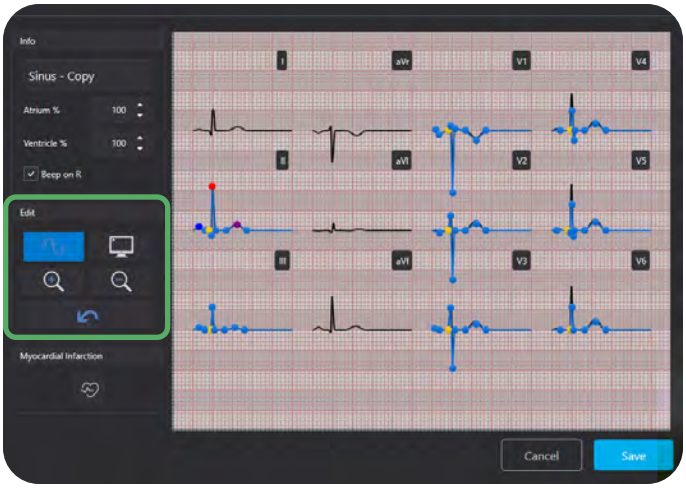
The edited and saved ECG rhythm will now appear as part of the 12 Lead ECG rhythm list.



Other Editing Tools

In addition to the previously described ways to edit ECG waveforms, the left side **Edit** toolbar can also be utilized.





The tools in this toolbar include:

1. **Preview**: View the waveforms as they would appear on a monitor (without points and highlights).

2. **Preview Rhythm on VM**: See the EKG rhythm on the UNI Virtual Monitor tab and/or to a connected Bedside Virtual Monitor.

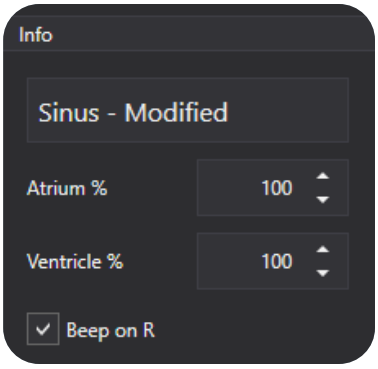
3. **Zoom to Lead**: Click this button then the desired lead for closer inspection.

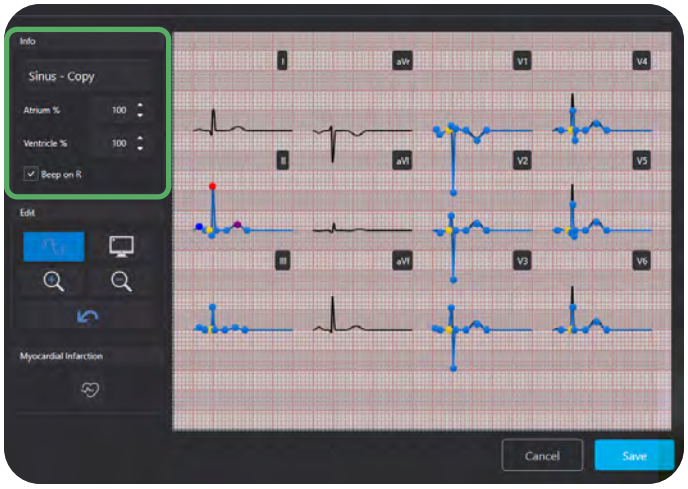
4. **Zoom Out**: Click this button to revert to the normal view of all leads.

5. **Reset 12 Lead**: Click this to reset all leads to their baseline.

Save an ECG Rhythm

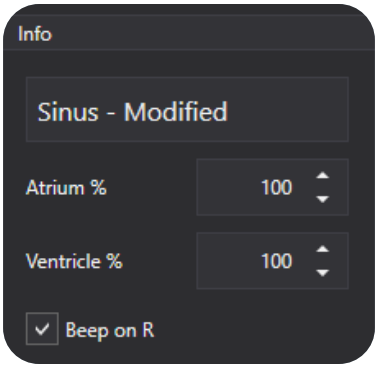
After creating a custom ECG or editing an existing one, use the left side **Info** toolbar to save the ECG.





To save an ECG:

1. Type a name for the ECG rhythm into the text field.

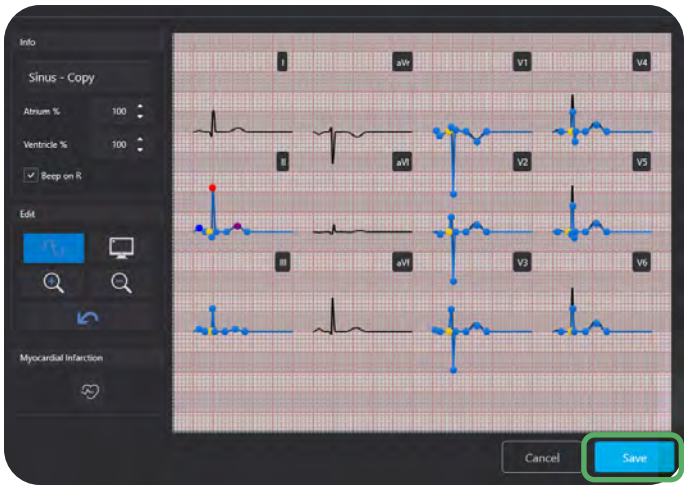


2. Determine the **Atrium** and **Ventricle** percentages for the created ECG.

   The percentage set here for the **Atrium** and **Ventricle** will determine Blood Pressure and Oxygenation. A percentage of 100% indicates optimal blood flow.

3. If desired, checkmark **Beep on R**.

   Beep on R refers to the point on Lead II that was assigned to be **R** and when this box is checked it will tie the heart sound to beep on the **R** point when played on a Bedside Virtual monitor or real medical monitoring devices.



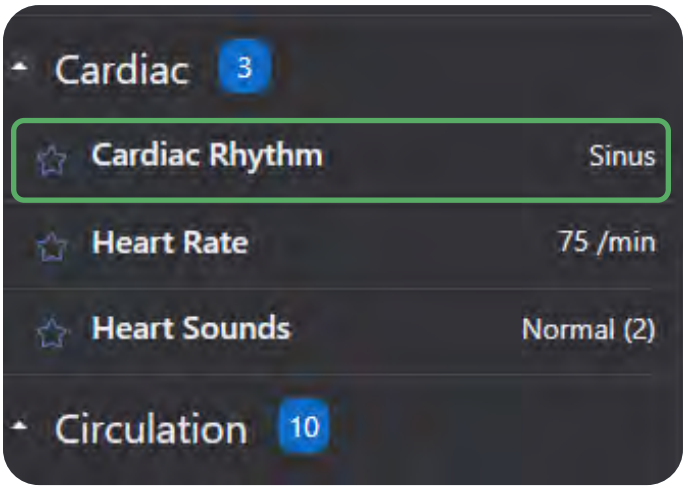
4. Click **Save**.

Load a Custom ECG Rhythm

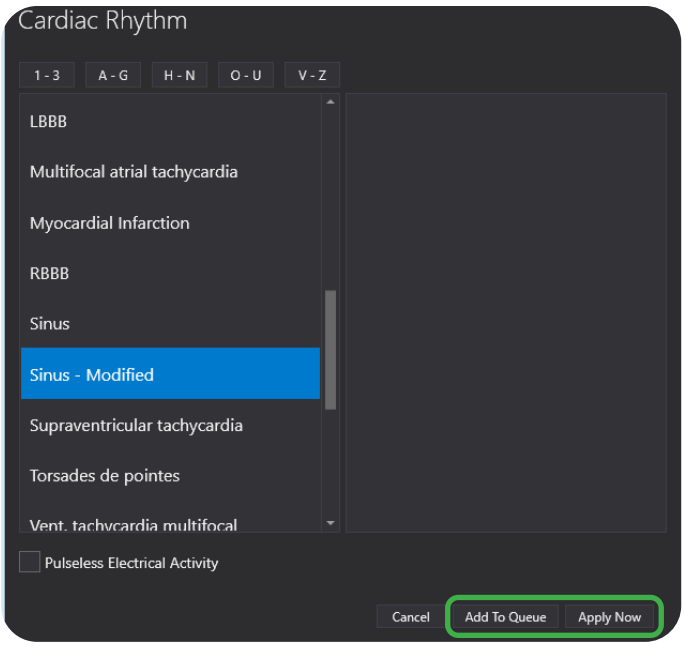
After creating and saving an ECG they become part of the UNI 3 **Cardiac Rhythm** library.

To access the ECGs in the **Cardiac Rhythm** library:

1. In UNI 3, under the **Cardiac** section click **Cardiac Rhythm**.



2. Search the Cardiac Rhythm list for the name of the created ECG and select it.



3. Click **Apply Now** to immediately apply the selections to SUSIE or click **Add To Queue** to load at a later time.

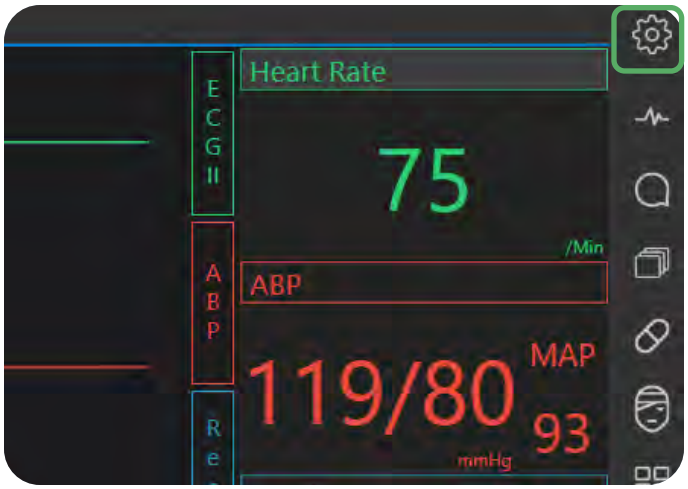
4.3.2. Myocardial Infarction (MI) Model Access & Tools

Access the Myocardial Infarction (MI) Model

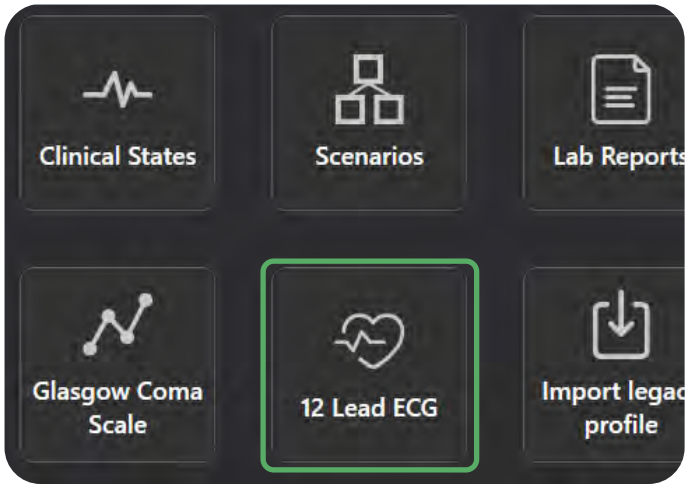
The Myocardial Infarction (MI) model is a tool to help generate a 12 Lead ECG due to a lesion on the heart. Once a lesion has been added (Ischemia, Injury, Necrosis) a 12 lead Rhythm will be generated on the designer. Use the ECG Designer to modify the rhythm and save it. Changes on the 12 Lead ECG designer will not be reflected on the MI model.

The MI Model is part of the 12 Lead ECG Designer. To access it:

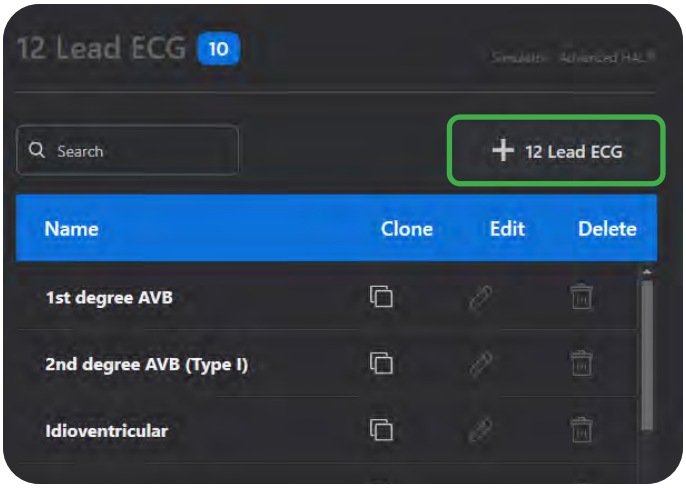
1. In UNI 3, click on the **Settings** icon in the upper right corner.



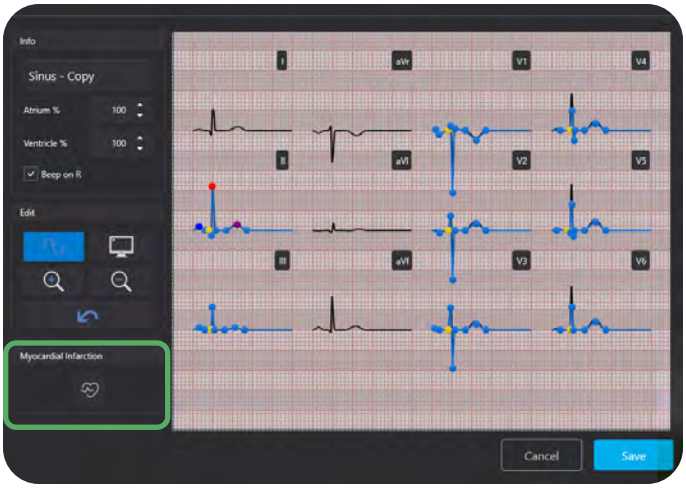
2. Under **Simulator Model**, click **12 Lead ECG**.



3. Click **+ New 12 Lead ECG.**

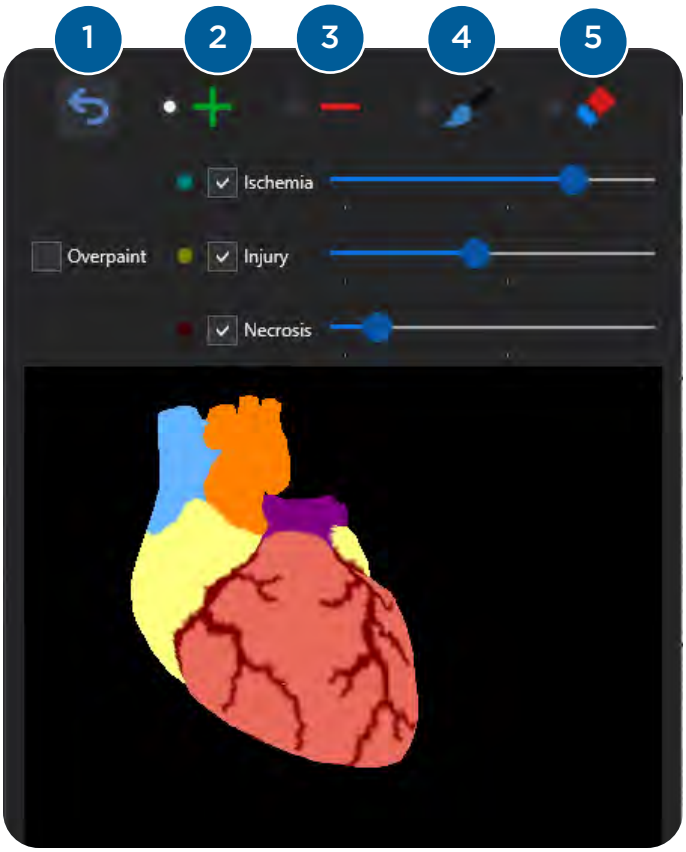


4. Click on the **Myocardial Infarction** icon to open the model.



MI Model Top Toolbar

The MI Model has various tools available to assist in creating lesions on the 3D model of the heart. The tools across the top are as follows:



1. **Reset**: Reset the MI Model back to a healthy state. A warning message will ask if you are sure.

2. **Add Occlusion Point**: Assign the level of severity of Ischemia, Injury, and Necrosis using the slider bar and click this button to apply those properties to the 3D heart model.

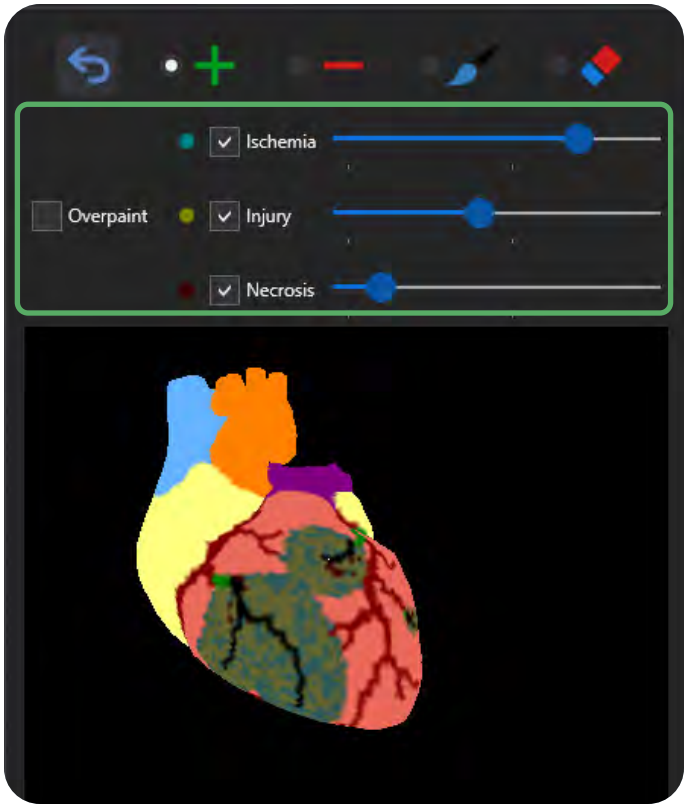
3. **Delete Occlusion Point**: Check mark the types of lesions (Ischemia, Injury, and/or Necrosis) that need to be removed from the 3D heart model, click this button, and then click the green occlusion points to remove.

4. **Paint brush**: Select a brush type (Ischemia, Injury, and Necrosis) to paint that injury anywhere on the 3D heart model.

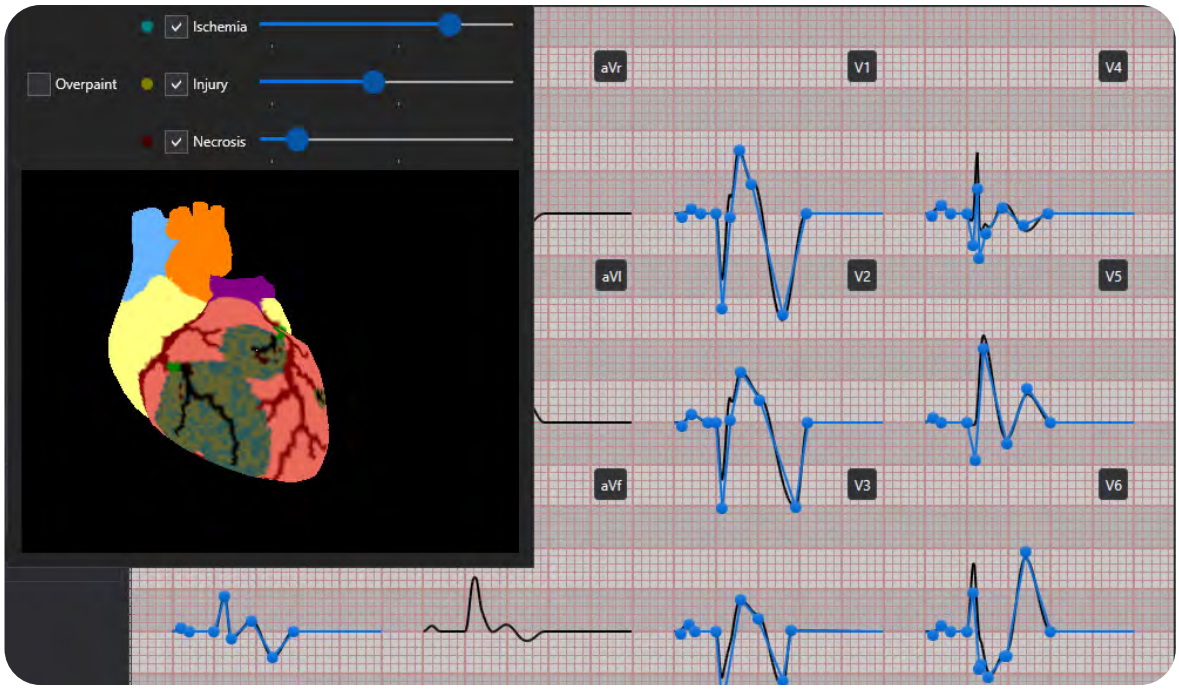
5. **Eraser**: Select the eraser and type of injury to erase to pass the eraser over the 3D heart model to remove.

MI Model Lesion Tools

The lesion tools for the MI model include ischemia, injury, and necrosis. Use the slider bars here for each type of lesion to increase or decrease the intensity that will be applied when an occlusion point is added to the heart model.



As lesion intensity and occlusion points are added to the MI Model, an ECG is generated from this trauma and is available to save and use as a **Cardiac Rhythm** for SUSIE. Refer to 4.1's subsection "Save an ECG Rhythm" on page 174 to learn how to save newly created or edited ECG's.



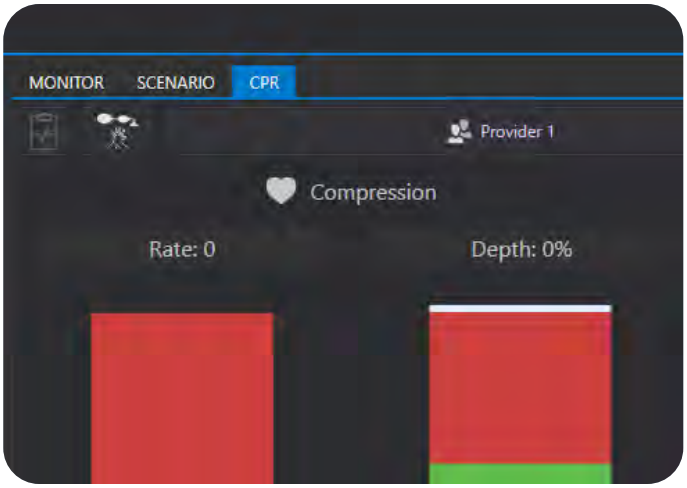
4.4 CARDIOPULMONARY RESUSCITATION (CPR)

Cardiopulmonary Resuscitation (CPR) is an emergency lifesaving procedure performed when the heart stops. According to the American Heart Association, immediate CPR can double or triple chances of survival after cardiac arrest by keeping the blood flow active - even partially.

UNI 3 features a CPR performance evaluator and trainer that may record CPR cycles, provide CPR evaluations, and generate reports. This CPR feature is a great tool to evaluate compressions and ventilations effectiveness, according to the user-defined settings.

The CPR tab is located within UNI 3 towards the top of the software. To view the CPR window:

1. Located at the top of UNI 3, click on the **CPR** tab.



This will display the CPR window with the following features:

1. Reports
2. Simultaneous Ventilation & Compression
3. Compression Provider
4. Switch Providers
5. Ventilation Provider
6. Coach
7. Record
8. Compression Rate
9. Compression Depth
10. Compression to Ventilation Ratio
11. Total CPR Cycles
12. Total CPR Time
13. Ventilation PIP
14. Ventilation Duration
15. Graphical Representation of Compressions and Ventilations
16. Airway System View

4.4.1. CPR Settings

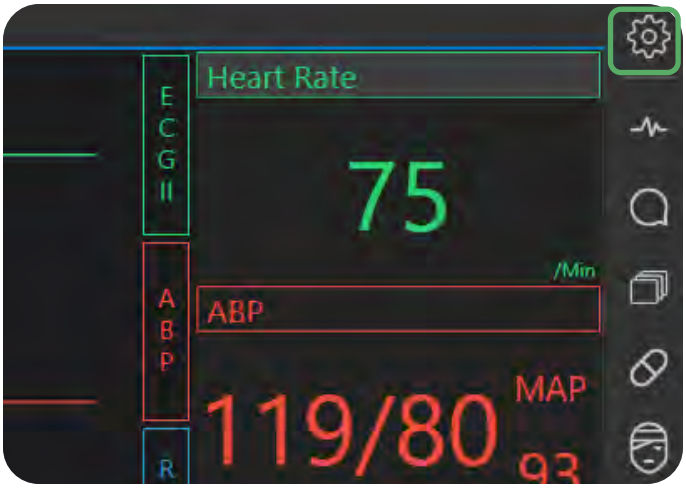
UNI 3's CPR settings are customizable to suit your simulation needs.

Access the CPR settings to adjust:

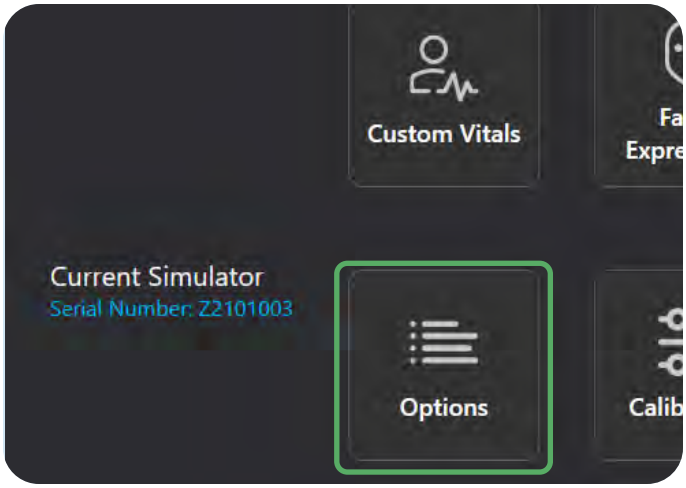
- Compression per Ventilation Ratio
- Compression Rate
- Compression Depth
- Ventilation Rate
- Ventilation PIP
- Ventilation Duration
- Release Threshold
- CPR Automatic Calculations for EtCO2, Blood Pressure, and Oxygen Saturation

To access the CPR settings:

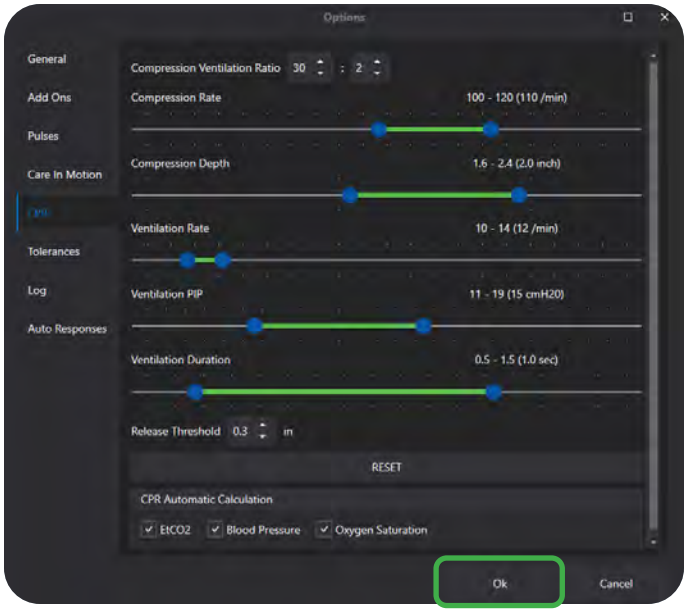
1. In UNI 3, click on the **Settings** icon in the upper right corner.



2. Under **Current Model**, click **Options**.



3. On the left side, select the **CPR** tab and make adjustments to the CPR settings.



4. Click **Ok**.

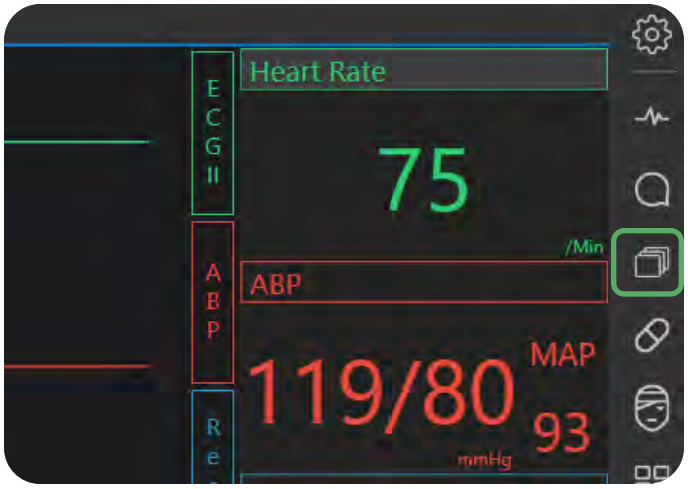
4.4.2. Providers, Coach, Record, & Report

Designate Providers

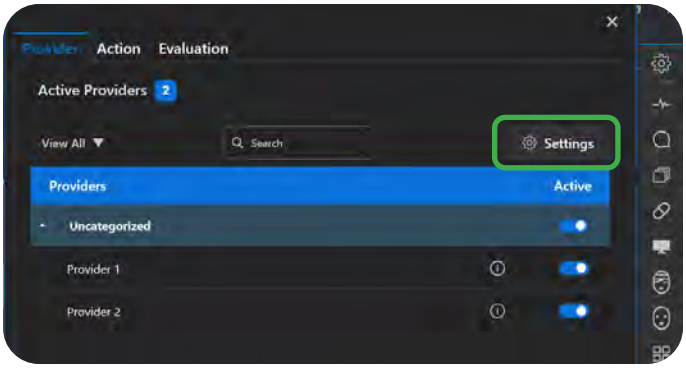
In order to designate providers for delivering compressions and ventilations, the names of your Providers need to be created to UNI 3.

To create Providers:

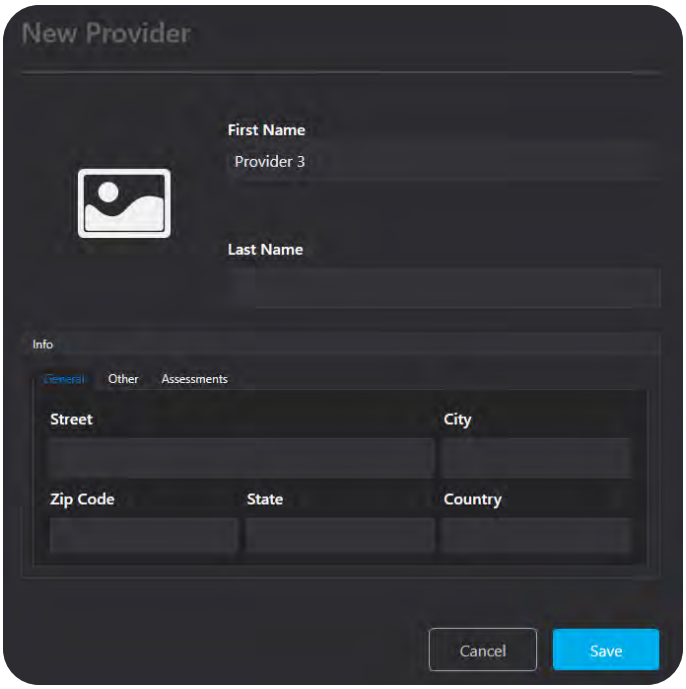
1. Click on the **Providers/Actions** icon from the right toolbar.



2. Click **Settings**.

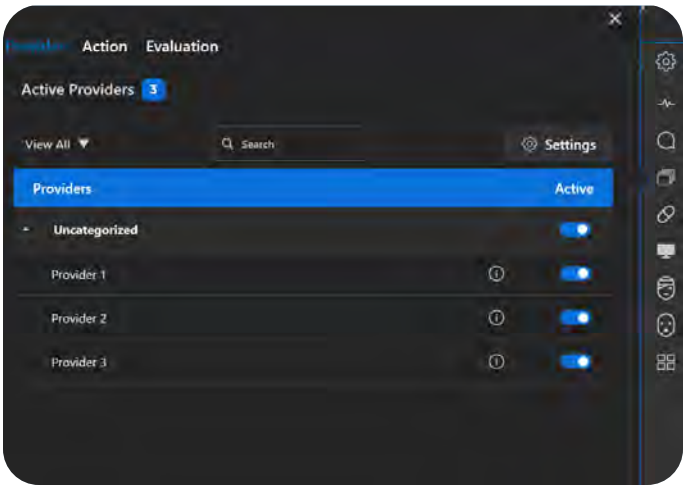


3. Click **+ New Provider**.



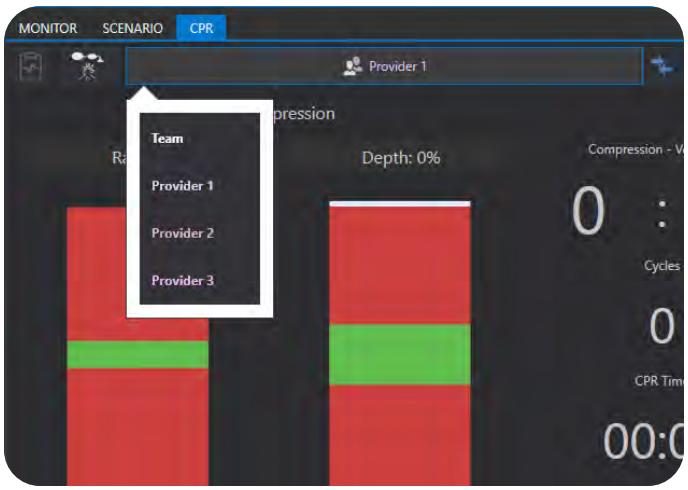
4. Click **Save**.

5. Click on the **Providers/Actions** icon from the right toolbar and switch **Active** ON.

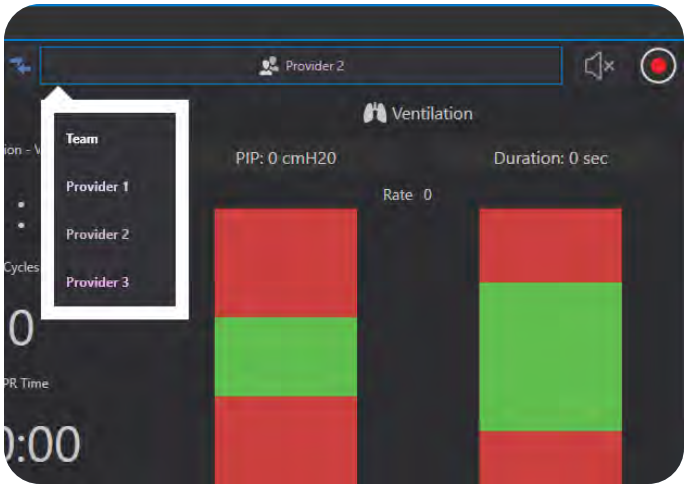


To designate a Provider for compressions and ventilations for a CPR session:

1. On the **CPR** window, click on the **Compression Provider** button.
2. Select the desired **Provider** for chest compressions.



3. On the CPR window, click on the **Ventilation Provider** button.
4. Select the desired **Provider** for ventilations.



Coach a CPR Session

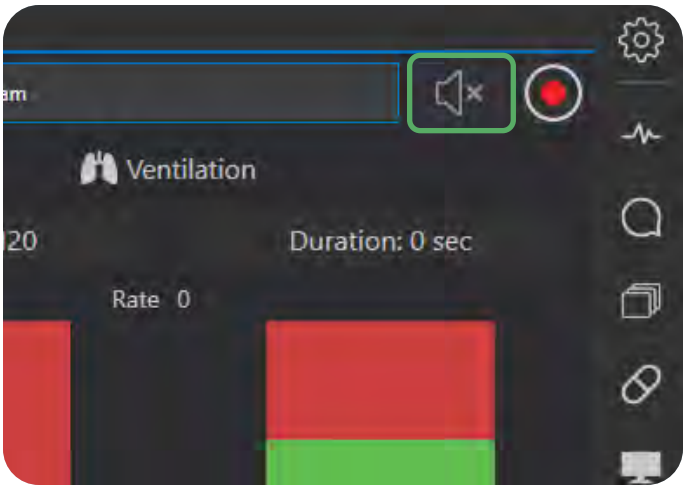
The **Coach** mode generates audible cues for the compression to ventilation ratio programmed in the CPR settings. For example, if the Compressions to Ventilation ratio is set to 30 compressions to 2 ventilations, the Coach mode will start with 30 short beeps to signal the compressions followed by 2 long beeps to signal the ventilations.

Coach mode also enables audible commands when the detected chest compressions meet the following criteria:

- If the detected chest compressions per minute are below the programmed CPR settings, the audible command will play **FASTER**.
- If the detected chest compressions per minute are above the programmed CPR settings, the audible command will play **SLOWER**.
- If the detected chest compression depth is below the programmed CPR settings, the audible command will play **HARDER**.
- If the detected chest compression depth is above the programmed CPR settings, the audible command will play **TOO DEEP**.
- If the detected chest compressions recoil is not complete, the audible command will play **RELEASE**.

To turn **Coach** mode **ON**:

1. On the **CPR** window, click the **Coach** button.
2. To turn **Coach** mode **OFF**, click the **Coach** button again.

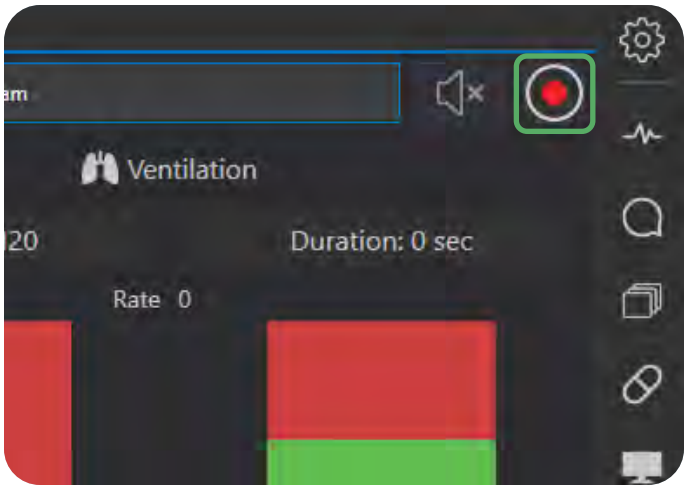


Record a CPR Session & Generate a Report

Compression and ventilation data that is displayed on the CPR window and in the UNI 3 log can be recorded and used to generate a report after a CPR session is completed. CPR sessions can incorporate all of the optional features mentioned in the previous sections or use the default settings the CPR window is loaded with.

To start recording a CPR session:

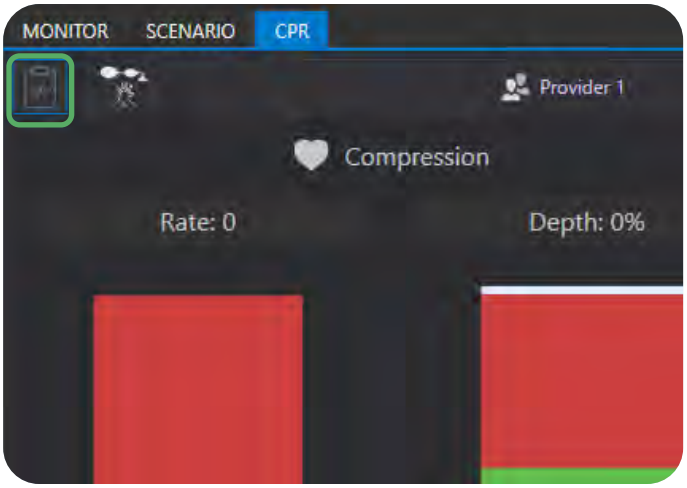
1. On the **CPR** window, click the **Record** button.
2. To stop a recording, click the **Record** button again.



Once a CPR session has been recorded, all of the data will be collected and will automatically generate a CPR **Report**.

To access the CPR **Reports:**

1. On the **CPR** window, click the **Reports** button.



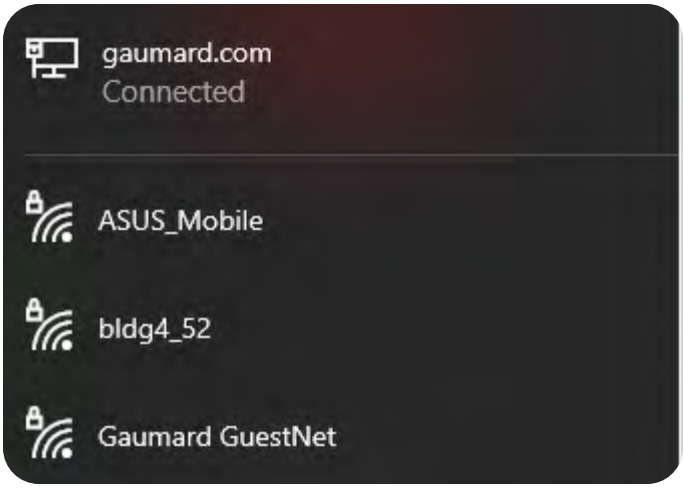
5. Routine Maintenance

5.1 UPDATING UNI 3

It is important to update UNI 3 to the latest version for any added features, improvements, and fixes!

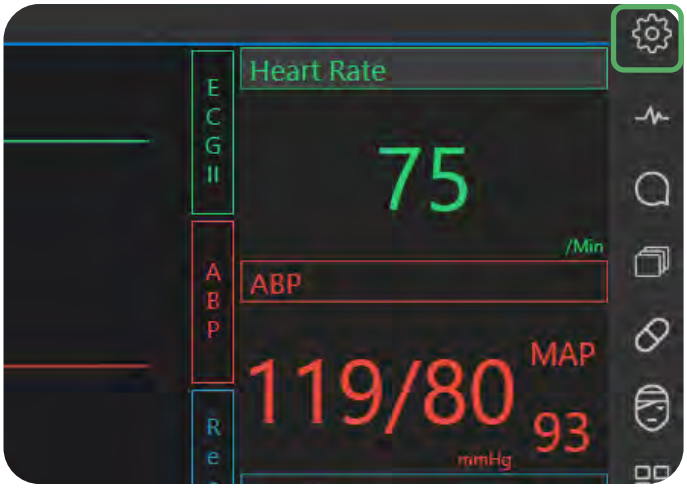
To update UNI 3:

1. Connect the UNI 3 tablet/PC to a Wi-Fi network that has internet.

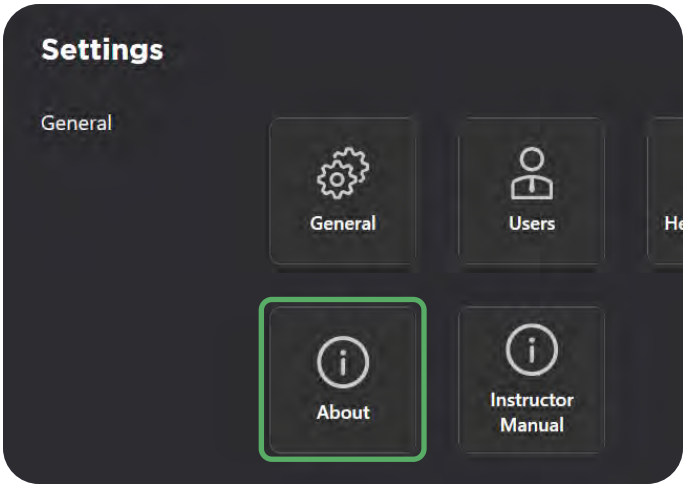


2. Launch **UNI 3**.

3. Click **Settings**.



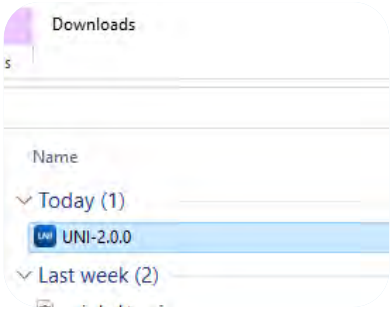
4. Under the **General** section, click **About**.



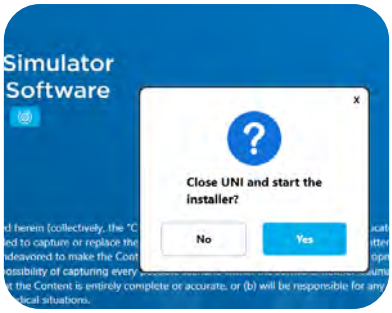
5. On the **About** window, click on the **Download** button.

There are two options here:

1. Click the **Folder** icon to go to the installer downloaded to your tablet/PC's **Downloads** folder.



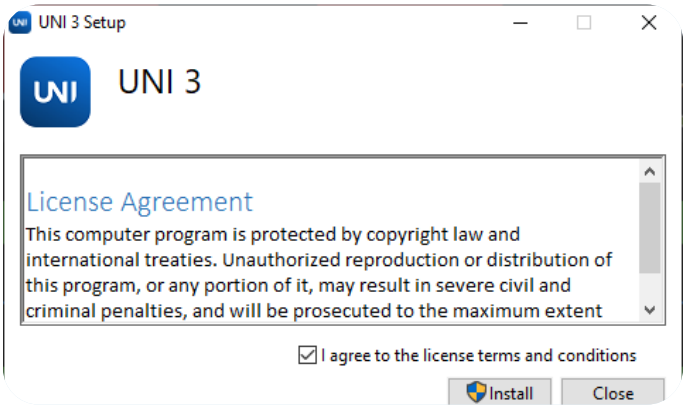
2. Or, click the **Gear** icon to close UNI and start the installer.



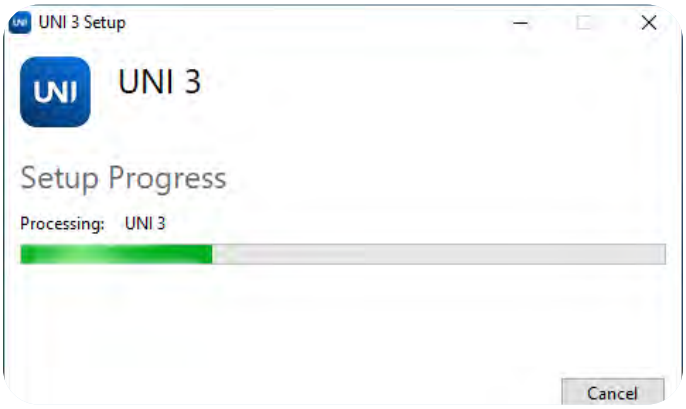
For either option, you will have to launch and run the installer:

1. Check the agreement to the license terms and conditions.

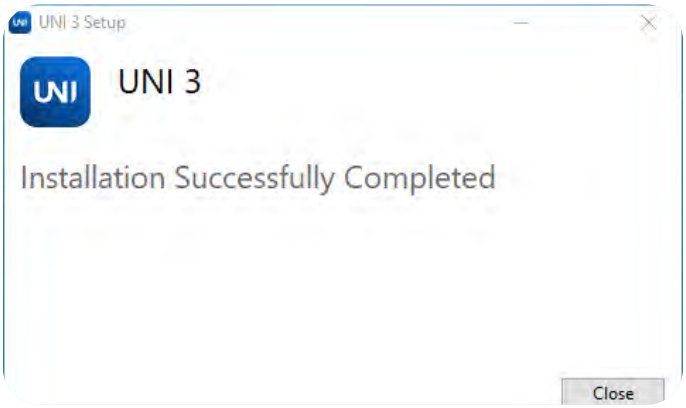
2. Click **Install**.



Allow UNI 3 to install the updates. A progress bar will display the installation process.



3. Once the installation is successfully completed, click **Close**.



4. Double click the **UNI 3** icon on your desktop to launch the updated software.

5.2 BATTERY CYCLING & STORAGE

Battery Cycling

The battery is an integral part of your simulator and requires appropriate care to maintain efficiency and longevity.

Overcharging or leaving the battery idle for long periods of time will damage the battery and lower the amount of potential charge overtime.

To ensure maximum battery life, cycle the battery and avoid overcharging by adhering to the following warnings and guidelines.

Avoid Overcharging the Battery

Do not leave the simulator charging continuously for extended periods of time (i.e., several days). It is best practice to disconnect the battery charger once the battery is fully charged.

- It is recommended to charge the simulator the day or night before a simulation to allow the battery time to fully charge.
- Unplug the simulator when in use unless while running a simulation the UNI software indicates a critically low battery. In these cases, it is advisable to plug in the simulator's battery charger to act as a power supply to finish the simulation. Once the simulation is completed, turn the simulator off and allow the simulator's battery to charge.

Avoid Battery Idleness

Do not leave the simulator idle for extended periods of time (i.e., months, years). The battery's capacity for charge will deteriorate if there is no cycling in the level of charge.

- If you plan to store away and not use the simulator for an extended period of time, it is recommended to fully charge the battery before storage. As part of routine maintenance, plan a time each month to cycle the battery and fully charge it before storing the simulator away again.

Cycling the Battery

1. Obtain the correct battery charger for the simulator and plug the wall adapter end into a voltage source.
2. With the simulator turned off, plug the charger into the charging port on the simulator.
3. Leave the simulator plugged into the charger until the LED light on the simulator's charger is green.
4. Disconnect the simulator from the charger.
5. The simulator is ready to be used for simulation.
6. Use the simulator's battery charge until depleted.
7. Repeat this process as needed.

If preparing the simulator for storage, arrange for a time every month to "cycle the battery" of the simulator. Then, store the simulator with a fully charged battery until the next scheduled usage.

Never store your simulator with a depleted battery for an extended period.

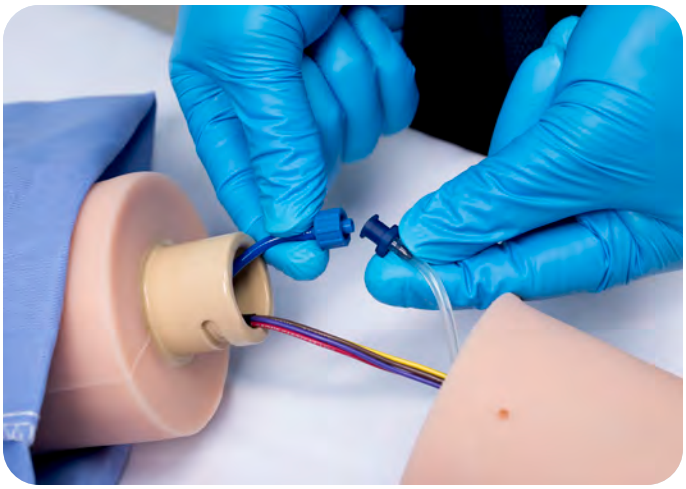
5.3 DISCONNECTING THE ARMS

Left Arm:

1. Insert a small allen key into the hole located on SUSIE's lower arm to disengage the lower arm from the upper arm.

2. Unscrew the blue pulse line.

Unscrewing the blue pulse line detaches the left arm completely.



Right Arm:

1. Insert a small allen key into the hole located on SUSIE's lower arm to disengage the lower arm from the upper arm.

2. Unscrew the blue pulse line.

3. Unscrew the black electrical BUS cable.

Disconnecting both will fully disconnect the arm.

5.4 IV ARMS VEIN REPLACEMENT

SUSIE's inner antecubital vein tubes within both her wrists could use a routine replacement if they were to ever get clog, break, etc. To reach these vein tubes:

1. Disconnect either or both of SUSIE's arms, and disconnect wires. Refer to previous section "5.3 Disconnecting the Arms" on page 191.

2. Roll down the lip of the arm skin to remove it completely in order to get a visual of SUSIE's vein tube.

3. Pull out the tube connectors from their divot.

4. Pull back and separate the black rings from their hold on the white port to properly unplug the vein tube from SUSIE's vasculature reservoir port.

5. Apply steps 1-3 to the other vein so that the antecubital vein tube is loose on both ends from the white reservoir port.

6. Untighten the screw with a screwdriver on the other side of the wrist in order to fully remove the antecubital tubing.

7. Locate the Antecubital Non-Latex Vein Set from the accessories box and gather a new tube and/or black ring for installation.

8. Insert the black rings onto both ends of the new antecubital tube.

9. Connect one side of the tubing to the white reservoir port.

10. Align the tubing along vein path in SUSIE's arm.

11. Tighten the screw with the screwdriver in order to ensure the vein's position in the arm.

12. Roll back up the arm skin, and align for proper fitting.

Baby powder can be used lightly to help roll up the lower arm skin smoothly.

6. Options

6.1 SNAP COMPATIBLE DEFIBRILLATION SITES

These snaps allow for easy attachment and cleanup of a modified defibrillation snap adapter cable which allows the simulator to be hooked up to real medical monitoring equipment. These snap adapters are connected to SUSIE's **Defibrillation Snap Inserts**.

These can be made to be compatible with Philips, Zoll, Physio, or a customer specific equipment.

Phillips

Zoll

Physio

6.2 RIGHT & LEFT BREAST DISPLAY STAND

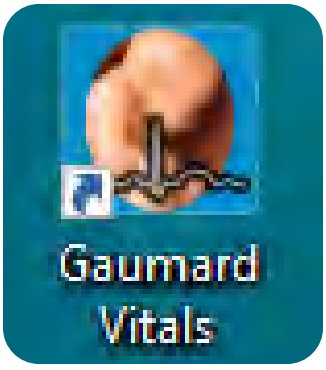
6.3 VIRTUAL MONITOR

Gaumard Vitals

The Gaumard Virtual Vital Signs Monitor simulates vital sign monitoring equipment. It offers participants the versatility of a bedside patient monitor. The vital signs are synchronized through a wireless connection between the facilitator's laptop and the virtual monitor.

Each trace can be customized independently; users can set alarms, time scales, boundaries and grid options. In addition, it allows the facilitator to display lab reports, X-rays, and other files on the Virtual Monitor screen for use by the provider.

- The control PC and the bedside virtual monitor PC automatically establish a wireless link at startup. The wireless connection allows Gaumard control software to transmit the vital signs information to the Gaumard Vitals software.
- Be sure both the control tablet that runs UNI and the virtual monitor that runs Gaumard Vitals are connected to the same Wi-Fi network.
- After the wireless connection is established, double click or tap the **Gaumard Vitals** Icon on the desktop to start the vital signs software.
- To verify the wireless link between the two computers, click the Wi-Fi icon on the desktop.



The wireless network name is configured at the factory and may differ from the one seen here.

- The Gaumard Vitals software is now ready to receive the vital signs information generated by the UNI 3 control software.
- For more details on using the UNI 3 software see the UNI 3 user guide.

Connecting UNI 3 and Gaumard Vitals

For information and steps pertaining how to connect UNI 3 to Gaumard Vitals, refer to 2.7's subsection "Connecting UNI 3 and Gaumard Vitals" on page 34.

7. Troubleshooting

7.1 CONNECTIVITY

Issue	Probable Cause	Solution
Battery indicator question mark	SUSIE's battery needs a charge.	Disconnect and reconnect battery charger and allow the simulator to charge fully.
Virtual monitor not connecting	Computers and tablets may not be matching in important network details.	Check that both computers/tablets are connected to the same Wi-Fi network, and check that firewalls are turned off on both computers/ tablets. Verify that the IP & Port numbers match from the UNI software on the Gaumard Monitors.

7.2 CO_2 NOT DETECTED

Issue	Probable Cause	Solution
CO_2 function on simulator is not correctly performing..	CO_2 tubing is not connected properly	Check the equipment set up and the cartridge's connection to the simulator, and adjust Lung CO_2 level in the UNI software.

7.3 PULSES NOT ACTIVATED ON TOUCH

Issue	Probable Cause	Solution
Pulses not activating when touched upon by fingers.	Blue Pulse line is not connected properly	Ensure that the connection with the blue pulse lines are secure within the left and right lower legs. It will be necessary to remove both lower legs from the upper thighs and reattach the blue pulse lines so that they remain secure.

8. Appendix

8.1 GAUMARD SALES TERMS AND CONDITIONS

These Gaumard Scientific Company, Inc. ("Gaumard") Sales Terms and Conditions ("Terms") apply to the sale or use of Gaumard equipment ("Equipment"), Software ("Software" as defined in paragraph 13), and supplies ("Supplies"), collectively referred to as "Product" or "Products" between Gaumard and the entity named on the applicable Gaumard Purchase Order ("Customer") (collectively, "Party" or "Parties"). The Parties, intending to be legally bound, agree as follows.

1. Agreement. Customer agrees to purchase from Gaumard the Products set forth in quotes and purchase orders accepted by both Customer and Gaumard from time-to-time. These Terms, along with any Exhibits, any applicable Gaumard Purchase Order documents, Gaumard Warranty documents, Gaumard Cares Service Plan documents, and any other purchasing or service documents executed by the Parties constitute the complete and entire agreement between Gaumard and Customer (collectively referred to herein as the "Agreement"). This Agreement will supersede all other quotations, agreements, understandings, warranties, and representations (whether written or oral) between the Parties with respect to the subject matter set forth in the Agreement. Any Customer documentation (including Customer's purchase order terms and conditions) that conflicts with or attempts to modify the Agreement in any way is hereby rejected and of no effect unless specifically agreed to in writing and signed by the Parties. No provision of this Agreement shall be waived, amended, modified, superseded, canceled, terminated, renewed, or extended except in a written document signed by both Parties or signed by the Party against whom the modification is sought to be enforced. This agreement can be terminated by Gaumard without cause by giving thirty (30) days prior written notice to Customer.

2. Prices. Prices, fees, and charges for Products and services (including maintenance, installation, and training as described in the applicable Gaumard Purchase Order documents, Gaumard Warranty documents, Gaumard Cares Service Plan documents) ("Service" or "Services") are payable in United States (U.S.) Dollars only, and do not include any applicable taxes or shipping charges. If Customer claims any tax exemption, it must furnish a valid tax exemption certificate before shipment of Products. Unless such certificate is furnished, Customer agrees to pay at its sole expense all applicable taxes, assessments, fees, penalties, import duties, and merchandise processing fees that may be levied or assessed upon Customer or Gaumard with respect to this Agreement, the Products, or any interest thereon. Gaumard reserves the right to increase prices on thirty (30) days written notice to Customer.

3. Payment. Unless otherwise agreed to in writing by Gaumard, Customer shall pay invoices net twenty (20) days from the invoice date. A late charge will be due on any unpaid balance at a rate of 1.0% per month or the maximum rate otherwise permitted by law, whichever is lower. Gaumard may charge interest at the maximum rate permitted by law on all amounts not paid by the invoice due date. Gaumard retains a purchase money security interest in all Products sold to Customer to secure payment of the total purchase price thereof. Customer hereby grants Gaumard the right to file a copy of this Agreement with any appropriate authorities to evidence this security interest. Customer agrees to execute and deliver such other documents as Gaumard may request in connection therewith. Gaumard shall not be obligated to deliver any Product or perform any Service during any period when Customer payment is past due. Customer will be responsible for all costs (including reasonable attorneys' fees) incurred by Gaumard to collect overdue payments and/or to take possession or otherwise dispose of Products for which payment is overdue.

4. Product Shipment and Risk of Loss. Unless otherwise agreed to in writing by Gaumard, all Products will be shipped F.O.B. Origin, regardless of any provisions for payments of freight, insurance, the form of shipping documents, or selection of carrier by Gaumard. F.O.B. Origin means title to the Products passes to the Customer at the shipping dock of Gaumard or Gaumard's supplier or authorized agent. Customer is responsible for shipping charges and for the cost of insurance paid to cover any losses from Gaumard's shipment point to Customer's receipt. Gaumard will assist Customer in processing any loss claims. Gaumard shall use reasonable efforts to meet the specified delivery dates. If Gaumard fails to make delivery within a reasonable time for reasons other than Customer's fault or circumstances beyond Gaumard's reasonable control, then Customer's only remedy is the right to terminate the applicable Purchase Order, whereupon Gaumard will refund any prepayments received from Customer relating to such Purchase Order.

5. Installation and Acceptance. Product orders are subject to 1) written acceptance by Gaumard, 2) receipt of specified deposits, as applicable and 3) continuing credit approval. If applicable, Gaumard will install Equipment at an agreed upon location ("Installation"). Installation shall be complete upon Gaumard's demonstration that the Equipment meets Gaumard's then-current operating specifications ("Installation"). Installation is subject to Customer cooperating in preparing and maintaining the site in compliance with Gaumard specifications, including but not limited to, applicable electrical and other connection regulations and all environmental conditions. If Customer fails to accept shipment of Products other than for breach of warranty, Customer shall immediately pay the full purchase price as if shipment and Installation had occurred. If Customer fails to accept Products and if Gaumard decides to store ordered Products, Customer shall be responsible for Gaumard's reasonable insurance, handling, and storage charges. If Gaumard elects not to store ordered Products, Gaumard may arrange shipment and storage in a bonded warehouse at Customer's sole risk and expense.

6. Delay of Performance. The Parties' obligations under this Agreement are subject to force majeure, including but not limited to, civil insurrection, terrorism, fire, flood, labor disputes, shortages, delays of suppliers or contractors, or government priority systems, actions taken or threatened by any governmental agencies, acts of God or other contingencies or acts not within the sole control of the Parties. Gaumard reserves the right during any shortage period to (a) make Supplies available to Customer (as it sees fit) without any liability to Customer, and (b) to make substitutions and modifications in the specification of any Products, provided such substitutions or modifications do not materially affect the performance of Products.

7. WARRANTIES. Gaumard warrants that if a Product proves to be defective in material or workmanship within one year from the date on which title to the Product passes to the Customer ("Warranty Period"), Gaumard will, at Gaumard's option, repair or replace the Gaumard product. This limited warranty covers all defects in material and workmanship in the Gaumard product, except: (a) Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product; (b) Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product; and (c) Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative. Replacement parts are warranted for the remainder of the Warranty Period or ninety (90) days from shipment, whichever is longer. Services are warranted to be supplied in a workman-like manner. Gaumard does not warrant that use of the Products will be uninterrupted or error-free, or that the Products will operate with non-Gaumard authorized third-party products. THE FOREGOING WARRANTIES ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR

PURPOSE, OR NON-INFRINGEMENT. SUCH LIMITED WARRANTY IS GIVEN SOLELY TO THE ORIGINAL CUSTOMER AND IS NOT GIVEN TO ANY THIRD PARTY INCLUDING, WITHOUT LIMITATION, SUBSEQUENT PURCHASERS OR USERS OF THE PRODUCTS OR CUSTOMERS OF THE CUSTOMER. THIS WARRANTY IS VOID UPON TRANSFER OF PRODUCT BY CUSTOMER TO ANY OTHER ENTITY. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES SO THE ABOVE EXCLUSIONS MAY NOT APPLY TO CUSTOMER. These warranties do not apply to any Products that are supplied on a pre- release or "as-is" basis.

8. Warranty Claims and Remedies. In the event of any warranty claim, Gaumard will replace with new or repaired items any Product part or component that is in breach of the above limited warranties. Alternatively, Gaumard may elect to repay or credit to Customer an amount equal to the purchase price of the defective Product. Items replaced shall become Gaumard property. All claims shall be initiated by contacting Gaumard within the applicable Warranty Period and within thirty (30) days after discovery of the non- conformity. If Customer has failed to notify Gaumard within the Warranty Period, then Customer shall be barred from instituting any action thereafter. Customer shall not return the Product to Gaumard without prior authorization from Gaumard. If the necessary repairs to the Product are covered by this limited warranty, then Customer will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then Customer will be liable for all repair costs in addition to costs of shipping and handling. Upon request, Gaumard must be given access to and an opportunity to inspect the Product and any working areas and storage areas. These remedies shall comprise Gaumard's entire liability and Customer's exclusive remedy for breach of warranty and are in lieu of any other remedies at law or equity.

9. LIMIT OF LIABILITY. GAUMARD SHAL®L NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, PUNITIVE, EXEMPLARY, OR CONSEQUENTIAL LOSSES, DAMAGES, OR EXPENSES (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, DATA, OR USE), DIRECTLY OR INDIRECTLY ARISING FROM THE SALE, HANDLING, SERVICE, OR USE OF PRODUCT OR SERVICES ORDERED OR FURNISHED, OR FROM ANY CAUSE RELATING THERETO. EXCEPT FOR PERSONAL INJURY OR DEATH TO THE EXTENT RESULTING FROM GAUMARD'S NEGLIGENT OR INTENTIONALLY WRONGFUL ACTS OR OMISSIONS, IN NO EVENT SHAL®L GAUMARD BE LIABLE UNDER ANY LEGAL THEORY OR FOR ANY CAUSE RELATED TO A PRODUCT OR

SERVICE, WHETHER BASED UPON WARRANTY, CONTRACT, TORT, NEGLIGENCE, OR OTHER THEORY, EVEN IF ADVISED OF THE POSSIBILITY THEREOF, FOR ANY AMOUNT IN EXCESS OF THE PRICE, FEE, OR CHARGE RECEIVED BY GAUMARD FOR SUCH PRODUCT OR SERVICE.

10. Governmental Authorizations. Customer is responsible for compliance and costs associated with all required licenses, permits, or other governmental authorizations, including but not limited to, any license or certification needed for Customer to use the Product, and any export or import license, exchange permit, or the like ("Licenses"), even if applied for by Gaumard on Customer's behalf. If any authorization is delayed, denied, revoked, restricted, or not renewed, Gaumard shall not be liable, and Customer is not relieved of its obligations. Customer represents and agrees that it will handle all Product and technical data related to the Licenses so that it conforms to all applicable U.S. laws and regulations, including U.S. export licensing laws and the U.S. Foreign Corrupt Practices Act. Customer shall not trans-ship, divert, re-export or otherwise dispose of any U.S. origin goods or technology obtained from Gaumard except as U.S. laws and regulations expressly permit.

11. Indemnity.

a. Gaumard agrees to indemnify, defend and hold Customer, its officers, directors, employees, agents and contractors harmless from and against all loss, damage, liability, cost and expense (including reasonable attorneys' fees and expenses) by reason of any claims or actions by third parties against Customer for (1) bodily injury or death, and damage, loss or destruction of any real or tangible personal property, which third party claims arise out of or relate to Gaumard's gross negligence or willful misconduct or (2) infringement or misappropriation by Gaumard of any intellectual property rights under this Agreement.

b. Customer agrees to indemnify, defend and hold Gaumard, its officers, directors, employees, agents and contractors harmless from and against all loss, damage, liability, cost and expense (including reasonable attorneys' fees and expenses) by reason of any claims or actions by third parties against Gaumard for (1) bodily injury or death or damage, loss or destruction of any real or tangible personal property, which third party claims arise out of or relate to Customer's gross negligence or willful misconduct; (2) infringement or misappropriation by Customer of any intellectual property rights; or

(3) Customer's or its customer's use of the Products or Services, including without limitation, defamation, libel, slander, obscenity, pornography, or violation of the rights of privacy or publicity, or spamming or any other tortious or illegal conduct.

12. Software License. For purposes of these Terms, the term "Software" includes all Gaumard computer software, firmware, and associated documentation, whether in printed or machine-readable form, supplied by reason of this Agreement or for use in connection with Equipment or Services. To the extent the Product includes Software, Customer's use of the Software is governed by the Gaumard End User License Agreement attached as Exhibit A to these Terms.

13. Confidential Information. Customer shall maintain the confidentiality of any information provided or disclosed by Gaumard relating to the Software (as defined above), business or customers of Gaumard, as well as this Agreement and its terms (including the pricing and other financial terms under which the Customer will be obtaining the Services hereunder). Customer shall use reasonable care to protect the confidentiality of Gaumard's information disclosed, but no less than the degree of care it would use to protect its own confidential information, and shall only disclose Gaumard's confidential information to its employees and agents having a need to know this information and who are subject to confidentiality agreements having terms at least as restrictive as those contained herein. The obligations of confidentiality set forth herein shall not apply to any information in the public domain at the time of disclosure.

14. Intended Uses. Products are only intended for the uses described in the applicable user's manual or instructions for use. Customer assumes all risks associated with non-listed uses of Products and hereby indemnifies and holds Gaumard harmless from any claim associated with such non-listed uses.

15. Compliance with Laws. Gaumard and Customer agree to comply with all federal and state laws that govern the enforceability and performance of this Agreement.

16. HIPAA Compliance. As of the Effective date, the Parties are not planning to transfer any personal patient

information between them. However, the Parties understand and agree that this Agreement may become subject to the Health Insurance Portability and Accountability Act of 1996 as amended ("HIPAA"), the privacy and security regulations promulgated thereunder, including 45 C.F.R. 160, 162 and 164, as amended (the "HIPAA Regulations"), and Title XIII of Division A and Title IV of Division B (the "Health Information Technology for Economic and Clinical Health Act ("HITECH"), part of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5) ("ARRA"). The Parties agree to strictly comply with HIPAA and to execute any documents that may be required by HIPAA, HITECH, and any other applicable federal or state privacy laws and regulations. The Parties agree that if they directly or indirectly gain access to Protected Health Information ("PHI") held by the other Party during any interaction, the receiving Party will keep the PHI confidential under the terms of this Agreement

17. State Reporting and Disclosure Laws. Unless otherwise noted in this Agreement, the cost of any Product training provided by Gaumard shall be included in the purchase price of the Product where applicable. Customer acknowledges and agrees that state reporting laws may require Gaumard to disclose certain aspects of this arrangement.

18. Fraud and Abuse. Gaumard hereby certifies that it is not currently a listed vendor in the: (a) Federal General Services Administration's "List of Parties Excluded from Federal Procurement or Nonprocurement Programs" in accordance with Presidential Executive Orders 12549 and 12689 "Debarment and Suspension;" and (b) in the Office of the Inspector General of the Department of Health and Human Services' "List of Excluded Individuals/Entities." Any discounted pricing terms offered under this Agreement may be a "discount or other reduction in price" under the Federal Anti-Kickback Statute, 42 U.S.C. § 1320a-7b(b). Customer shall take all actions necessary to comply with the Anti-Kickback Statute discount safe harbor regulations, 42 C.F.R. § 1001.952(h), including but not limited to, (1) maintaining accurate records reflecting the pricing terms of items and Services purchased under this Agreement, (2) fully and accurately report any discount received under this Agreement if applicable, and (3) make available information provided to Customer by Gaumard concerning cost reports and other filings with the government, including but not limited to, the Secretary of the U.S. Department of Health and Human Services or other state agencies.

19. Bankruptcy. Except as may be prohibited by applicable bankruptcy laws, a Party to this Agreement may elect to terminate this Agreement (including any Purchase Orders) if any of the following situations arise: (1) the other Party becomes insolvent or is unable to pay debts as they become due; (2) a voluntary or involuntary bankruptcy proceeding is instituted by or against a Party hereto; or (3) an appointment of a receiver or assignee for the benefit of creditors occurs on behalf of a Party hereto.

20. Waiver and Severability. If either Party fails to perform obligations under this Agreement, such nonperformance shall not affect the other Party's right to enforce performance at any time. Waiver of any remedy or material breach of any subject matter contained in this Agreement shall not be viewed as a waiver unless agreed to by the Parties in writing. Each provision of this Agreement is separate and independent of one another, and the unenforceability of any provision will not affect the enforceability of any other provision. If any provision is held to be excessively broad or unenforceable, such provision shall be modified so that it is enforceable to the fullest extent possible by law.

21. Assignment. Customer shall not assign this Agreement without the prior written consent of Gaumard, which consent shall not be unreasonably withheld or delayed. Subject to the foregoing, the rights and obligations herein will be binding upon the successors and assigns of Customer.

22. Notices. Any required notices will be given in writing to Gaumard as set forth in the applicable Gaumard Purchase Order or other purchasing document.

23. Governing Law. Upon execution, this Agreement shal®l be governed and viewed under the laws of the State of Florida without reference to its conflict of laws provisions. Customer and Gaumard specifically agree that any action relating to the relationship between the Parties, the Agreement, or Products provided, purchased or licensed hereunder, shall be brought and tried in the Courts of Dade County, Florida. Customer waives all objections to, and consents to the jurisdiction of such Courts.

24. Miscellaneous. See applicable Gaumard Purchase Order documents, Gaumard Warranty documents, and Gaumard Cares Service Plan documents for other terms and conditions, which may include, but are not limited to: Term, Termination, Customer Training and Support, and Product Repairs and Tune Ups.

8.2 END USER LICENSE AGREEMENT

GAUMARD END USER LICENSE AGREEMENT

This End User License Agreement ("EULA") sets forth the respective rights and responsibilities between the entity named in the Purchase Order associated with this EULA ("End User") and Gaumard Scientific Company, Inc., a Florida corporation ("Gaumard"), relative to the Gaumard Software (as defined below). This EULA is effective as of the date Gaumard accepts and confirms the Purchase Order (the "Effective Date"). BY USING THE GAUMARD SOFTWARE, END USER IS AGREEING TO BE BOUND BY THE TERMS OF THIS EULA. IF END USER DOES NOT AGREE, END USER MAY NOT USE THE GAUMARD SOFTWARE.

1. Definitions.

1.1 "Gaumard Documentation" means the Gaumard user and operations manuals, guides, and related materials provided by Gaumard to End User to

facilitate use of the Gaumard Products.

1.2 "Gaumard Equipment" means Gaumard hardware components for medical simulation and training, including manikins and associated instrumentation, and other hardware and tangible products sold by Gaumard to End User.

1.3 "Gaumard Products" means Gaumard Software licensed and Gaumard Equipment sold or otherwise made available by Gaumard to End User currently or in the future.

1.4 "Gaumard Software" means the object code form of computer programs and Gaumard Documentation owned by Gaumard or its licensors and licensed to End User in accordance with this EULA. Gaumard Software includes (a) computer programs embedded in firmware in the Gaumard Equipment; (b) computer programs embedded in a separate medium (such as CD or flash drive) for use in conjunction with the Gaumard Equipment; (c) computer programs downloaded or received via mail from Gaumard; (d) computer programs used on servers storing or processing data related to the Gaumard Products; and (e) computer programs used to create and manage a network for the Gaumard Equipment, interface with the components of the Gaumard Equipment, manage and compute location information related to the Gaumard Equipment, and monitor health of the Gaumard Equipment.

2. Software License and Restrictions.

2.1 License. Subject to End User's compliance with the terms and conditions of this EULA, the Gaumard Sales Terms and Conditions, the Purchase Order, and the Gaumard Cares Service Plan Agreement, Gaumard grants End User a non-exclusive, non-transferable (except as otherwise set forth herein), personal license to execute and use the Gaumard Software for End User's internal purposes, but only so long as the Gaumard Software is installed on the Gaumard Product on which it was originally installed. End User may not, directly or indirectly, sell, sublicense, display, timeshare, loan, lease, distribute, or create derivative works of the Gaumard Software.

2.2 Ownership. All rights, title, and interest in and to the Gaumard Software, and any derivative works thereof, whether created by Gaumard, End User, or a third party, will remain at all times solely and exclusively owned by Gaumard. Nothing in this EULA or the Purchase Order will be construed to grant End User any rights of any kind with respect to the Gaumard Software, except as expressly set forth in this EULA.

2.3 Reverse Engineering and Other Restrictions. End User will not, and will not allow any third party to, tamper with, modify, decompile, disassemble, derive the source code of, reverse engineer, or attempt to obtain the internal design of the Gaumard Software or Gaumard Products for any purpose whatsoever (collectively, "Restricted Acts"). If applicable law permits End User to take any of the Restricted Acts notwithstanding the previous prohibition, and End User wishes to take any Restricted Act notwithstanding the previous prohibition, End User will first provide Gaumard with thirty (30) days prior written notice. Gaumard may terminate this EULA at any time during such notice period without liability arising from such termination. The parties agree that all information needed for interoperability is available from Gaumard in accordance with applicable government directives.

2.4 Updates. From time to time Gaumard may develop new versions or updates for the Gaumard Software that may be made available to the End User as agreed under the terms of the Gaumard Sales Terms and Conditions, Gaumard Purchase Order documents, Gaumard Warranty documents, or Gaumard Cares Service Plan documents. Unless otherwise agreed to by Gaumard, End User shall be responsible for installing the provided new versions or updates for the Gaumard Software.

2.5 Proprietary Notices. End User agrees to maintain and reproduce on all copies of the Gaumard Software, any names, logos, copyright notices, trademarks, other proprietary markings, and legends that appear on the Gaumard Software.

2.6 Control of Duplication. End User will not, nor will it allow any third party to, circumvent the protection controlling the duplication or use of the Gaumard Software, for example and without limitation, any software lock controlling the number of copies End User may make of the Gaumard Software.

2.7 No Source Code. End User acknowledges and agrees that its rights under this EULA do not include rights to source code. In its exercise of the rights granted under this EULA, End User agrees not to take any action that would result in any requirement to disclose or make available to other parties the Gaumard Software in source code format.

2.8 Certification. Upon thirty (30) days written notice to End User from Gaumard, End User shall certify End User's compliance with the restrictions and obligations in this EULA. Such requests will not occur more frequently than once per calendar year. If End User has used the Gaumard Software in violation of this EULA, End User shall, in addition to any other remedies Gaumard may have, pay Gaumard additional fees for the excess use according to Gaumard's then-current price list and policies, plus a late payment charge of one percent (1.0%) per month (or the highest amount allowed by applicable law, if lower) for each month of excess use from the date of initial excess use.

2.9 Privacy and Recordings. End User will comply with all applicable laws, rules and regulations related to privacy, publicity and data protection related to use of the Gaumard Products. End User shall not use the Gaumard Software to record or collect personal data from any person in violation of End User's policies or privacy statements. End User shall receive express consent from all persons recorded by the Gaumard Software sufficient for End User's use, storage, and distribution of such recordings.

3. Term and Termination

3.1 Term. This EULA commences on the Effective Date and continues perpetually, unless terminated earlier in accordance with the terms hereof.

3.2 Termination for Cause. This EULA is automatically terminated by Gaumard if the other party materially breaches this EULA, the Gaumard Sales Terms and Conditions, the Purchase Order, or the Gaumard Cares Service Plan Agreement. In addition, Gaumard may terminate this EULA if (a) End User becomes insolvent or makes an assignment for the benefit of End User's creditors; or (b) a receiver is appointed or a petition in bankruptcy is filed with respect to End User and such petition is not dismissed within thirty (30) days.

3.3 Effect of Termination. Upon the termination of this EULA for any reason, all licenses granted in Section 2 above will immediately cease and terminate. Upon termination, End User will immediately cease using the Gaumard Software.

3.4 Survival. Sections 3 through 6 will survive the termination of this EULA.

4. Confidential Information; Trademarks.

4.1 Confidential Information. End User acknowledges and agrees that the Gaumard Software is confidential information and contains trade secrets of Gaumard. End User agrees to (i) hold the Gaumard Software in the strictest confidence, (ii) not disclose the Gaumard Software to any third party for any purpose, and (iii) use at least the same security measures as End User to protect its own confidential and trade secret information but no less than reasonable measures to protect the confidentiality of the Gaumard Software. End User agrees and acknowledges that any breach of the provisions regarding ownership or confidentiality contained in this Agreement shall cause Gaumard irreparable harm and Gaumard may obtain injunctive relief without the requirement to post a bond as well

as seek all other remedies available to Gaumard in law and in equity in the event of breach or threatened breach of such provisions.

4.2 Trademarks. End User may not use Gaumard's trademarks, logos, service marks, or names in press releases, web sites, marketing, or other forms of public materials without the prior written consent of Gaumard. All use of the Gaumard trademarks and all goodwill associated with them will inure solely to the benefit of Gaumard.

5. Disclaimer; Limitation of Liability; Infringement Indemnification

5.1 Warranty and Disclaimer. For a period of twelve (12) months from the Effective Date, Gaumard will (a) provide all updates to the Software that are made available generally, and (2) use reasonable efforts to fix or provide a workaround for any Gaumard Software defect or bug which prevents operation in substantial conformity with the Gaumard Documentation. Other than the above, the Gaumard Software is provided "as- is," with no express or implied warranties of any kind, including the warranties of merchantability, fitness for a particular purpose, or non-infringement.

5.2 Limitation of Liability. THE TOTAL LIABILITY, IF ANY, OF GAUMARD TO END USER OR ANY THIRD PARTY FOR ALL DAMAGES BASED ON ALL CLAIMS, WHETHER ARISING FROM BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, INDEMNITY, STRICT LIABILITY, TORT, OR OTHERWISE, ARISING FROM THE GAUMARD PRODUCTS IS LIMITED TO ONE HUNDRED DOLLARS. IN NO EVENT WILL GAUMARD BE LIABLE TO END USER OR ANY THIRD PARTY FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF REVENUES, LOSS OF PROFITS, OR LOSS OF DATA, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

5.3 Infringement Indemnification. Gaumard will, as further described below, indemnify, defend, and hold End User harmless, at its expense, against any claim or suit brought by a third party against End User alleging that any Gaumard Software furnished under this EULA infringes the United States patent, trademark, copyright or other intellectual property right of a third party. Gaumard will pay all settlements entered into or damages finally awarded, including attorneys' fees and costs, based on any such claim or suit; provided that End User gives Gaumard prompt written notice of such claim and gives Gaumard information, reasonable assistance ,and sole authority to defend or settle the claim. In defense or settlement of the claim, Gaumard may obtain for End User the right to continue using the Gaumard Software, replace or modify the Gaumard Software so that it becomes non-infringing, or, if such remedies are not reasonably available, grant End User a refund for the associated Gaumard Products (depreciated over three years) and accept their return. Gaumard will not have any liability if the alleged infringement is based upon (a) the use or sale of the Gaumard Software in combination with other products or devices not furnished by or approved by Gaumard; (b) the use of the Gaumard Software in a manner for which they were not designed as described by the Gaumard Documentation; (c) any modification of the Gaumard Software not performed by or authorized by Gaumard;

(d) any use of Gaumard Software by End User after End User learns of such allegation of infringement; or (e) any failure by End User to utilize a non-infringing version of the Gaumard Software made available by Gaumard along with notice that such update is non-infringing. The obligations set forth in this Section 5.3 are Gaumard's sole obligations, and End User's sole and exclusive remedy, for the Gaumard Software infringing third party intellectual property rights.

6. Miscellaneous.

6.1 Binding Effect; Assignment. This EULA will be binding upon, and inure to the benefit of, End User's and Gaumard's respective permitted successors and permitted assigns. Neither party may assign or transfer this EULA or any of the rights, privileges, duties or obligations under this EULA without the prior written consent of the other party, except that either party may assign this Agreement to any entity controlled by, controlling, or under common control with such party at such time, as well as in connection with the sale, transfer, merger, or acquisition, whether by operation of law or otherwise, of substantially all of the assets of such party. In addition, if End User transfers the Gaumard Product on which the Gaumard Software is installed to a third party, End User may assign this EULA to such third party, provided that the third party agrees in writing with Gaumard to be bound by this EULA.

6.2 Notices. Any written notice required by this EULA will be deemed made (a) when delivered by personal service, (b) one (1) business day after being sent by recognized international overnight courier service (such as FedEx), or (c) when received, if sent by certified or registered mail, postage prepaid, return receipt requested. Any such notice given to a party sHAL®l be sent to the addresses on the attached Purchase Order. By giving to the other party written notice thereof, the parties hereto and their respective permitted successors and assigns will have the right from time to time to change by written notice their respective addressee or address for notices.

6.3 Applicable Law. The validity of this EULA and the rights, obligations and relations of the parties hereunder sHAL®l be construed and determined under and in accordance with the substantive laws of the State of Florida. All

disputes arising under or related to this EULA sHAL®l be resolved exclusively in the State or Federal Courts located in Dade County, Florida. The parties consent to the jurisdiction and venue of such courts and waive any claims as to inconvenient forum. The judgments of such courts may be enforced in any court of competent jurisdiction.

6.4 Export Control. End User will not export or re-export the Gaumard Software, including any technical data, except as authorized and permitted by, and in compliance with, the laws and regulations, including but not limited to all export and re-export laws and regulations, of the United States.

6.5 Severability. If any provision of this EULA is invalid or unenforceable in any circumstances, it will be interpreted as much as possible to reflect the intent of the parties, and its application in any other circumstances and the remaining provisions of this EULA will not be affected thereby.

6.6 Entire Agreement. This EULA constitutes the entire agreement and understanding of the parties relating to the subject matter thereof. This EULA supersedes all prior written and oral agreements and all other communications between End User and Gaumard (or a Gaumard distributor) regarding the subject matter hereof. No contradictory terms and conditions of any purchase order, invoice, or other document issued by End User relating to the subject matter of this EULA sHAL®l be binding, unless agreed by the parties.

6.7 Waiver of Breach. No waiver by a party of any breach of this EULA will constitute a waiver of any other breach of the same or other provisions of this EULA. No waiver by a party will be effective unless made in a record signed or otherwise authenticated by an authorized representative of such party.

6.8 Relationship of the Parties. The parties are independent contractors. Nothing in this EULA or in the activities contemplated by the parties will be deemed to create an agency, partnership, employment or joint venture relationship between the parties. Neither party will have any responsibility nor liability for the actions of the other party except as expressly provided in this EULA. Neither party will have any right or authority to bind or obligate the other party in any manner or make any representation or warranty on beHAL®f of the other party. This EULA is made and entered into for the sole protection and benefit of Gaumard, its licensors and suppliers, and End User, and no other person or entity sHAL®l be a direct or indirect beneficiary of or sHAL®l have any direct or indirect cause of action or claim arising from this EULA.

All rights not expressly granted in this license agreement are reserved by Gaumard.

ACKNOWLEDGMENT

By installation of this software, you acknowledge that you have read and understand the foregoing and that you agree to be bound by its terms and conditions. You also agree that this agreement is the complete and exclusive statement of agreement between the parties and supersedes all proposed or prior agreements, oral or written, and any other communications between the parties relating to the license described herein.

8.3 EXCLUSIVE ONE-YEAR LIMITED WARRANTY

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

This limited warranty covers all defects in material and workmanship in the Gaumard product, except:

- Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
- Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product;
- Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

This one-year limited warranty is the sole and exclusive warranty provided by Gaumard for the accompanying Gaumard product, and Gaumard hereby explicitly disclaims the implied warranties of merchantability, satisfactory quality, and fitness for a particular purpose. Except for the limited obligations specifically set forth in this one-year limited warranty, Gaumard will not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory regardless of whether Gaumard has been advised of the possibilities of such damages. Some jurisdictions do not allow disclaimers of implied warranties or the exclusion or limitation of consequential damages, so the above disclaimers and exclusions may not apply and the first purchaser may have other legal rights.

This limited warranty applies only to the first purchaser of the product and is not transferable. Any subsequent purchasers or users of the product acquire the product “as is” and this limited warranty does not apply.

This limited warranty applies only to the products manufactured and produced by Gaumard. This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third parties. For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. However, third-party products are covered by the warranties provided by the respective third-party manufacturers and such warranties are transferred from Gaumard to purchaser upon purchase of the Gaumard product. Defects in third-party products are covered exclusively by the warranties provided by the third-parties. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Please contact the third-party manufacturer for information regarding the availability of extended warranties for third-party products.

Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard.

- In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:
- Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the
- Gaumard product to Gaumard without prior authorization.
- Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.

If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

Extended Warranty

In addition to the standard one year of coverage we offer a range of service plans through our Gaumard Cares program. For more information about Gaumard Cares service planes please contact customer service.

8.4 CONTACT TECHNICAL SUPPORT

Before contacting Technical Support, please make sure to have the following:

1. Your simulator's serial number
2. Access to the simulator for possible troubleshooting as needed

Technical Support

Email: support@gaumard.com
USA: 800-882-6655
INT: 01-305-971-3790

8.5 GENERAL INFORMATION

Sales and Customer Service

E-mail: sales@gaumard.com
USA: 800-882-6655
INT: 01-305-971-3790
Fax: 305-252-0755

Post

Gaumard Scientific
14700 SW 136 Street
Miami, FL 33196-5691
USA

Office Hours

Monday-Friday, 8:30am - 7:30pm EST (GMT-5)