Gaumard®
Simulators for Health Care Education

SUPER TORY® S2220

User Guide

Table of Contents

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.

Super TORY® S2220 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

Super TORY® S2220

- Gestational age: Full term neonate
- Weight: 8 lbs
- Length: 21 inches
- Smooth and supple full-body skin
- Tetherless and wireless
- 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~ 0.8 A, 50-60 Hz
  Ouput: 9V, 3.0 A

1.2 CARE AND 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. Re-charge 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 laying 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 day. Doing so will retard the formation of mold and prevent clogging of the system.

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 or the anterior and posterior 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 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 re-use 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, 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. If a simulated blood is used that contains sugar and/or other additives, it may cause a blockage and/or interruption of the vascular system.
- 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 with a 70:30 solution of clean water to isopropyl alcohol (IPA) at least once per month to prolong the life of the vasculature system.
- For more information regarding the replacement of veins and other consumable items, please contact technical support.

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 0	-
LMA	Size 1	Always lubricate the device using mineral oil to prevent airway skin tears and do not introduce fluids into the airway.
Oral Intubation	3.0 ETT cuffed, 3.5 ETT no cuff	Always lubricate the device using mineral oil to prevent airway skin tears and do not introduce fluids into the airway.
Nasal Intubation	8 Fr catheter/ 2.5 ETT no cuff	Always lubricate the device using mineral oil.
Nasogastric Tube	6-8 Fr Catheter	Always lubricate the device using mineral oil.
IV Arm System	22-24 gauge needle or smaller	The smaller the needle, the longer the life of the arm skin and veins may be prolonged.
Umbilical Cord	6 Fr catheter	Always lubricate the device using mineral oil. The volume capacity of the umbilical cord 2 mL.
IO System	15 gauge needle	It is recommended to replace the IO bone after each use (i.e., after drilling into the bone). However, to try to prolong the life of the IO bone sil-poxy or loc-tite glue may be used to reseal the holes.
Urinary System	5 to 8 Fr catheter	Always lubricate the device using mineral oil before inserting. The volume capacity of the urinary reservoir is 8 mL.
Chest Tube Insertion Site	Infant sized chest tube	The insert itself may be filled with an additional 1-2 mL of artificial blood. Once the insert is pierced, superficial blood return can be observed.
Scalp Vein Access	23 gauge needle	The Scalp Vein Access insert will return superficial blood.

1.5 ROUTINE MAINTENANCE SCHEDULE

Frequency	Procedure	Recommendations
Daily	Flushing vasculature.	Flush the blood/urine/other daily fluids daily with a 70:30 mixture of distilled water to isopropyl alcohol. To remove fluid from all reservoirs in totality, push air through (with a fill tube and syringe) in order to purge all the fluid.
Weekly	Head to Toe exterior cleaning of the simulator.	Wipe the simulator down with Isopropyl Alcohol Wipes (70%) sparingly. Additional items for cleaning include Lint-free Rags and Diluted Dish Soap with distilled water; apply the cleaning solution to the rag and wipe down the simulator's surface. (avoid contact around the eyes, eyebrows, and birth canal - if applicable).
Monthly	Battery Maintenance	If the simulator is placed in storage or is not actively being used, be sure to turn the simulator on, allow the battery charge to run down, and re-charge before storing/not using. 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.

2. Initial Setup

2.1 UNBOXING

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

Save ALL boxes and shipping materials Super TORY is shipped with in the event he may need to be sent in for repair.

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

- Avoid lifting the simulator by the arms as it could damage the shoulder joints.
- Rest the simulator on a patient bed or table capable of supporting the weight of a real patient.

2.2 PACKAGE CONTENTS

Item Name - Box 1	Item Count
S2220 Super TORY	1
Super TORY Transport Case	1
Post Detachment Navel	1
Pneumothorax Inserts (1L+1R, installed)	2
Scalp Insert (installed)	1
I/O Bone Inserts (1L+1R, installed)	1
AC/9V Battery Charger/Power Supply	1
Mineral Oil Lubricant	1
Artificial Blood Concentrate	1
A/P Defibrillation Adapter	1
Diaper	1
Baby Head Cap	2
Receiving Blanket	

Item Name - Box 2	Item Count
Wireless Tablet PC	1
Super TORY SLE Facilitator's Guidebook	1
Bump Case for Tablet PC	1
RF Communications Module	1
Super TORY user guide	

CO2 External Box	Item Count
CO2 External System	1
CO2 External System Extension	1
CO2 External System Holder	1
CO2CO2 External System Extension Adapter	1

Super TORY Accessories Box	Item Count
Scalp/IO/Umbilical Drainage Adapter	2
5cc syringe	1
Umbilical Cord Filling Tip	1
Urethral Filling Adapter	1
IV Drainage Adapter	1
Medical Tape	2
Blood Pressure Tube Adapter	1
Spare Pneumothorax Inserts (1R + 1L)	2
Spare Lower Left Arm	2
Male Genitalia	1
Spare I/O Bone Inserts (1R+1L)	2
Umbilical Cord	2
Adapter for Non-Snap ECG electrodes	4
Spare Scalp Inserts	2

2.3 CHARGING SUPER TORY

Connecting the Battery/Power Supply

Super TORY has an average battery runtime of approximately 4-6 hours. Total battery runtime is dependent upon changes in breathing rate, volumes, and seizures of the simulator. The battery charge will be displayed on the software toolbar after the connection with Super TORY has been established.

Super TORY's battery can ONLY be recharged using the battery charger included in the package and ONLY when the simulator is turned OFF.

It is recommended that Super TORY primarily rely on the charge of its battery for operation. In the instances of running a simulation that may run longer than the expected charge of the simulator, it is possible to plug the battery charger into Super TORY while it is turned ON so that it may act as a power supply to extend the life of the battery for the duration of the simulation. Once the simulation is over, please proceed to turn off the simulator and properly charge it.

To charge Super TORY:

1. Turn Super TORY off.

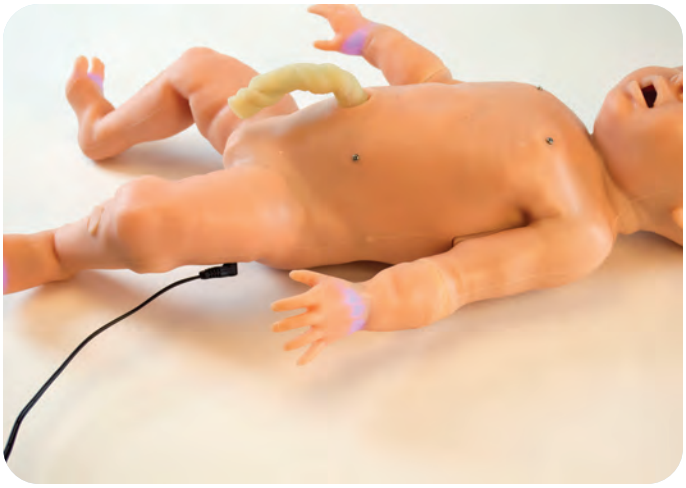
   Super TORY is off when not connected to the UNI software.

2. Plug the battery charger into a wall outlet/source of power.

3. Connect the battery charger cable to the charging port on Super TORY's left thigh.

4. Allow Super TORY to charge for approximately 4-5 hours or until the peripheral cyanosis lights stop flashing.

When Super TORY is charging, the peripheral cyanosis lights will flash and will transistion into a solid blue light when Super TORY is fully charged.



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 good practice to unplug the charger once the battery is 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 peripheral cyanosis transitions from flashing blue light to a steady, solid blue light.
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.

2.4 TURNING ON SUPER TORY VIA RF COMMUNICATION

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

Ensure that Super TORY is laying on a flat surface during the startup process so that the auto calibration is optimal.

2. Connect the simulator's USB RF Communications Module to the tablet PC. The control tablet transmits the startup and control commands to the simulator through the USB RF module.

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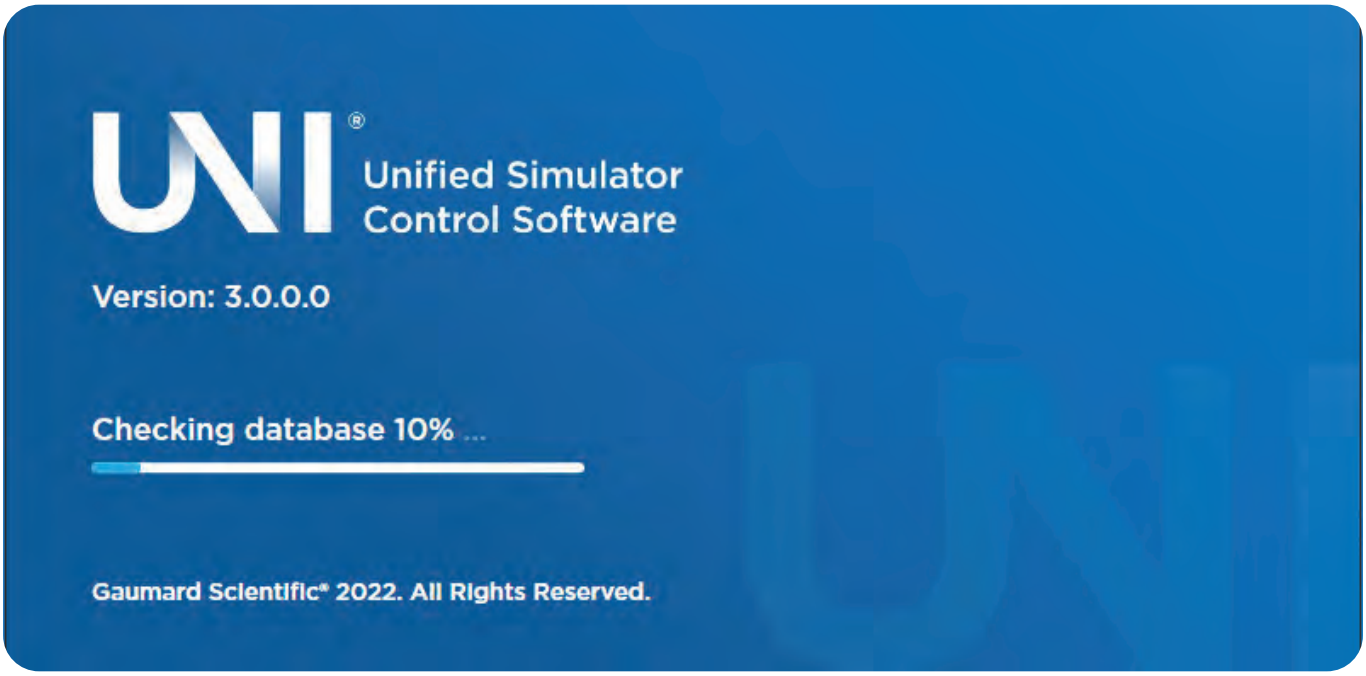
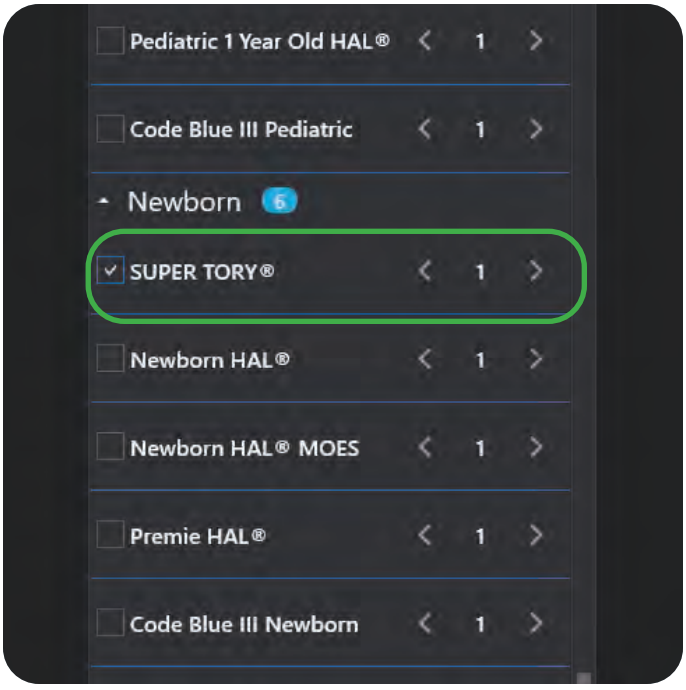
3. The UNI software is preloaded on the tablet which is used to initialize the simulator and control vital signs. Double click the UNI 3 icon on the tablet's home screen to start.

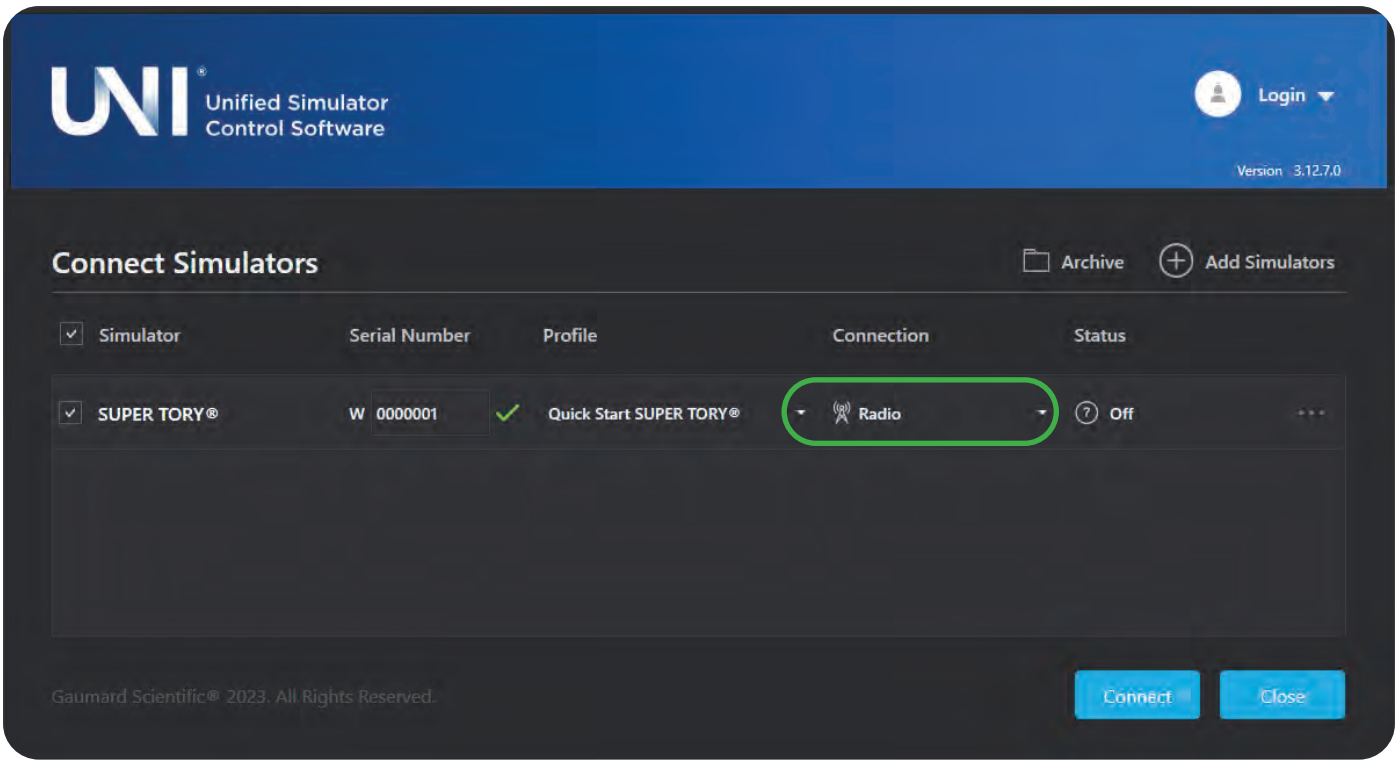
4. The UNI initialization window will appear. Allow UNI to load.



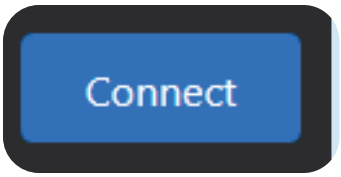
5.Click on the **+ Add Simulators** and select your simulator from the list.



6. Select **Radio** under the **Connection** drop-down.



7. Click **Connect** at the bottom. Super TORY will establish communication within one minute.



When selecting the appropriate profile, be sure that the correct serial number from your simulator is entered and click **Connect**. The serial number will be located inside Super TORY's left arm. Twist the lower left arm off and the serial number will be printed on the metal arm mechanism.

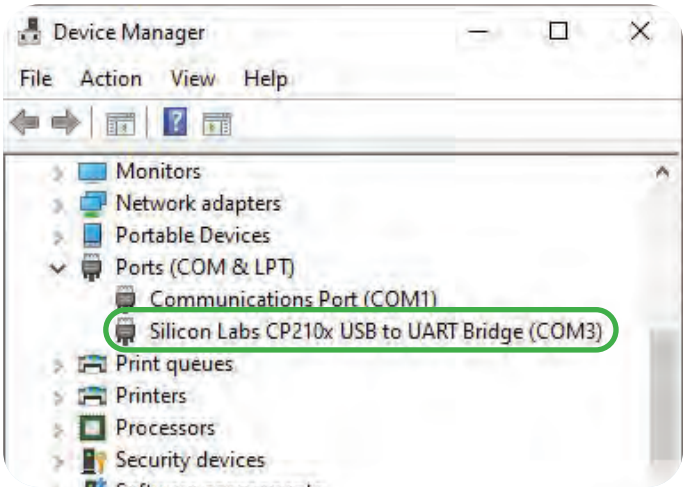
2.5 TURNING ON SUPER TORY VIA TCP/IP

Super TORY has the ability to set up their RF Communications Module and UNI connection remotely from their Bedside Virtual Monitor. This type of connection is only available for simulators that come standard with a Virtual Monitor or when the option for a Virtual Monitor is purchased.

To initialize your simulator via TCP/IP:

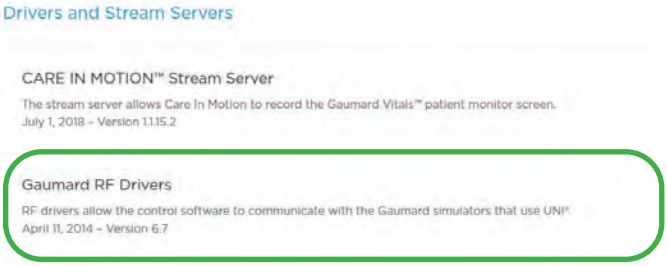
1. Gather the RF Communications Module, Bedside Virtual Monitor, and control tablet/PC.

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.

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

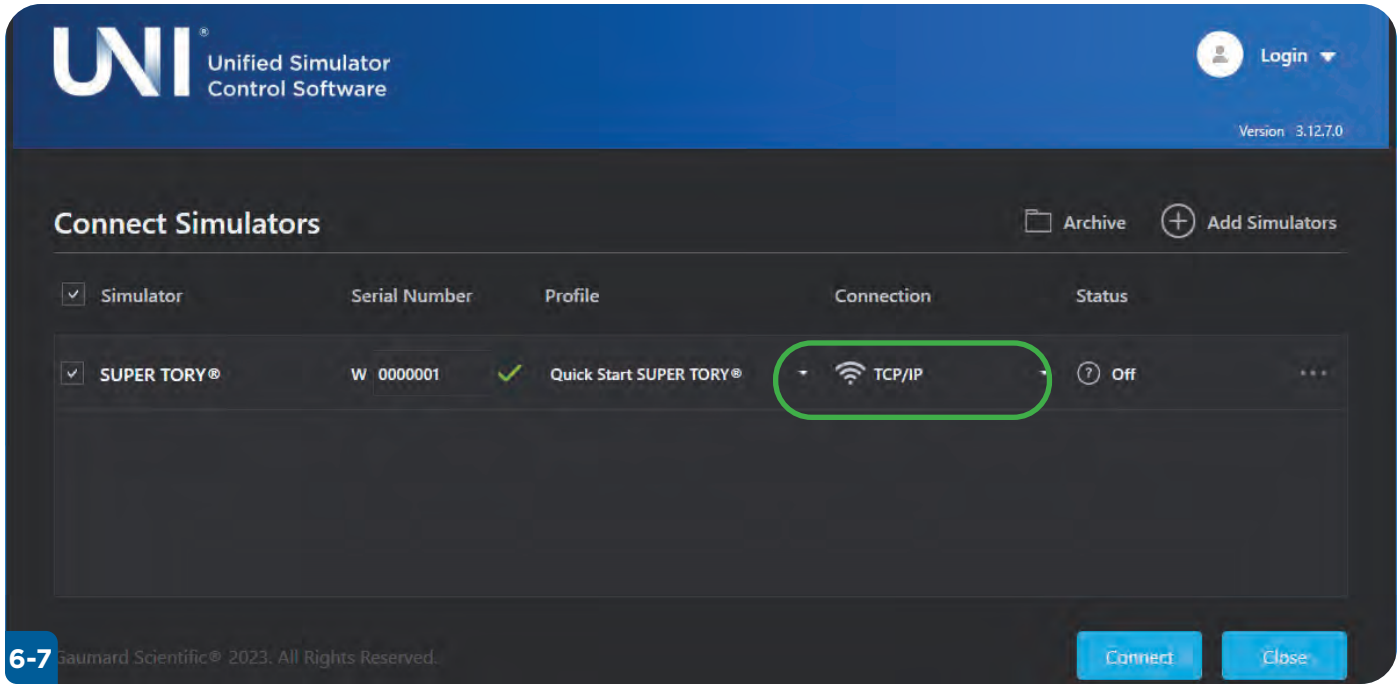


4. Verify that the Bedside Virtual Monitor and the UNI tablet/PC are connected to the same Wi-Fi network.

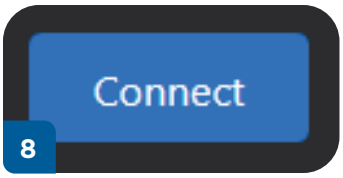
5. The UNI software is preloaded on the tablet which is used to initialize the simulator and control vital signs. Double click the **UNI 3** icon on the tablet's home screen to start.

6. The UNI initialization window will appear. Allow UNI to load and then click on the **+ Add Simulators** and select your simulator from the list.

7. Select **TCP/IP** under the **Connection** drop-down.



8. Click **Connect** at the bottom. Super TORY will establish communication within one minute.



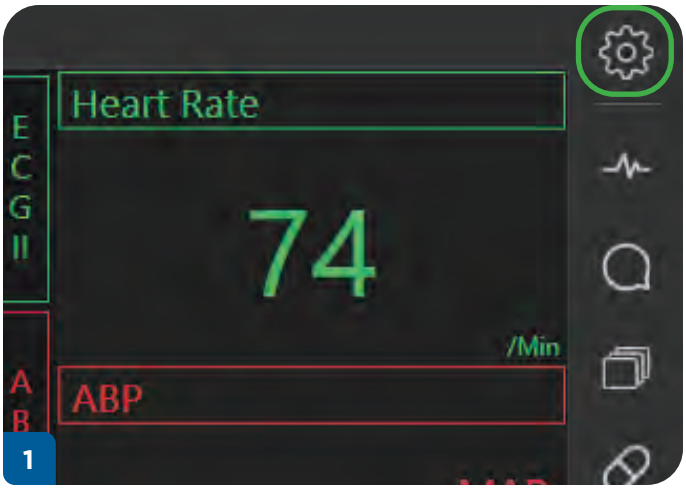
Do not touch Super TORY while the circumoral lights are flashing. The flashing lights indicate the autocalibration process. Once the lights stop flashing, Super TORY is ready for use.

Connecting UNI 3 and Gaumard Vitals

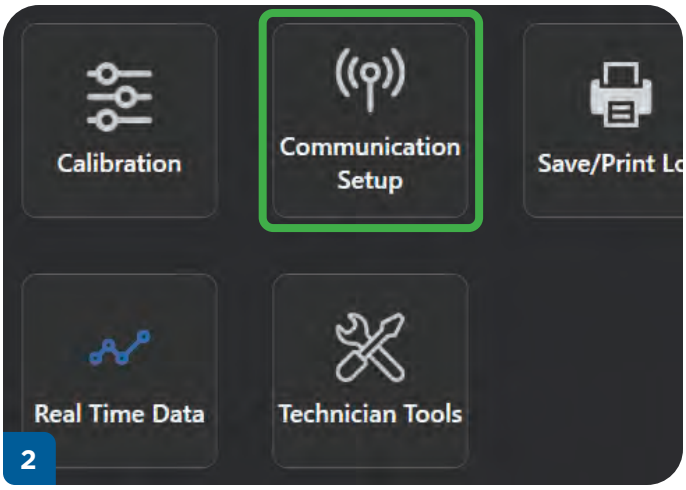
Once the steps are completed from the previous section, in order to complete this TCP/IP connection, UNI 3 and Gaumard Vitals need to be linked

To connect UNI 3 and Gaumard Vitals:

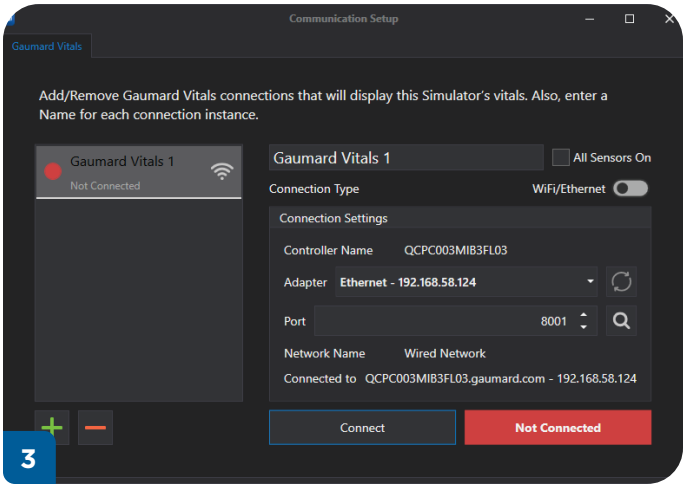
1. In UNI 3, click **Settings** in the upper right corner.



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



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



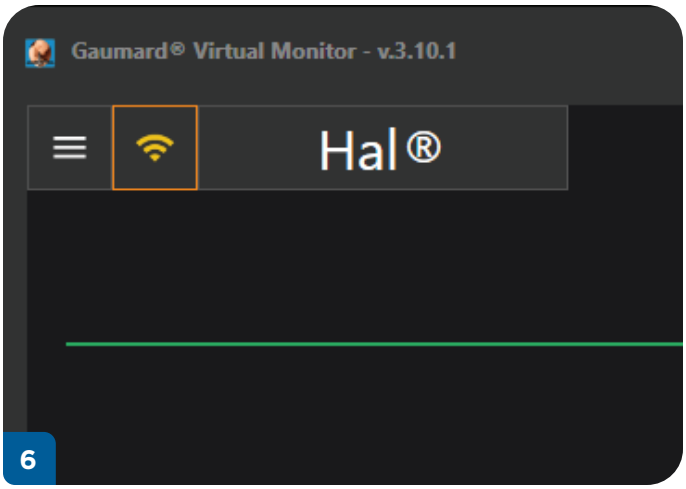
The selected **Adapter** needs to be the **Ethernet** option. In this example, the resulting Ethernet IP address is 192.168.58.124. This IP address number is what will be plugged into the **Communication Setup** on Gaumard Vitals so the software can communicate with each other.

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.

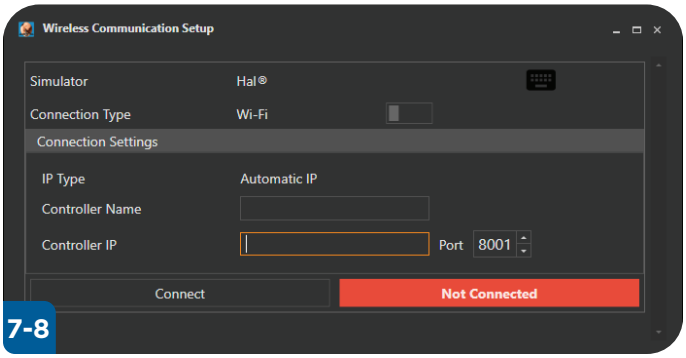
5. Double click on the Gaumard Vitals icon that is installed on the homescreen of the Bedside Virtual Monitor.

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

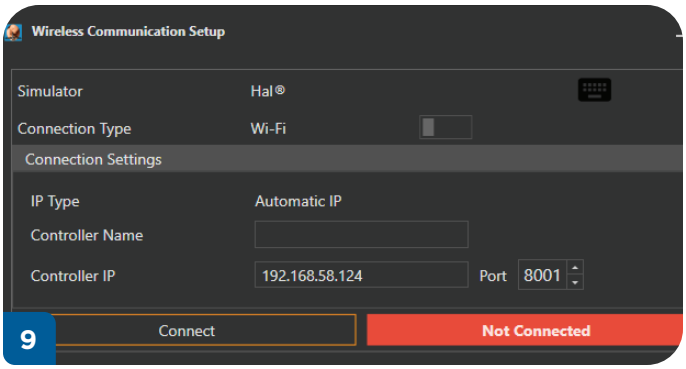


7. Enter into the **Controller IP**, the IP from the **Adapter** field on UNI 3 (step 3).

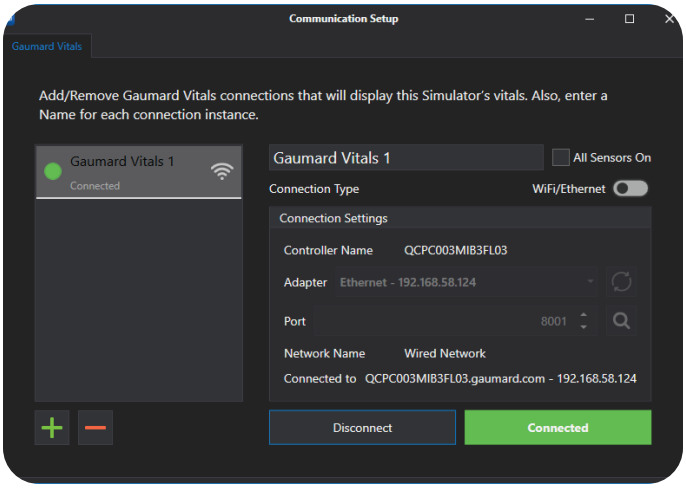
8. Check that the **Port** numbers are the same on UNI and Gaumard Vitals.

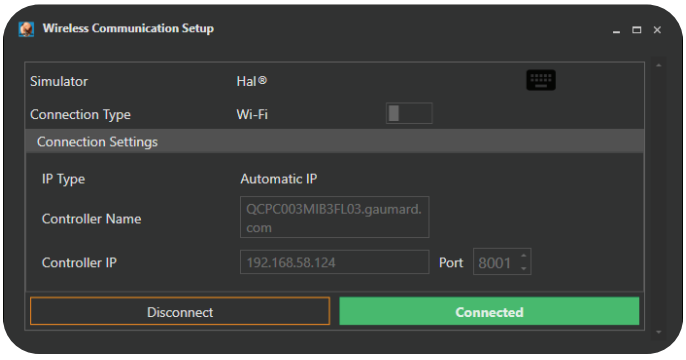


9. Click **Connect** on the **Communication Setup** windows on UNI 3 and Gaumard Vitals.



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

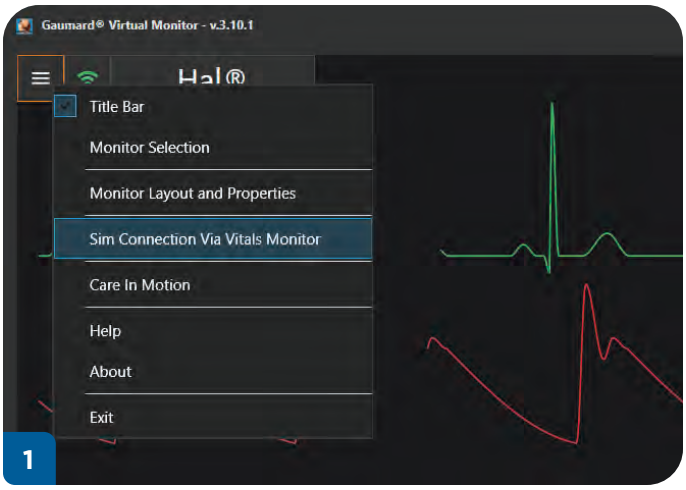




Completing the TCP/IP Connection

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

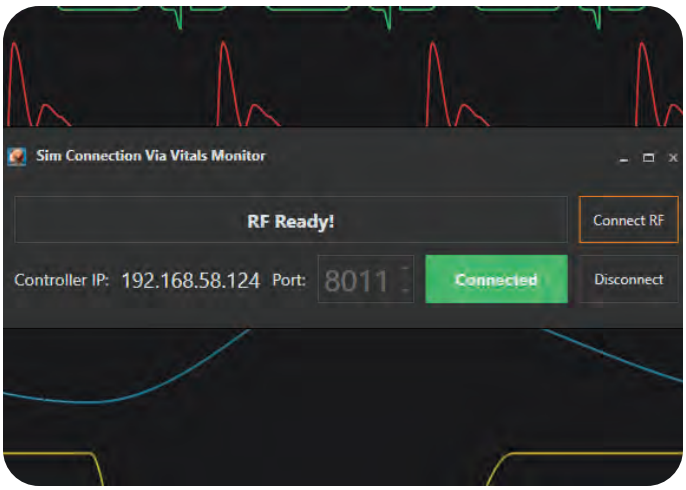
1. Click on the **Menu** in the upper left corner of Gaumard Vitals and select **Sim Connection Via Vitals Monitor**.



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.



Do not touch Super TORY while the circumoral lights are flashing. The flashing lights indicate the autocalibration process. Once the lights stop flashing, Super TORY is ready for use.

2.6 TURNING ON SUPER TORY VIA BLUETOOTH

Super TORY also has the capability to connect to its UNI tablet/PC via Bluetooth.

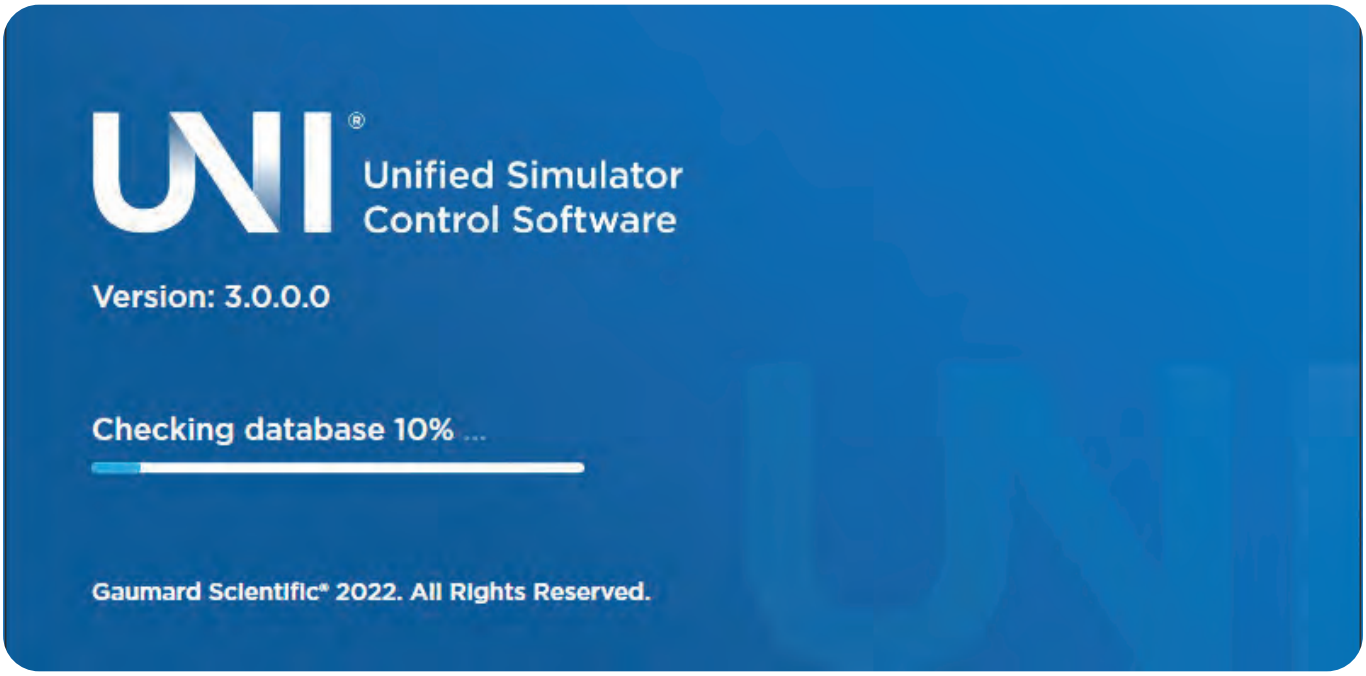
To establish a Bluetooth connection with Super TORY:

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

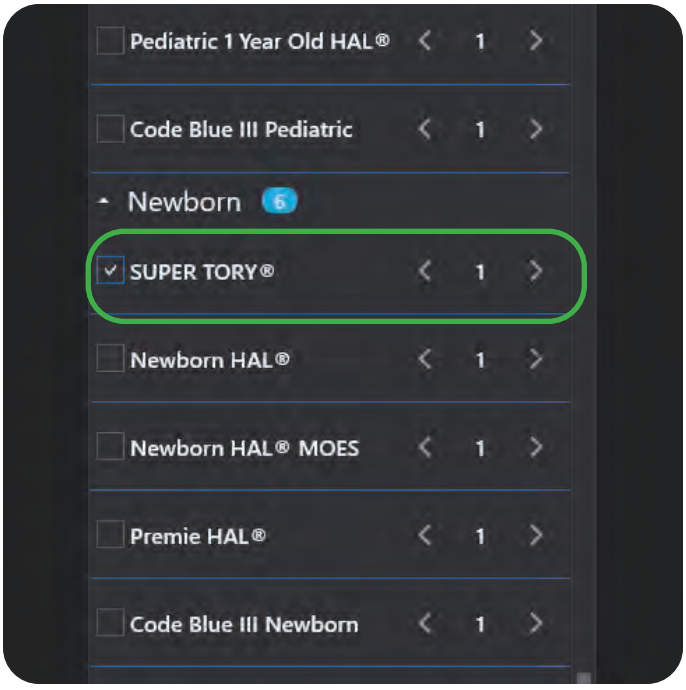
2. Disconnect the simulator's USB RF Communications Module from the tablet PC.

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

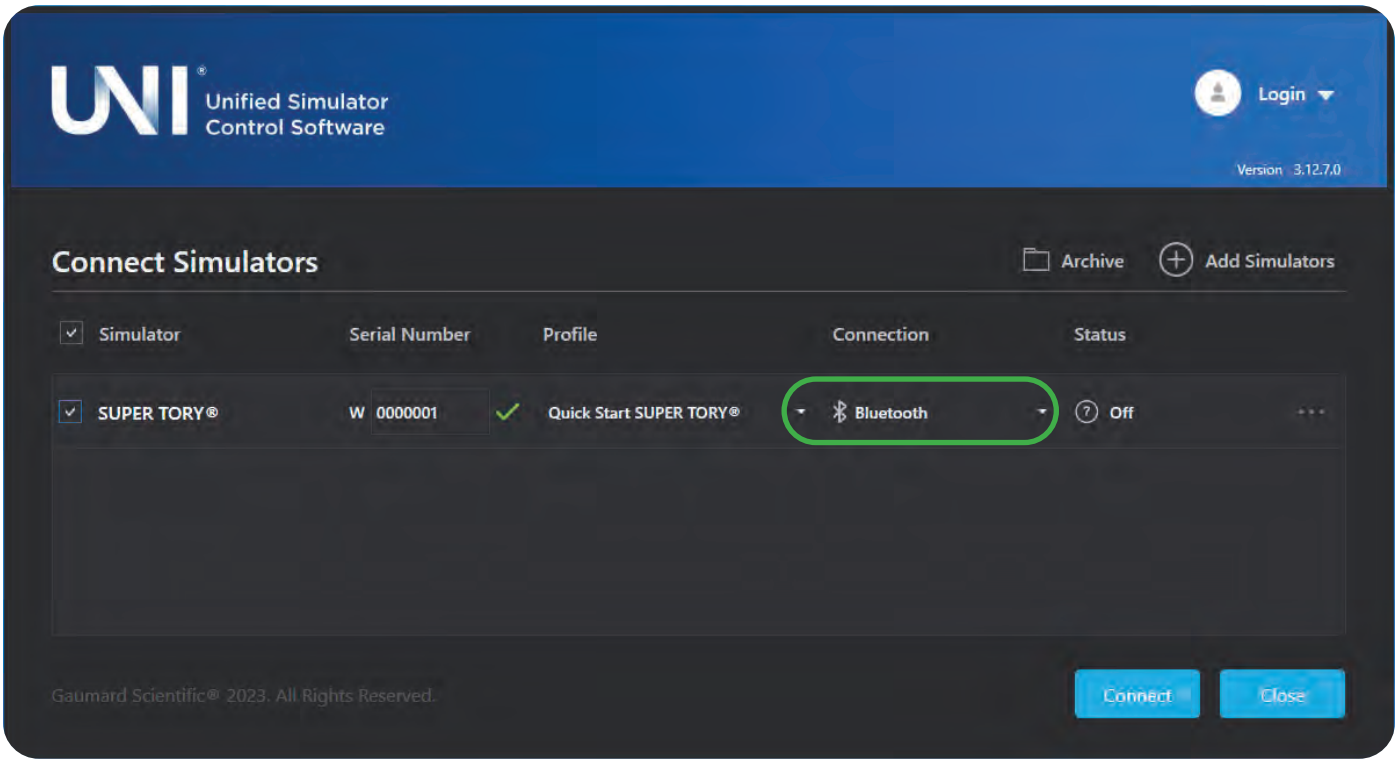
4. The UNI initialization window will appear. Allow UNI to load.



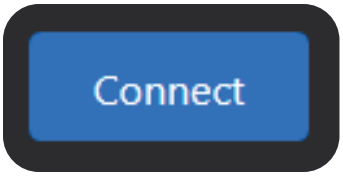
5. Click on the **+ Add Simulators** and select your simulator from the list.



6. Select **Bluetooth** under the **Connection** drop-down.



7. Click **Connect** at the bottom.



8. On Super TORY, long press on the left foot until it turns white.

After long pressing Super TORY's foot, a solid blue peripheral cyanosis will appear to indicate that the Bluetooth signal is activated.

Do not touch Super TORY while the circumoral lights are flashing. The flashing lights indicate the autocalibration process. Once the lights stop flashing, Super TORY is ready for use.

3. Working with Super TORY

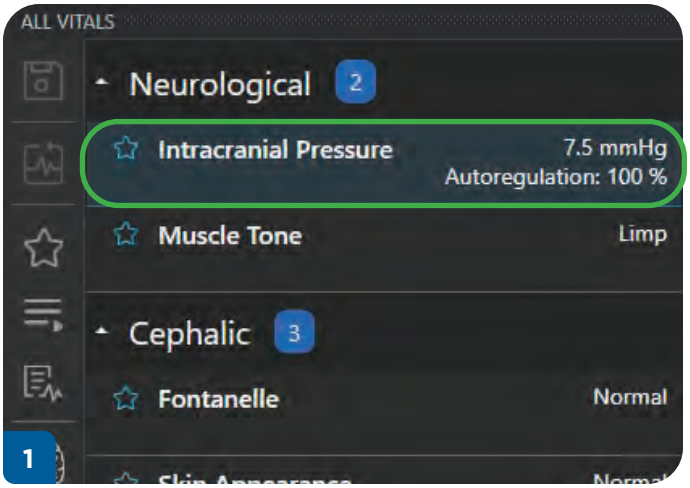
3.1 NEUROLOGICAL

3.1.1. Intracranial Pressure

Super TORY has the ability to virtually simulate intracranial pressure. After an injury to the brain, a patient may become swollen with blood and brain tissue. As the skull will not stretch like skin, it may become full and pressure will increase on the brain tissue. As such, **UNI** and **Gaumard Vitals** will recognize this simulation virtually with numerical vitals.

1. Under **Neurological**, click **Intracranial Pressure**.

Intracranial Pressure is a strictly virtual vital sign.



2. Use the slider bar to adjust the values of pressure and autoregulation.

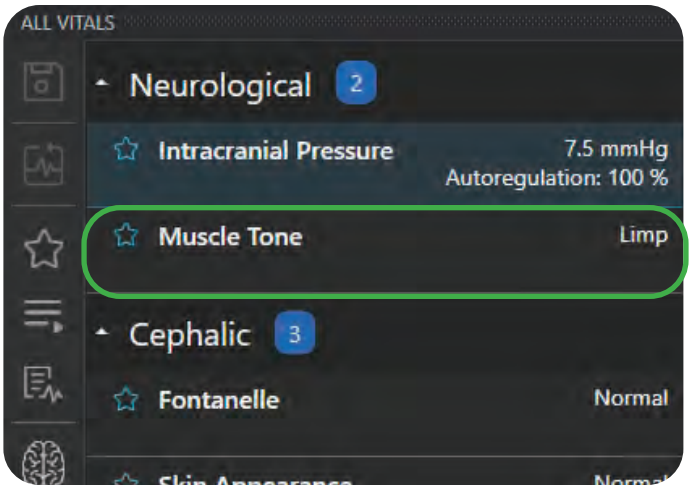
3.1.2. Muscle Tone

Muscle Tone is the amount of resistance or tension to movement in the muscles. If there is too much muscle tone, movements will be very stiff because the muscles are unable to relax. If there is not enough muscle tone, movements will appear very limp and "floppy".

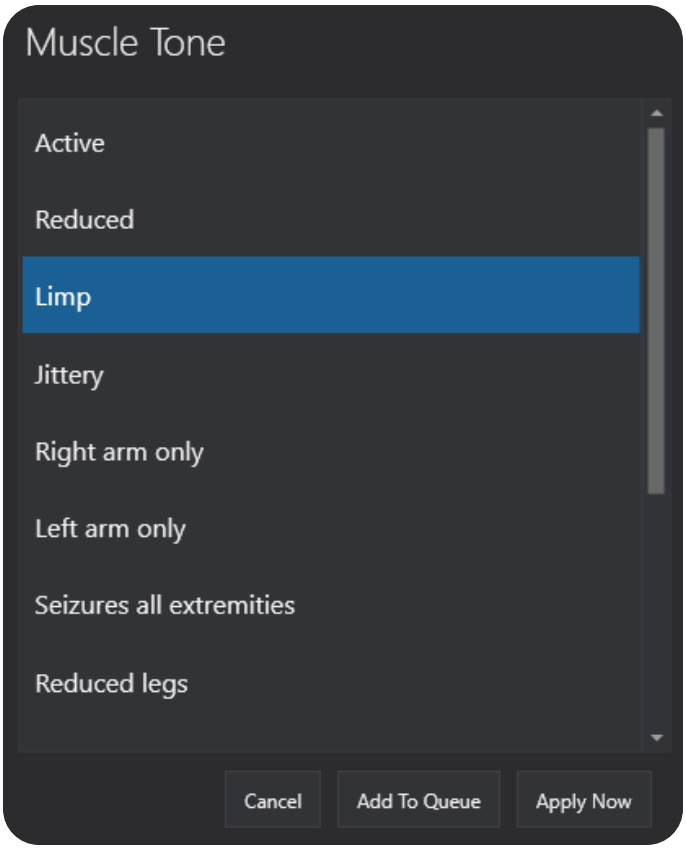
Super TORY may simulate varying levels of muscle tone including active, reduced, limp, jittery, right arm only, left arm only, seizures all extremities, reduced legs, reduced both, seizures right arm, seizures left arm, seizures right arm/leg, or seizures left arm/leg.

To control Super TORY's **Muscle Tone**:

1. In UNI 3, under the **Neurological** section click **Muscle Tone**.



2. Select from the available options.



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

Hold Super TORY's arms or legs while extended or flexed. The limb will cease movement while holding the limb.

Do not extend Super TORY's limbs when they are flexed, simply hold the arm or leg in its flexed position

3.2 CEPHALIC

3.2.1. Fontanelle

The fontanelle, or soft spot, is the space between different plates of a baby's skull that have not yet grown together. These soft spots allow for space for the bones of the skull to move during delivery and afterwards gives space for the baby's brain to grow.

The state of the fontanelle's appearance also gives critical information about a baby's health state. Bulging fontanelle is a medical emergency that can be caused by fluid in the brain, inflammation, or brain injury (ex: shaken baby syndrome).

Sunken fontanelle exhibits a noticeable inward curve that could be a result of dehydration, malnutrition, or even diabetes insipidus.

Super TORY has an anterior fontanelle that is located in the upper, front portion of the head. Through the control of the UNI 3 software, Super TORY can simulate a bulging or sunken fontanelle when these settings are selected.

To affect the appearance of Super TORY's fontanelle:

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

2. Select from the available options:
   - Normal
   - Bulging
   - Sunken

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

Normal

Sunken

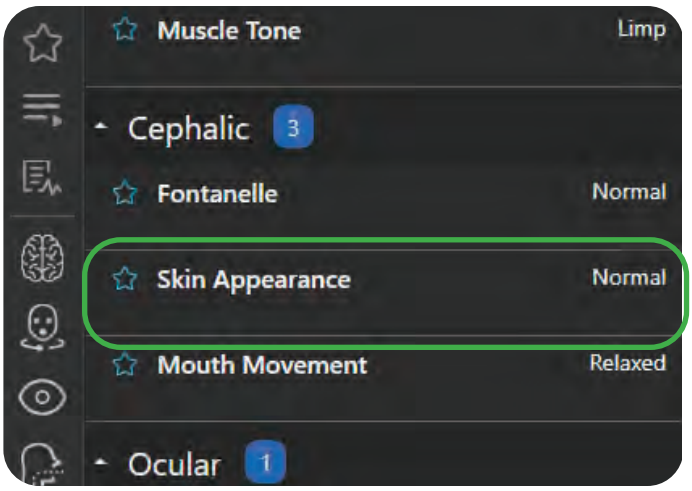
Bulging

3.2.2. Skin Appearance

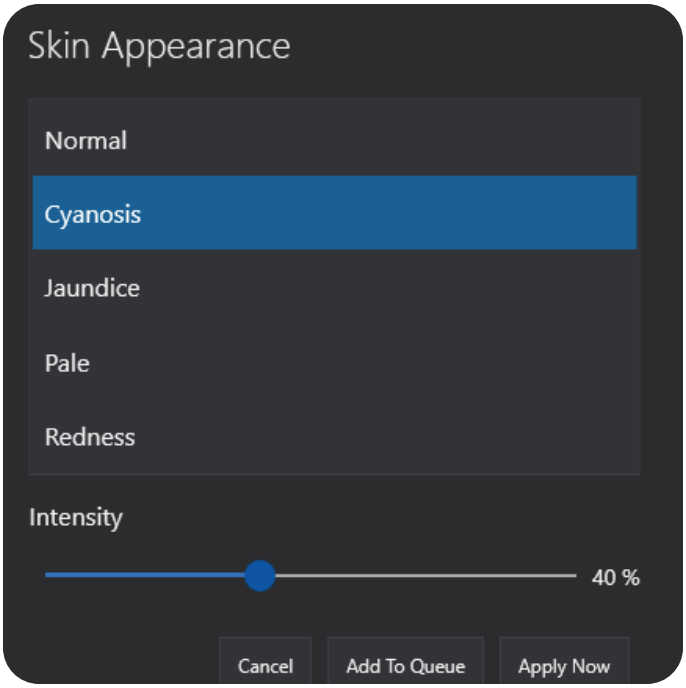
Skin appearance may be used to add realism to simulation by adding another sign participants should assess.

Super TORY can present 4 different skin appearances circumorally on a sliding scale of intensity which include Normal, Cyanosis, Jaundice, Pale, and Redness.

To apply a skin appearance color and intensity to Super TORY:



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



2. Select from the available **Skin Appearance** options and use the **Intensity** slider bar to increase or decrease the displayed color appearance on Super TORY.

   Normal is Super TORY's default appearance. Cyanosis, Pale, Jaundice, and Redness will activate Super TORY's circumoral and peripheral LEDs with a programmed color (the color can be adjusted through calibration). The **Intensity** slider bar operates on a sliding scale from 0-100%. The higher the percentage, the more intense the skin color appearance and vice versa.

   Paleness, redness, and jaundice will only appear centrally.

   Peripheral cyanosis will only appear when the intensity is above 50%. Central cyanosis will appear throughout the different levels of intensity.

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

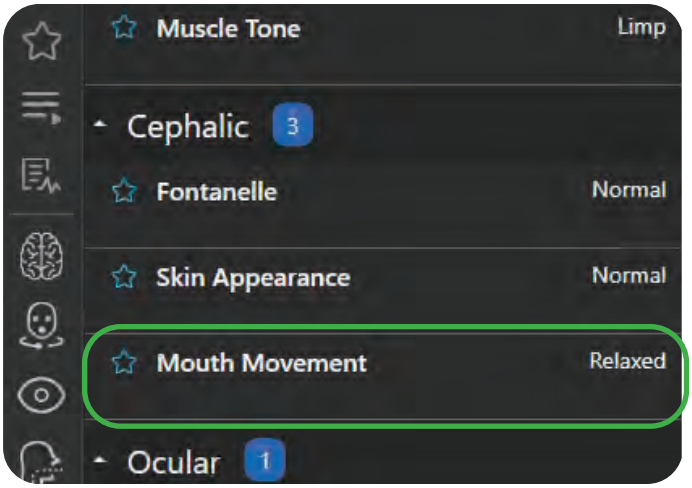
3.2.3. Mouth Movement

Super TORY can display different states of **Mouth Movement** which include Relaxed, Closed, Active, and Smacking.

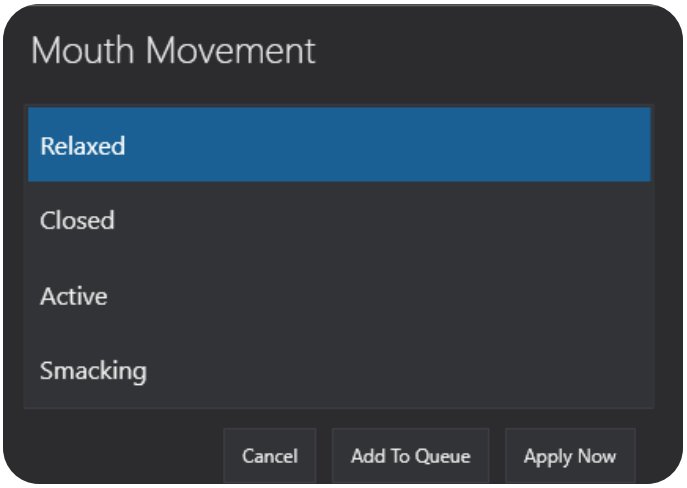
- Relaxed: mouth is slightly open
- Closed: mouth is rigidly closed
- Active:
- Smacking: mouth will randomly smack the lips together

To change Super TORY's **Mouth Movement**:

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



2. Select from the available **Mouth Movement** options.



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

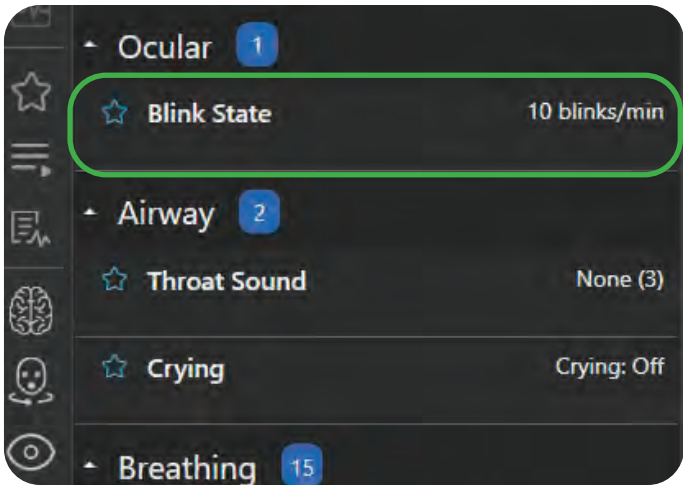
3.3 OCULAR

3.3.1. Blink State

Super TORY has programmable blinking that may be adjusted to either Open, Closed, or set to a rate of 10 blinks/min.

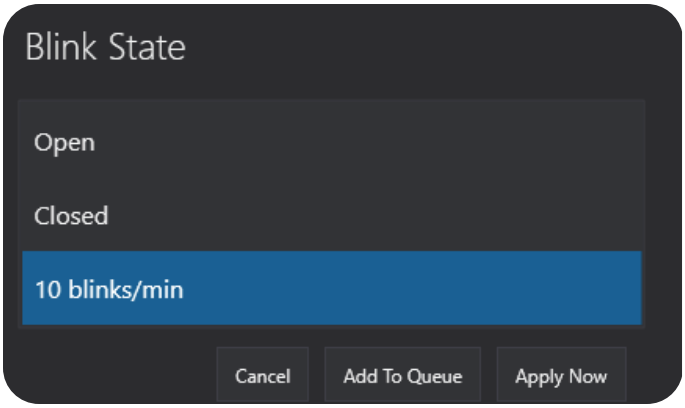
To make these changes:

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



2. Select from the available **Blink State** options.

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



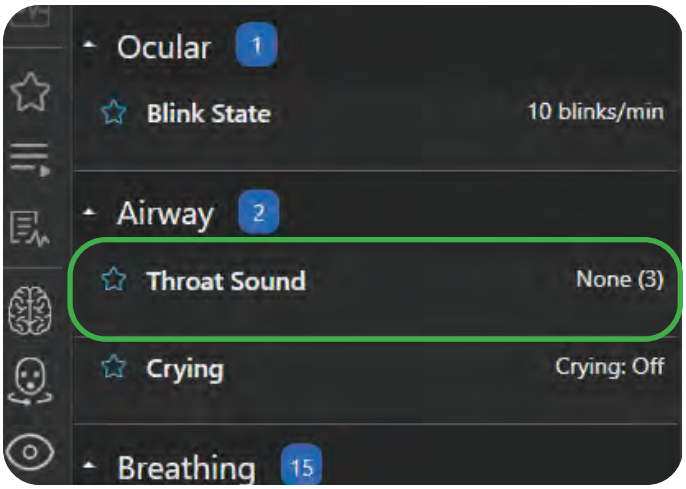
3.4 AIRWAY

3.4.1. Throat Sound

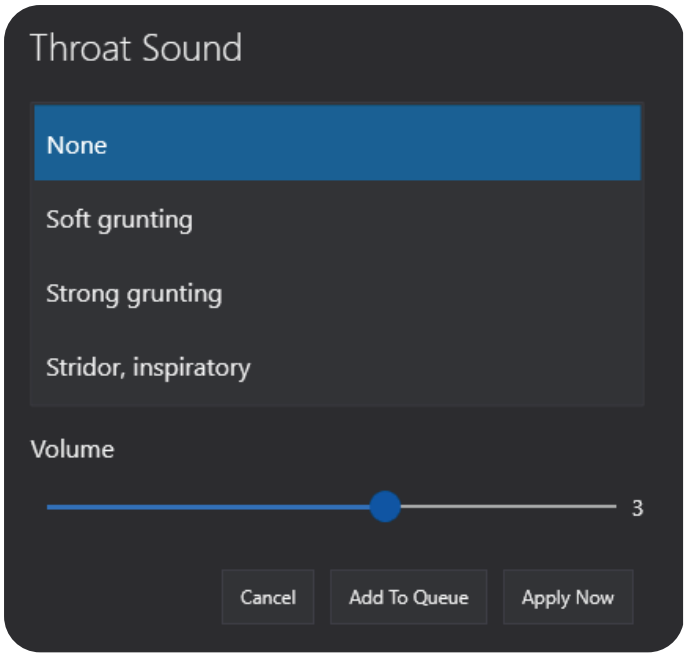
Super TORY's throat sounds are in sync with the breathing rate for a more realistic simulation. The different throat sounds include: None, Soft grunting, Strong grunting, and Stridor (inspiratory).

To change Super TORY's throat sounds:

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



2. Select from the available **Throat Sound** options.



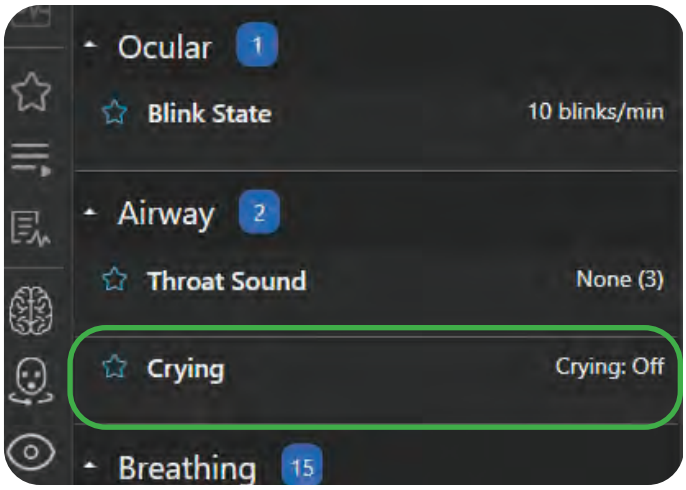
3. Click **Apply Now** to immediately apply the settings to Super TORY or click **Add To Queue** to load at a later time.

3.4.2. Crying

Super TORY's very lifelike cry will sound off in sync with visible mouth, chest, and blinking movement.

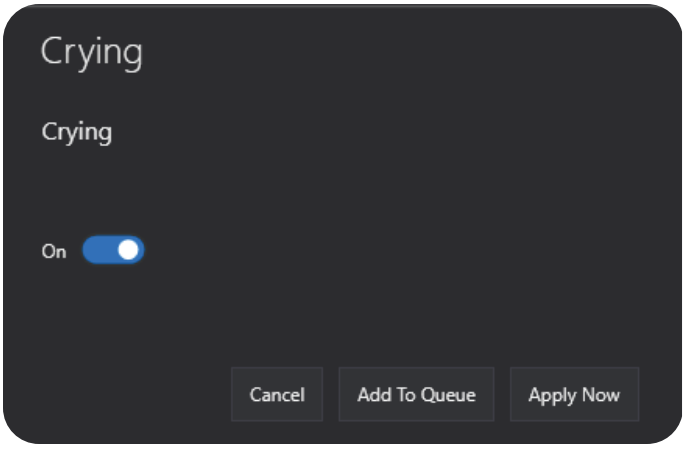
To activate crying:

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



2. Click on the switch button to turn **ON** or **OFF** crying. Use the slider bar or enter the numeric value to adjust the volume.

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



3.5 BREATHING

Super TORY has an impressive range of breathing capabilities that simulates life like chest rise, pneumothorax, different respiratory patterns, lung sounds, oxygen saturation, mechanical ventilator options, vitals waveforms, and more.

3.5.1. Chest Rise, Pneumothorax, & Needle Decompression

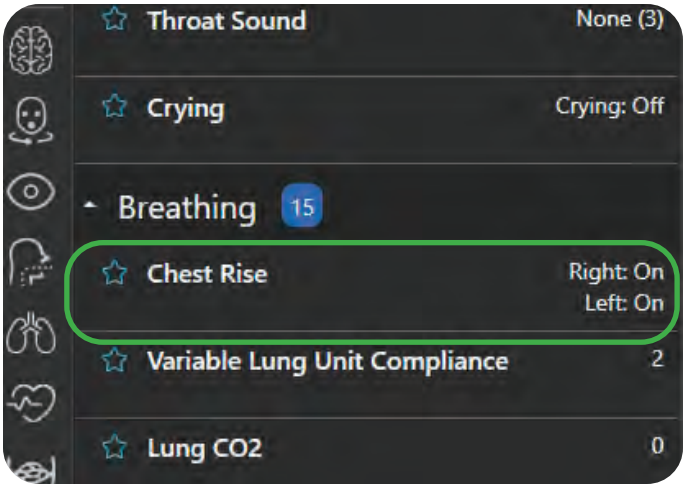
Super TORY's realistic bilateral chest rise allows providers to visually assess breathing. The **Chest Rise** can be controlled to independently stop one side of the chest from rising to simulate a variety of breathing conditions. In particular, Super TORY can simulate bilateral pneumothorax by disabling chest rise and supports **Needle Decompression** and **Chest Tube** insertion.

Chest Rise

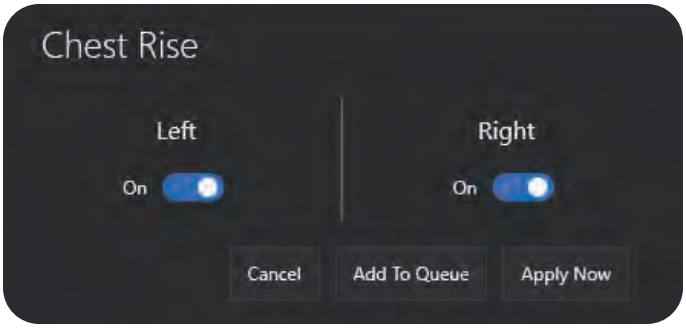
By default, Super TORY presents a normal, bilateral chest rise and can also be adjusted to present a unilateral chest rise–be it a user-defined left or right side–or simply no chest rise.

To change Super TORY's 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**.



When the switch is highlighted blue this indicates that the feature is ON. When the switch is grayed out this indicates that the feature is OFF.

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

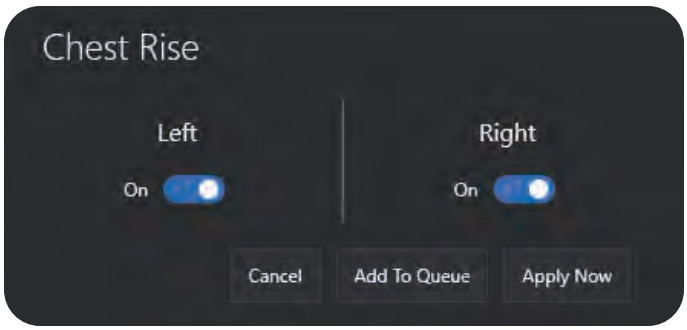
Pneumothorax

A pneumothorax occurs when air leaks into the space between the lung and the chest wall causing the lung to collapse under the pressure of the accumulated air in the pleural space. A pneumothorax could be due to a variety of reasons such as a chest injury or lung disease. A pneumothorax is a life threatening condition and requires immediate attention. To relieve the air built up in the pleural space a needle decompression procedure is performed.

Super TORY has **Pneumothorax Inserts** located bilaterally that contain palpable bony landmarks, realistic skin for cutting and suturing, bleeding, tactile pleural pop, and fluid drain.Super TORY supports bilateral, midaxillary needle decompression and chest tube insertion.

To simulate a pneumothorax for Super TORY:

1. In UNI 3, under the **Breathing** section click **Chest Rise** and disable the side of the chest the pneumothorax will be simulated on.



In addition to disabling the **Chest Rise**, you may optionally fill the Pneumothorax Inserts with a small amount of blood to simulate superficial bleeding while cutting into the insert.

To fill the **Pneumothorax Insert**:

1. Fill a 22 g needle syringe of Gaumard artifical blood concentrate.

2. Insert the tip of the 22 g needle superfically into the Pneumothorax Insert

3. Connect the syringe and inject about 1 cc of blood just below the skin of the **Pneumothorax Insert**.

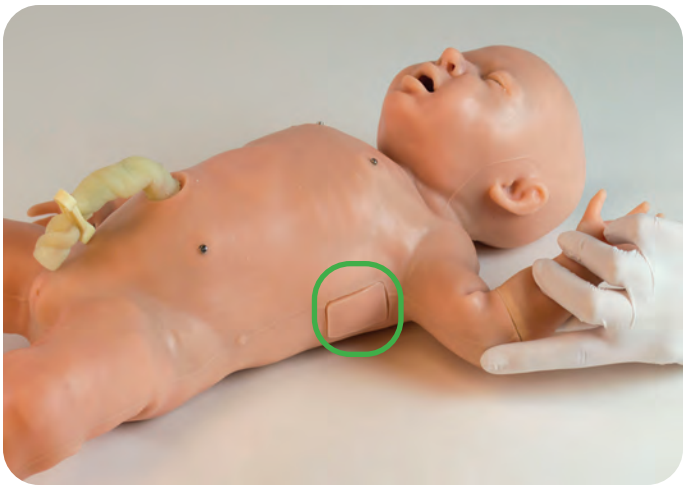
4. Remove the needle.

The **Pneumothorax Inserts** are now ready for simulation!

Needle Decompression

Needle Decompression is the procedure of inserting a needle into the pleural space to decompress the accumulated air gathered there to help relieve a pneumothorax, or collapsed lung.

Super TORY can have a needle decompression procedure performed on both midaxillary sites where the Needle Decompression inserts are located.



After selecting **Pneumothorax** for HAL's **Chest Rise**:

Use an appropriately sized needle to insert into Super TORY's **Pneumothorax Insert**.

Once the needle decompression is performed, a slight hiss of air may be audible and the loss of pressure will be logged in UNI.

After the **Pneumothorax Insert** has been pierced, the insert will have to be repaired with sil-poxy or replaced for the next exercise.

Replacing the Pneumothorax Insert

Unless an attempt to repair the **Pneumothorax Insert** was made, the insert will have to be replaced.

To replace the **Pneumothorax Insert**:

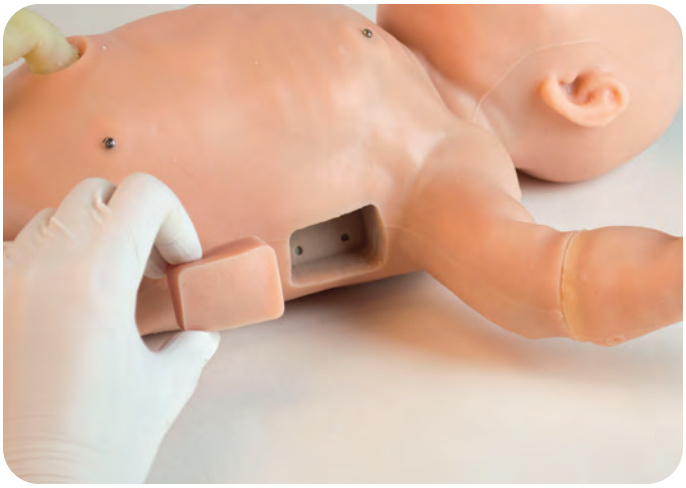
1. Remove the punctured insert.

2. Locate the spare Pneumothorax Insert from Super TORY's accessories box.

The spare Pneumothorax Inserts will have stamped on one of the sides an "R" or "L" to signify which anatomical side of Super TORY the insert is intended for.

3. Slide the new Pneumothorax Insert into the midaxillary location.

If it is difficult to get the Pneumothorax Insert flush to the body of the simulator, take it back out and spray the sides of the insert with isopropyl alcohol. Then, try to re-insert it so that it is flush with the body of the simulator.



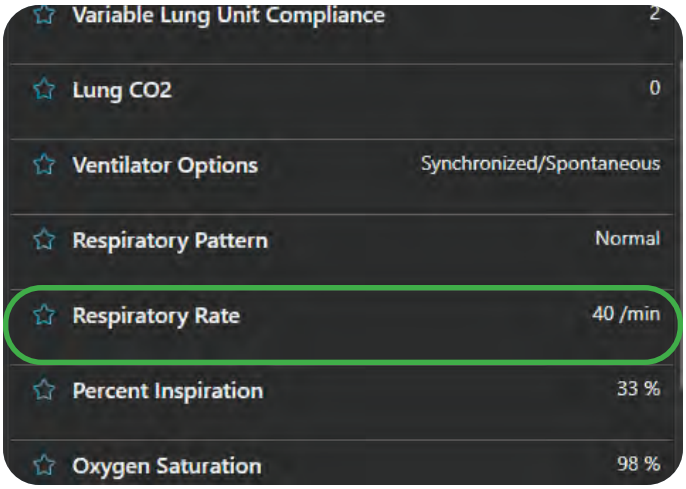
3.5.2. Respiratory Rate & Patterns

Super TORY has selectable respiratory rates with a range from 0 to 60 breaths per minute and different respiratory patterns that include Normal, Apnea, and Periodic breathing.

Respiratory Rate

To change Super TORY's respiratory rate:

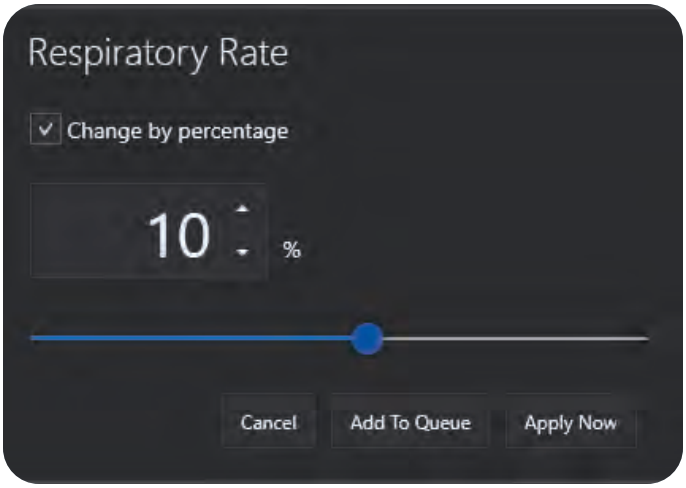
1. In UNI 3, under the **Breathing** section click **Respiratory Rate**.



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

3. Check **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 Super TORY or click **Add To Queue** to load at a later time.



Respiratory Pattern

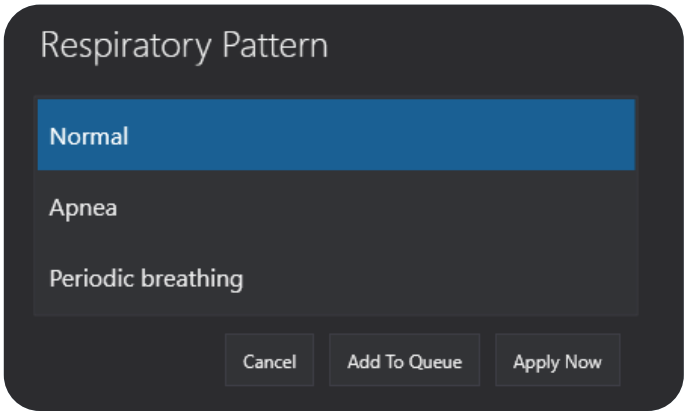
By default, Super TORY presents a normal breathing pattern with chest rise and fall.

To change Super TORY'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 Super TORY or click **Add To Queue** to load at a later time.



3.5.3. Dynamic Lung System & Controls

Super TORY has patented dynamic lungs that support the use of real mechanical ventilators and standard patient circuits.

The dynamic lungs work together with UNI 3's programmable settings (**Variable Lung Unit Compliance, Ventilator Options, Percent Inspiration/ Inspiratory Effort**) to support standard mechanical ventilators and modes of ventilation including:

- Volume assist/control
- Pressure assist/control
- Pressure support ventilation (PSV)
- Pressure or volume controlled Synchronized Intermittent Mandatory Ventilation (SIMV)
- Continuous Positive Airway Pressure (CPAP)
- Noninvasive Positive-Pressure Ventilation (NIPPV)

Mechanical Ventilator Guidelines

Always follow your manufacturer's guidelines and precautions of your mechanical ventilator and any other medical devices.

Do NOT introduce liquids, humidified gases, oxygen, or administer aerosol medications into the airway of HAL. Moisture in the airway will damage the simulator's internal sensors and mechanics.

Super TORY's operating limitations are consistent with that of a real patient. Treating Super TORY in a manner that would seriously harm a real patient is likely to result in damage to the internal mechanics. Always treat Super TORY like a real patient.

- Super TORY's theoretical weight is 3.6 kg (8 lbs.) which may be a dimension needed for respiratory therapy calculations.
- The flow/pressure trigger rates on the mechanical ventilator may need to be adjusted so it can easily recognize HAL's inhalations. The suggested settings on the mechanical ventilator are:
  - Flow ≤ 3 Lts/min, or
  - Pressure ≤ 3 cmH2O
- Place Super TORY in a clinical state that requires mechanical ventilation.
- Always remember to properly lubricate any adjunct used to intubate HAL with his provided MINERAL OIL lubricant.

Variable Lung Unit Compliance

Lung Compliance refers to the elasticity and surface tension of the lungs. In simple terms, lung compliance is how difficult or how easy it is for the lungs to expand and contract.

For example, let's say there is a patient with Respiratory Distress Syndrome (RDS), a disease that occurs mostly in premature babies that lack a sufficient amount of surfactant in the lungs, causing the lung tissue to thicken and become inflamed, making it hard to breathe.In this case, since the lung tissue is very stiff this makes it harder for the lungs to expand thus making the patient very short of breath. These lungs would be considered to have a lower than normal compliance due to the difficulty of the lungs being able to inflate.

In relation to Super TORY's UNI 3 setting, to mimic a set of "stiff" lungs or low compliance, set his **Variable Lung Unit Compliance** to a value to either 0 or 1 - lower than 2 which is his default, normal compliance value.

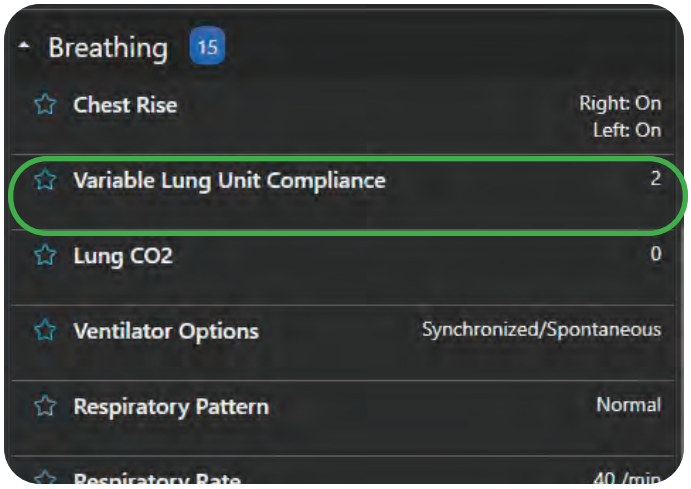
To change Super TORY's lung compliance:

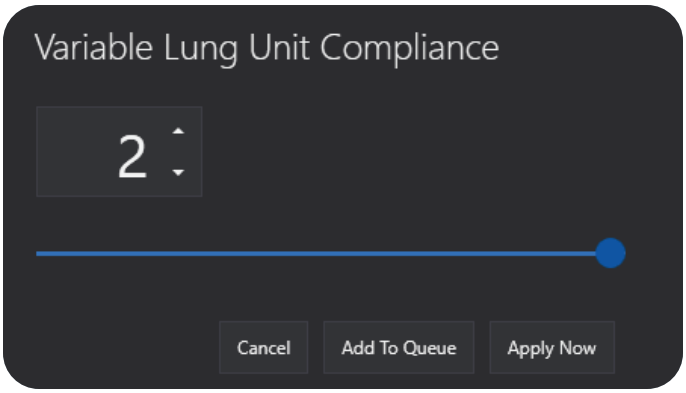
1. In UNI 3, under the **Breathing** section click **Variable Lung Unit Compliance**.

2. Enter a numeric value or use the slider bar to change the level of **Variable Lung Unit Compliance**.

   Super TORY's default is set to a "normal" lung compliance at level of 2. To simulate low lung compliance, decrease Super TORY's level of Variable Lung Unit Compliance.

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

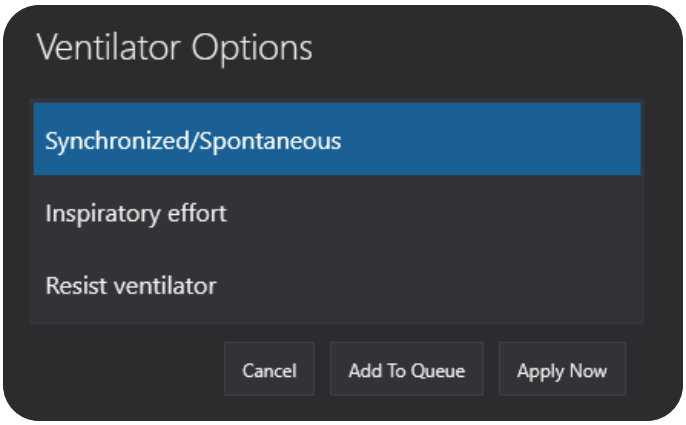




Ventilator Options

In combination with Super TORY's **Variable Lung Unit Compliance**, different **Ventilator Options** can be selected for Super TORY to run manual ventilations or mechanical ventilator simulations.

The three **Ventilator Options** include **Synchronized/ Spontaneous, Inspiratory Effort,** and **Resist Ventilator**.



- **Synchronized/Spontaneous**: This is the default setting for Super TORY. This option allows the user to assist or control Super TORY's breath using a manual device or mechanical ventilator.
- **Inspiratory Effort**: This option allows the user to enter a Respiratory Rate in UNI that will indicate to Super TORY the rate to trigger the mechanical ventilator with a "small" breath.
- **Resist Ventilator**: With this option, Super TORY's breathing will not be synchronized with the ventilator, but rather fight against the ventilator's delivered breaths.

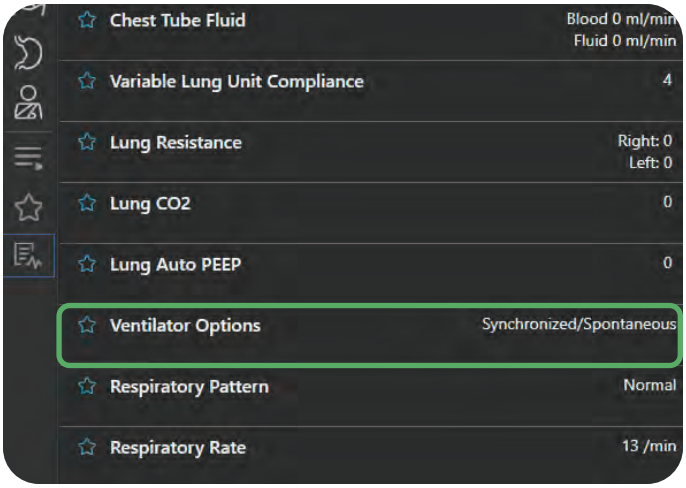
Synchronized/Spontaneous

Synchronized/Spontaneous is the default **Ventilator Option** selected for Super TORY. This ventilator option allows the mechanical ventilator to take full control when the ventilator's respiratory rate is **above** 15 breaths per minute.

Set Super TORY's **Respiratory Rate** to zero and let the mechanical ventilator provide all of his breaths for him. In another example, **Synchronized/ Spontaneous** can be used together with a **Respiratory Rate** above zero (simulating a patient trigger rate) to allow the ventilator to deliver assisted breaths.

To select Super TORY's **Ventilator Option** to be **Synchronized/Spontaneous**:

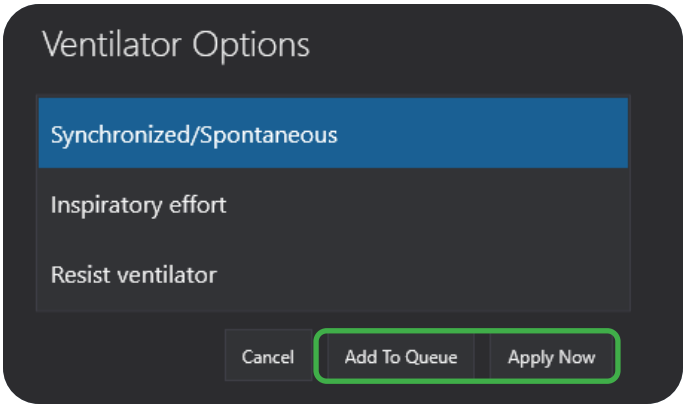
1. In UNI 3, under the **Breathing** section click **Ventilator Options**.



2. Click **Synchronized/Spontaneous**.

   Super TORY's default is set to Synchronized/Spontaneous. It is recommended to use this option for AC, SIMV, and CMV methods of ventilation.

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



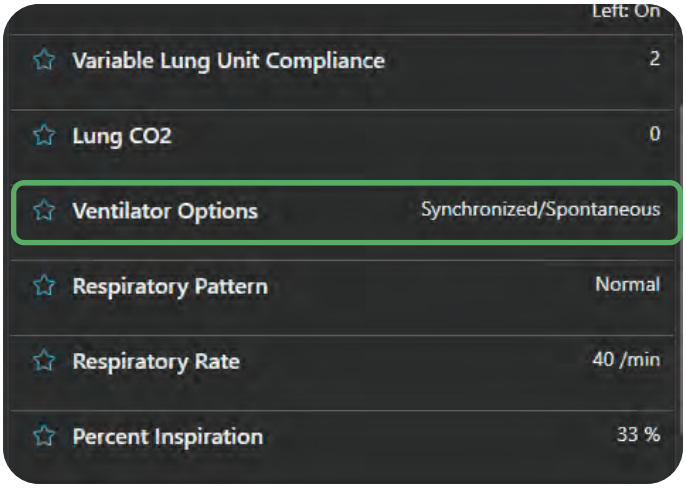
Inspiratory Effort

Inspiratory Effort functions in a similar manner as synchronized breathing, however, its function is activated directly on UNI by choosing it as the new ventilator option.

Once Super TORY is in this **Inspiratory Effort** state where he is attempting to draw in small breaths, according to the Respiratory Rate set in UNI, the mechanical ventilator will help Super TORY to finish that breath so that it is made complete.

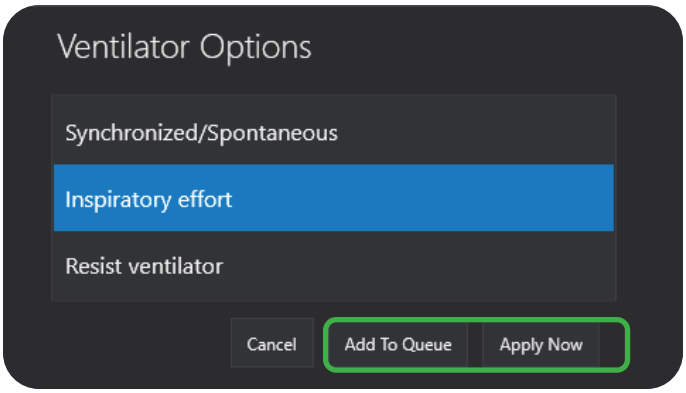
To select Super TORY's **Ventilator Option** to be **Inspiratory Effort**:

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

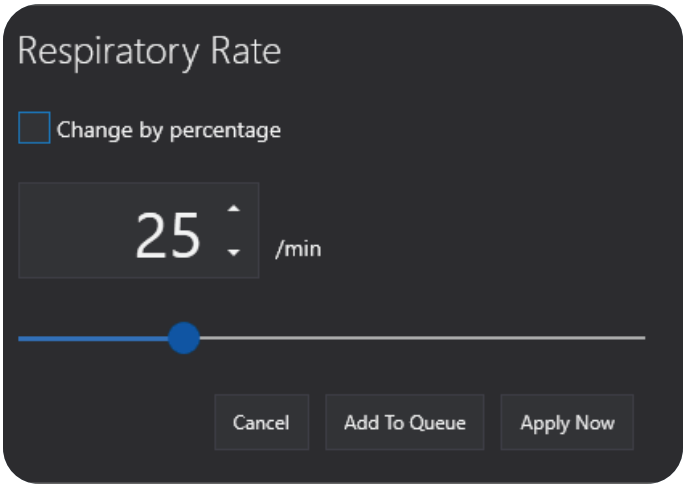


2. Click **Inspiratory Effort**.

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



4. Additionally, in UNI 3, under the **Breathing** section click **Respiratory Rate** and adjust the rate to specify how many times per minute Super TORY should attempt to draw in a breath.



Despite the **Respiratory Rate** that is chosen in UNI, the **Inspiratory Effort** option will ensure that each breath is completed.

5. Set your external mechanical ventilator to at least 0.3 L/m and begin your simulation.

Resist Ventilator

When set to this option, Super TORY will take full breaths for every respiration and the breaths will not synchronize with the ventilator to simulate fighting against the mechanical ventilator.

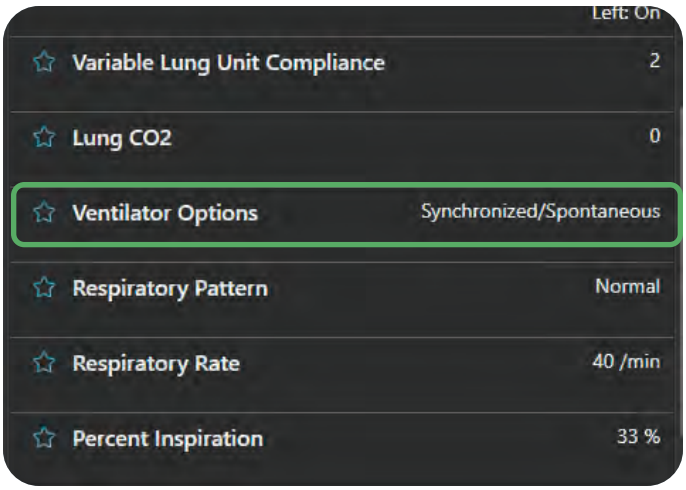
For example, set your external mechanical ventilator's respiratory rate to deliver 30 bpm and set Super TORY's **Respiratory Rate** in UNI to 30 bpm. This will cause Super TORY to "fight" or resist every breath.

In another instance, set your external mechanical ventilator's respiratory rate to deliver 30 bpm and set Super TORY's **Respiratory Rate** in UNI to 10 bpm. This will cause Super TORY to "fight" or resist every 1 in 3 breaths.

In these examples, when Super TORY resists the ventilator, an increase in PIP can be seen on the mechanical ventilator.

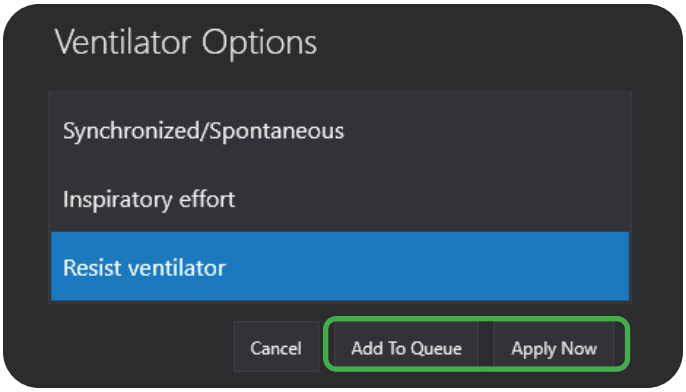
To set up and select Super TORY's **Ventilator Option** to **Resist Ventilator**:

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



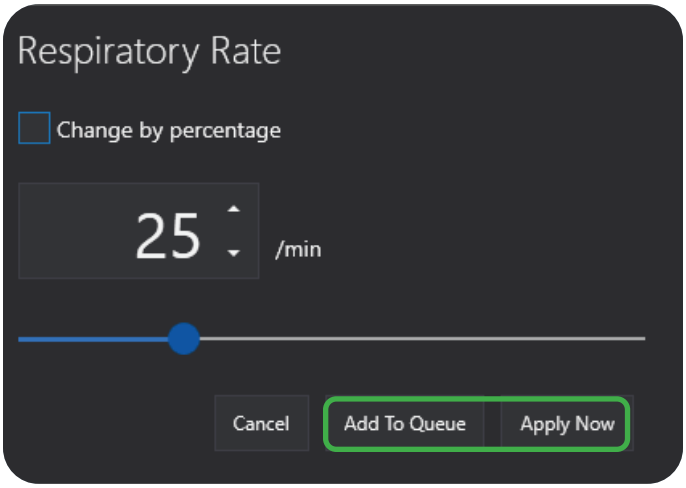
2. Click **Resist Ventilator**.

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



4. Additionally, in UNI 3, under the **Breathing** section click **Respiratory Rate** and adjust the rate to specify how many times per minute Super TORY should resist the ventilator.

5. Click **Apply Now** to immediately apply the selections to Super TORY.



3.5.4. Lung Sounds, Quadrant Locations, & Auscultation

Lung Sounds

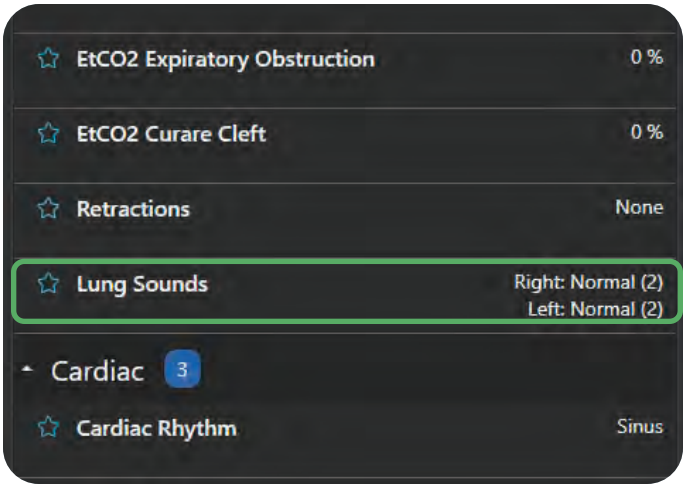
Super TORY has anterior lung sounds that may be auscultated and include:

- Normal
- None
- Stridor (inspiratory)
- Grunting
- Wheezing
- Crackles (Fine)

These are a great addition for various auscultation assessments!

To change Super TORY's lung sounds:

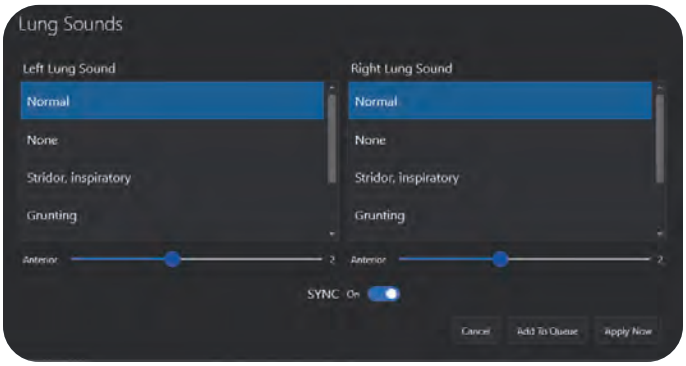
1. In UNI 3, under the **Breathing** section click **Lung Sounds**.



2. Select from the available options to change the anterior **Lung Sounds**.

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

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



3.5.5. Oxygen Saturation & Calibration

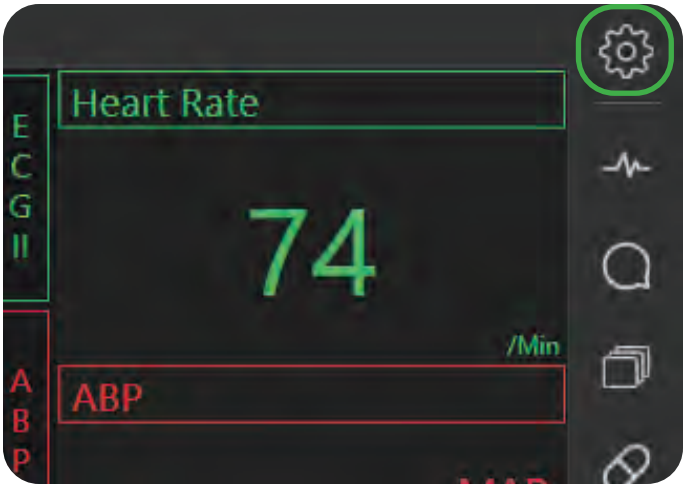
Oxygen saturation refers to the percentage of hemoglobin bound to oxygen within red blood cells. Super TORY can simulate this with a programmable oxygen saturation which can be monitored using real pulse oximetry sensors on the RIGHT hand to simulate pre-ductal and RIGHT foot to simulate post-ductal.

Prior to using the oxygen saturation feature, calibrate the oximetry device to Super TORY's right hand and right foot.

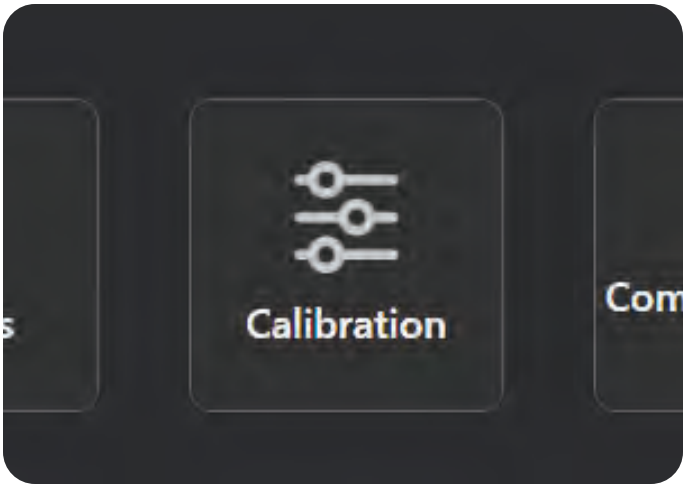
Oxygen Saturation Calibration

To calibrate Super TORY with the oximetry device:

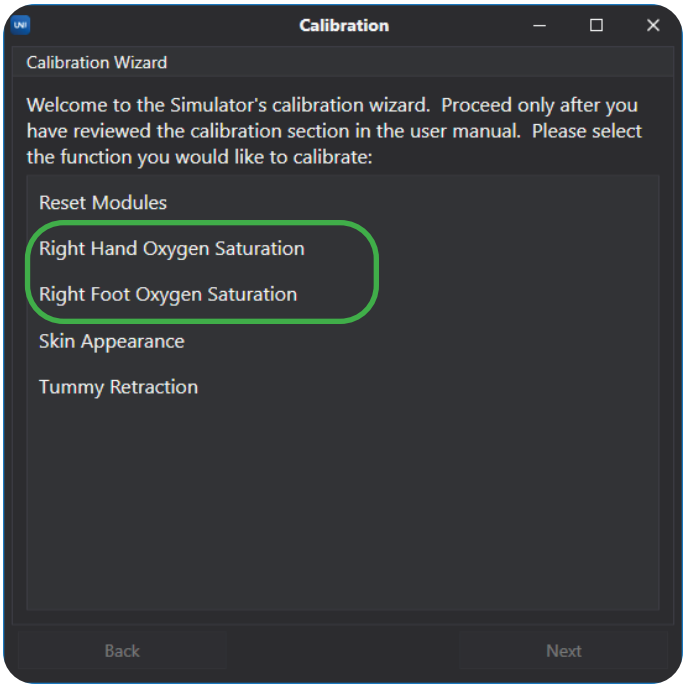
1. In the upper right corner of UNI 3, click **Settings**.



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



3. Select **Right Oxygen Saturation**.

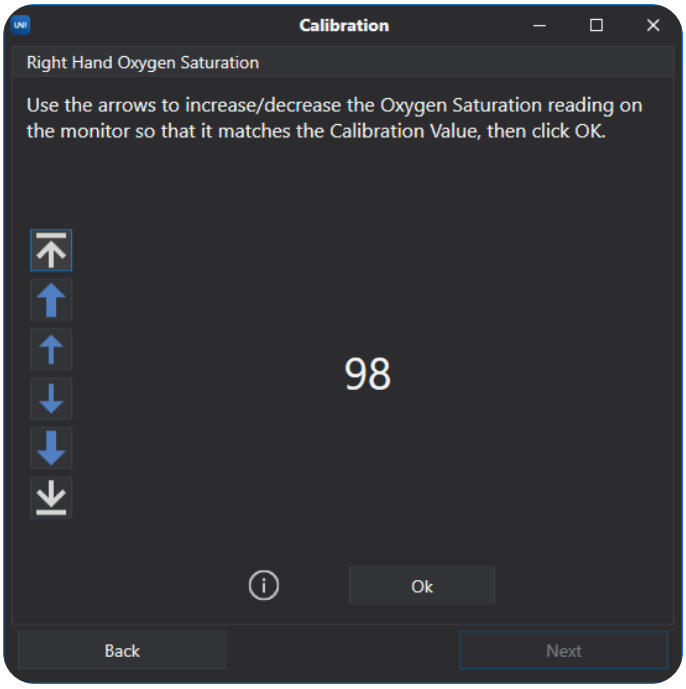


Select either the Right Hand or Right Foot, depending on the one you want to calibrate.

4. Click **Next**.

5. Place the oximeter device on Super TORY's right hand or right foot.

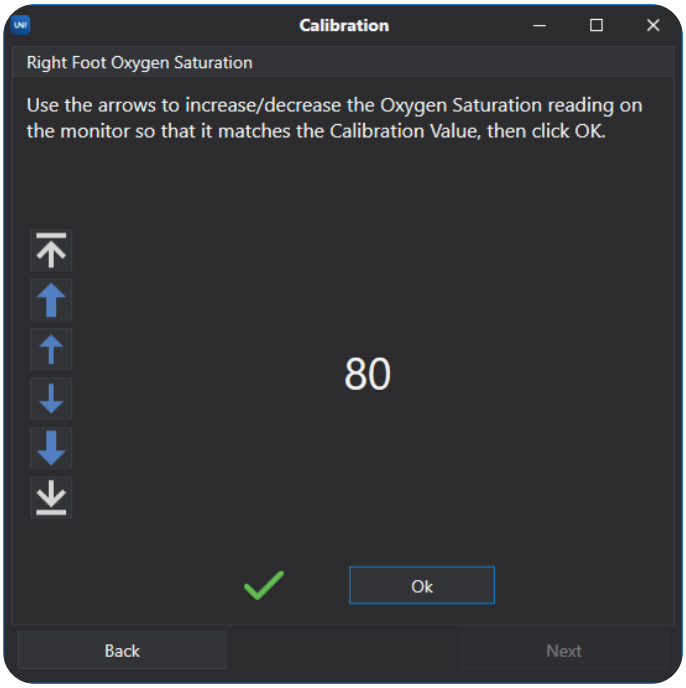
6. Slowly, use the arrows to adjust the oximeter's values to match the values shown on the UNI calibration menu.



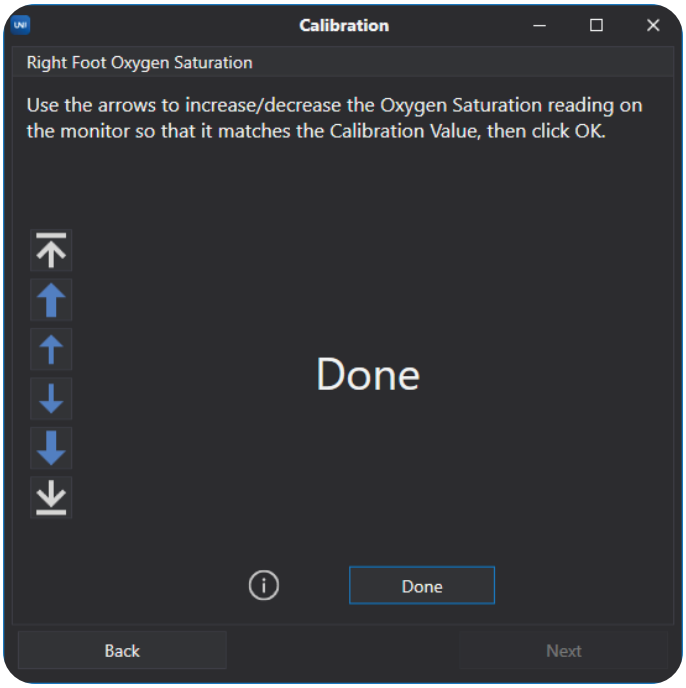
The arrows that are used to adjust the oximeter reading will affect the numbers on the actual oximeter. The numbers shown on the UNI calibration menu (in this example: 98) WILL NOT be changed.

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

The information icon will turn to a green checkmark 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 done, click **Done**.

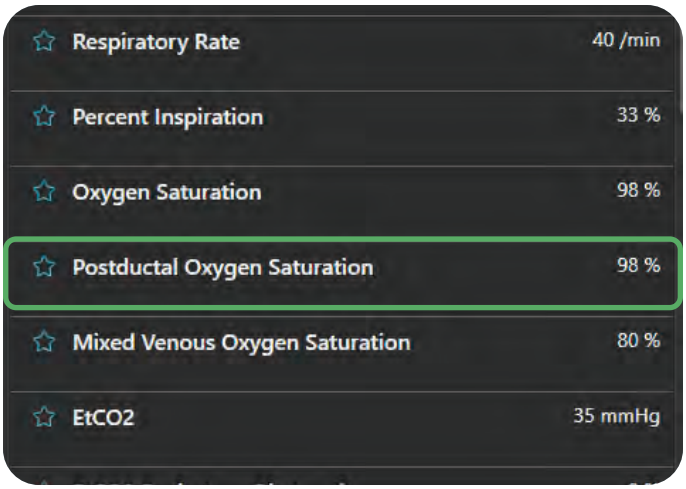


Post-ductal Oxygen Saturation

The post ductal saturation measures the level of arterial oxygen in the blood as the blood leaves the heart and after it has passed the ductus ateriosus.

Super TORY has the capability to program a number for the post-ductal oxygen saturation and then have a real sensor placed on the **RIGHT** leg to measure oxygen saturation.

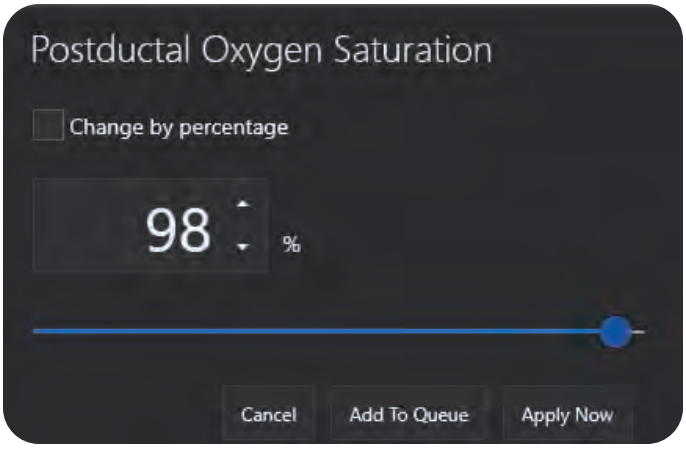
1. In UNI 3, under the **Breathing** section click **Postductal Oxygen Saturation**.



2. Use the slider bar to adjust the level of oxygen saturation.

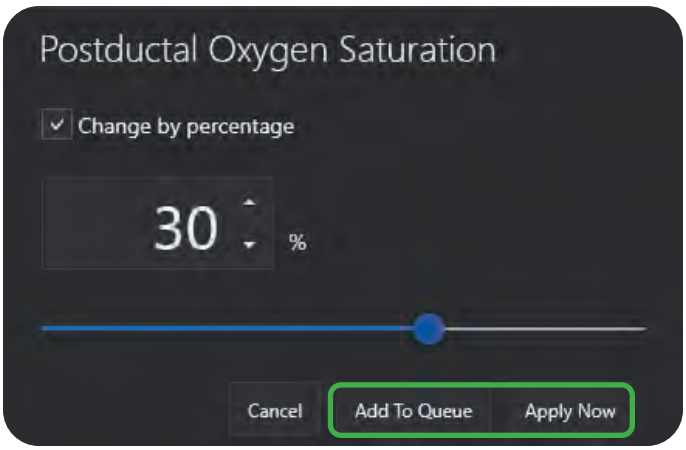
3. Click **Apply Now** to immediately apply the selections to Super TORY or click **Add To Queue** to load at a later time.

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



5. Place the oxygen saturation device on the RIGHT hand.

Be sure that the light source of the oxygen saturation device is set on the top part of the hand. This orientation matters to ensure a proper reading is obtained from the oxygen saturation device.

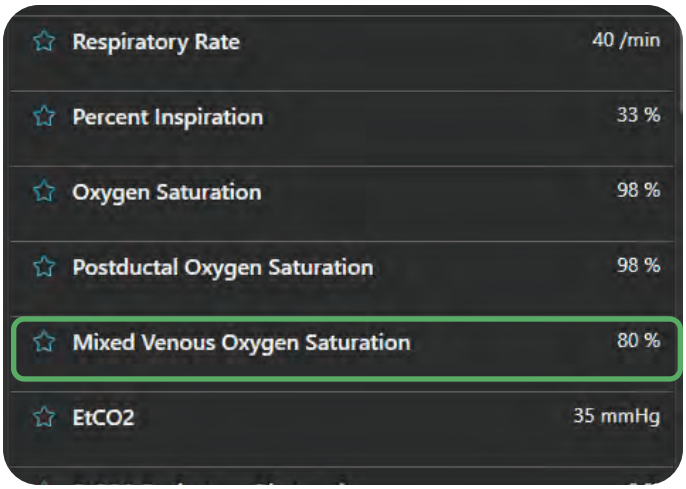


Mixed Venous Oxygen Saturation

Mixed Venous Oxygen Saturation refers to the oxygen content of blood that returns to the heart after meeting tissue needs. Super TORY can simulate this vital as a virtual value on the **Monitor** tab in UNI 3 or a Bedside Virtual Monitor (optional).

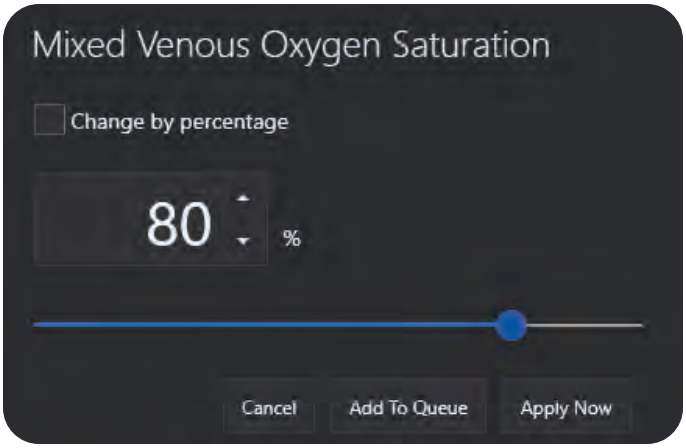
To change Super TORY's Mixed Venous Oxygen Saturation:

1. In UNI 3, under the **Breathing** section click **Mixed Venous Oxygen Saturation**.



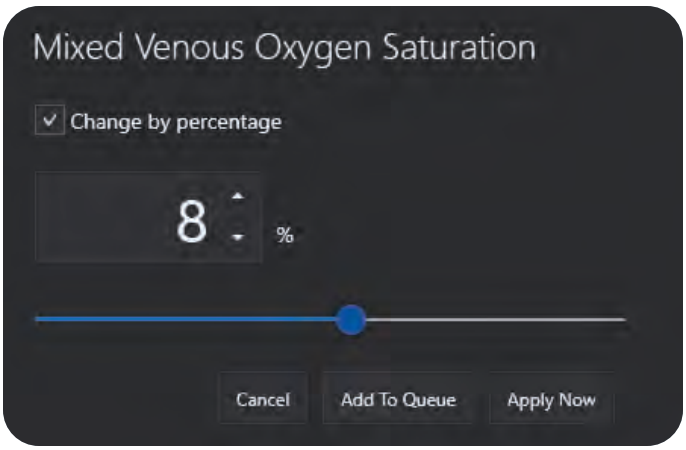
2. Enter the numeric value or use the slider bar to change the level of **Mixed Venous Oxygen Saturation**.

Super TORY's default **Mixed Venous Oxygen Saturation** is set to 80%.



3. Check **Change By Percentage** to affect the **Mixed Venous Oxygen Saturation** by percentage.

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



3.5.6. Lung CO2, Capnography, & EtCO2 Controls

Super TORY has the ability to exhale real carbon dioxide (CO_2) which can be captured on a capnogram. Once a CO2 cartridge is purchased and installed, the amount of CO2 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 CO2 3/8" - 24UNF - 1A cartridges can be purchased at most bicycle or hardware stores.

Review the safety and warning information in the Care and Cautions section when installing a CO2 cartridge.

CO2 Exhalation External System Box

Super TORY's carbon dioxide feature is supplied by an external system that gets connected to Super TORY's left shoulder port connector. This **CO2 Exhalation External System Box** is provided with Super TORY's accessories and contains (1) **CO2 Cartridge Protective Case & Hose**, (2) **CO2 External System Extensions**, and (1) **CO2 External System Holder**.

To install a CO2 cartridge into the **CO2 Cartridge Protective Case**:

1. Retrieve the **CO2 Cartridge Protective Case** and hold the bottom securely as you twist the top off.

2. Insert a new CO2 cartridge into the bottom half of the **CO2 Cartridge Protective Case**. Ensure that the threads are aligned properly.

3. Firmly grasp the new CO2 cartridge and screw it into the CO2 Cartridge Protective Case until it is completely secured.

As the new CO2 cartridge is screwed into the case, the cartridge will be pierced and an audible hiss can be heard as CO2 escapes. This will also cause the CO2 cartridge to feel cool to the touch. However, continue screwing the CO2 cartridge into the case to minimize lost CO2.

Do not unscrew the cartridge once the seal is broken.
Hand tighten only and do not over tighten.

4. Once the CO2 cartridge is completely and firmly screwed into the bottom part of the Protective Case, attach the top of the Protective Case.

Connecting the CO2 Exhalation External System to Super TORY

1. Obtain the desired External System Extension hoses (either the short one or long one) and connect the hose to the end of the CO2 Cartridge Protective Case.

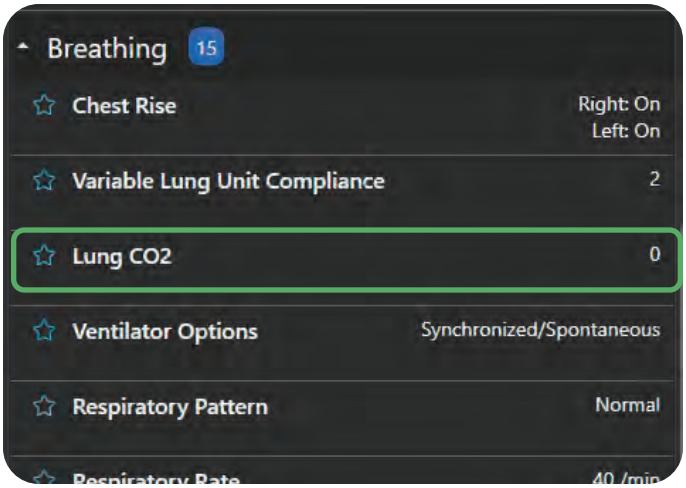
2. Connect the other end of the extension hose to the port located on the upper left shoulder on Super TORY.

3. Strap the Protective Case to Super TORY's leg using the CO2 External System Holder or, for simulation purposes, conceal the Protective Case some place near Super TORY.

After installing an appropriate sized CO2 cartridge, the amount of CO2 that Super TORY exhales can be controlled through **Lung CO2**. By default, Super TORY's **Lung CO2** is set at a level of 0. This means that he will not exhale any measureable CO2. As the levels of **Lung CO2** increase, so does the measureable amount of CO2 that Super TORY exhales. At a level 10, Super TORY will exhale his maximum amount of CO2.

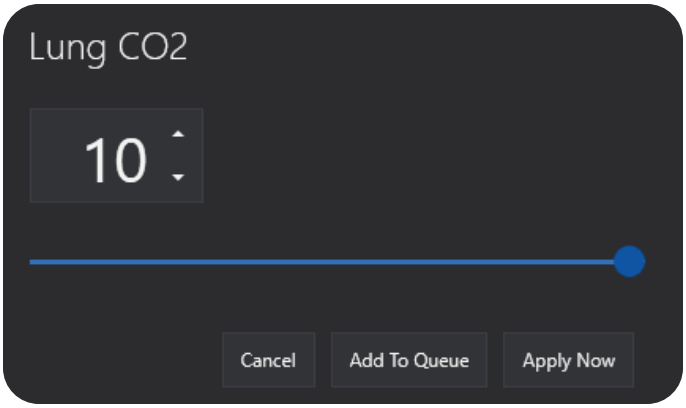
To change Super TORY's Lung CO2:

1. In UNI 3, under the **Breathing** section click **Lung CO2.**



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

When Lung CO2 is at zero, there will be no exhalation of CO2. As the levels of Lung CO2 are increased, the amount of CO2 exhaled will increase.



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

4. Intubate Super TORY with an appropriate sized endotracheal tube and attach a capnometer to monitor his CO2 exhalation.

Checking and Replacing CO2 Cartridges

The CO2 cartridge used for the **Lung CO2** and capnography will eventually run out and will require replacing. It is always best practice to confirm there is no CO2 left in the CO2 cartridge before removing it and replacing it with a new one. CO2 levels in the cartridge may be checked by connecting Super TORY to a capnometer and receive a reading of 0 mmHg.

To remove the empty CO2 cartridge:

1. Securely hold the bottom of the CO2 Cartridge Protective Case with one hand and open it by twisting the top.

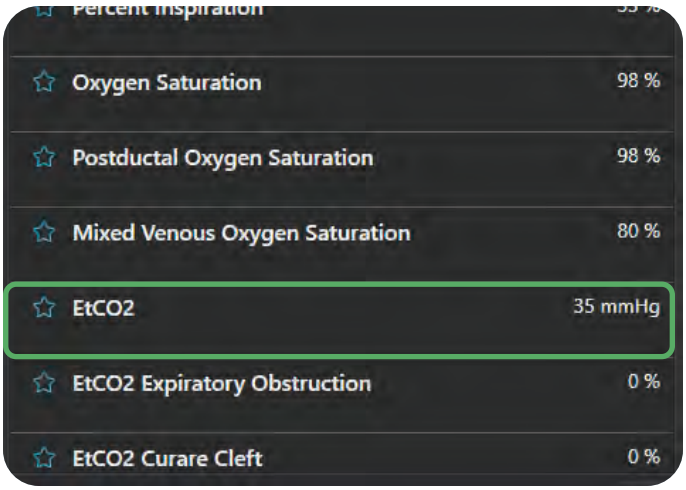
2. When the top comes off of the Protective Case, grasp the CO2 cartridge and unscrew the cartridge.

EtCO2

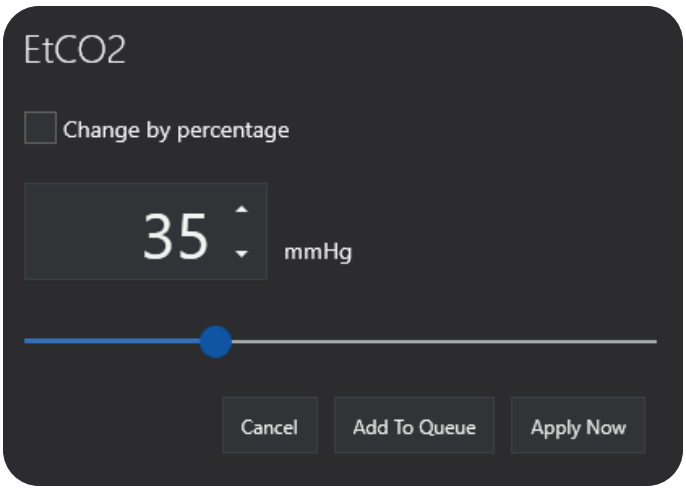
In UNI 3, **EtCO2** is a virtual value that can be displayed on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

To change EtCO2:

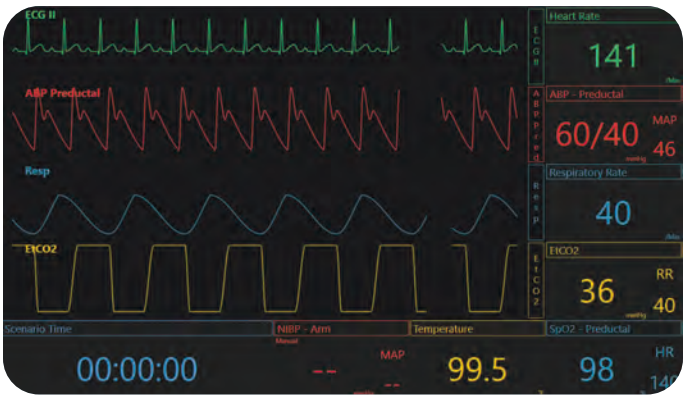
1. In UNI 3, under the **Breathing** section click **EtCO2.**



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

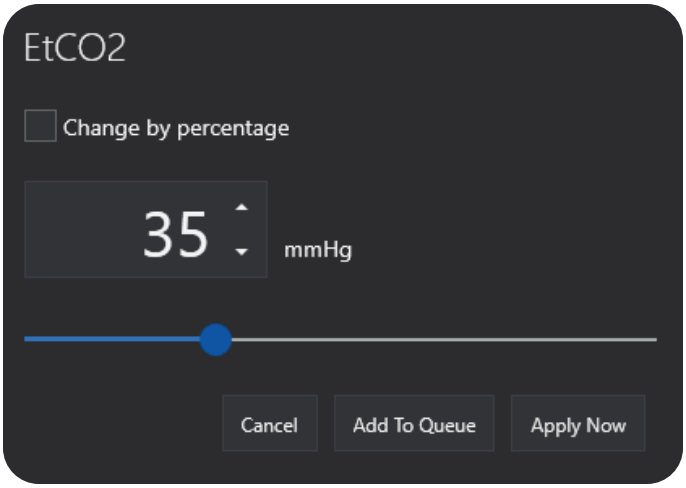


Super TORY's default EtCO2 is set to 35 mmHg which is displayed on the Monitor tab in UNI as the yellow trace.



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

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

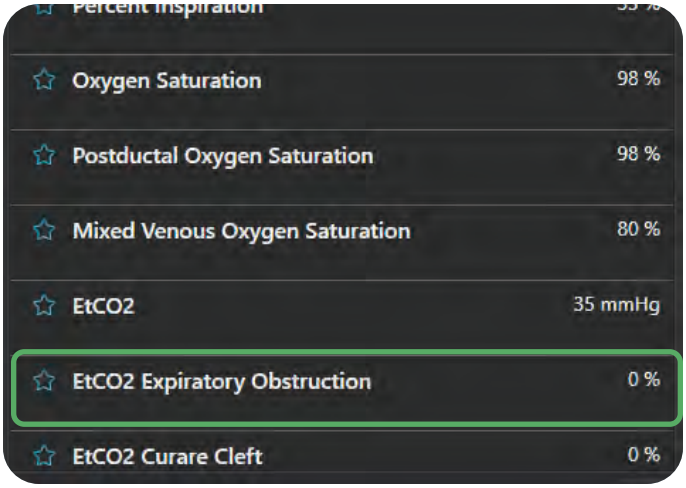


EtCO2 Expiratory Obstruction

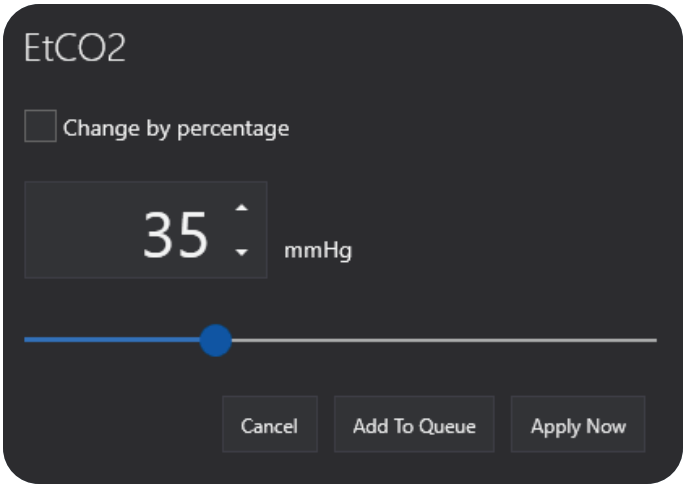
EtCO2 Expiratory Obstruction is a virtual value that can be changed to affect Super TORY's EtCO2 waveform on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

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

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

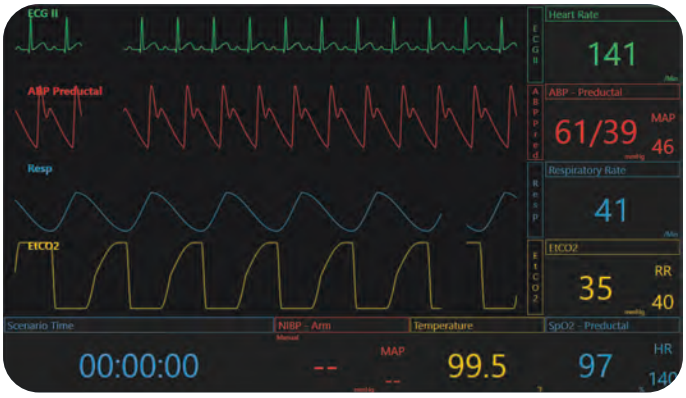


2. Enter the numeric value or use the slider bar to change the level of **EtCO2 Expiratory Obstruction**.



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

Super TORY'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".



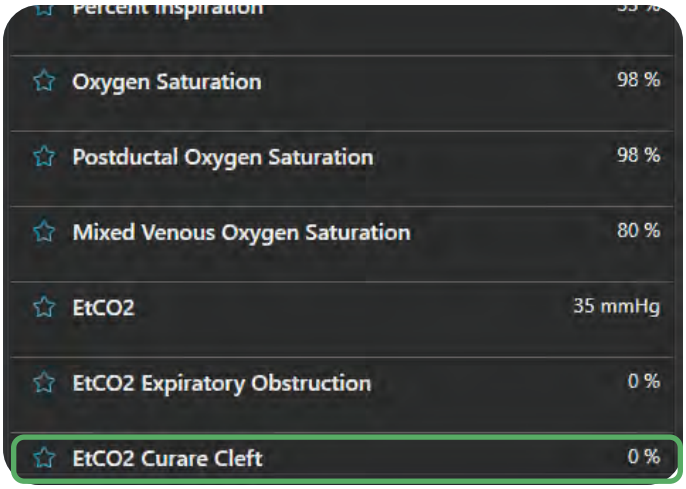
EtCO2 Curare Cleft

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.

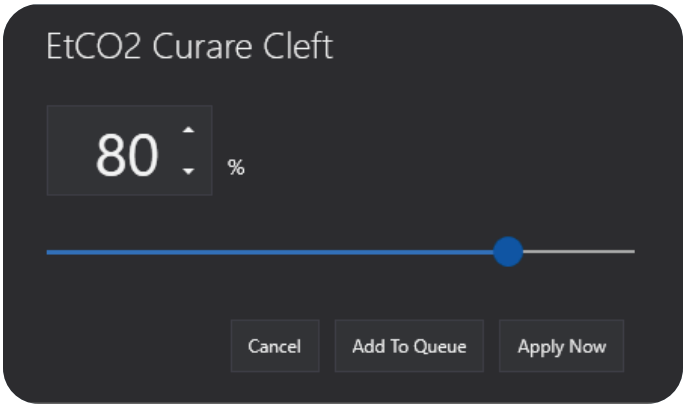
Super TORY can simulate an EtCO2 Curare Cleft (virtually) on his EtCO2 waveform within UNI on the Monitor tab or it can be displayed on a Bedside Virtual Monitor (option available for purchase).

To change the severity of the Curare Cleft for Super TORY:

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

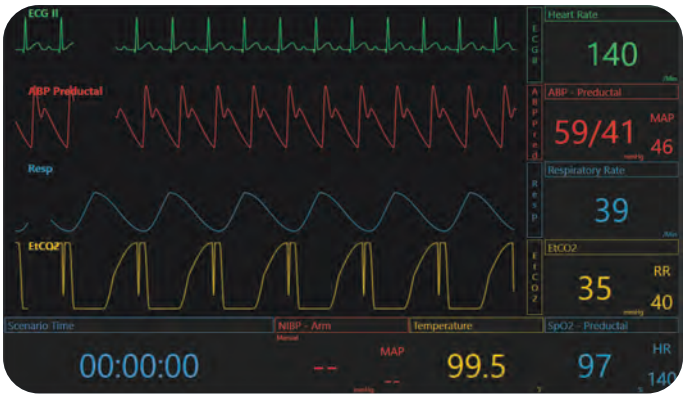


2. Enter the numeric value or use the slider bar to change the level of **EtCO2 Curare Cleft.**



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

Super TORY'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.



3.5.7. Retractions

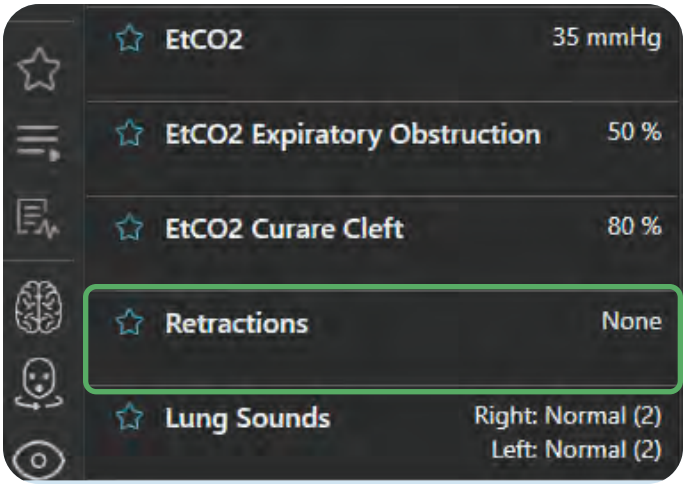
Retractions are a sign of breathing difficulty in infants where the skin or bones of the chest sink in with each breath.

Super TORY can simulate varying levels of retractions;

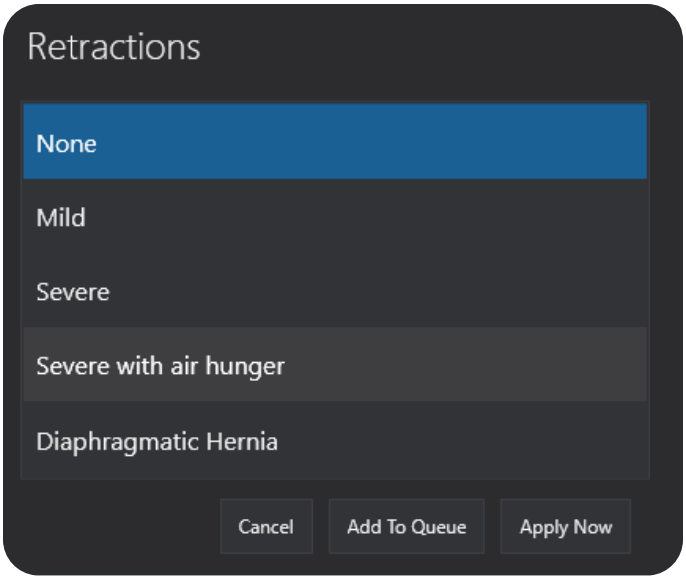
- None
- Mild
- Severe
- Severe with air hunger
- Diaphragmatic Hernia

To activate Retractions:

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

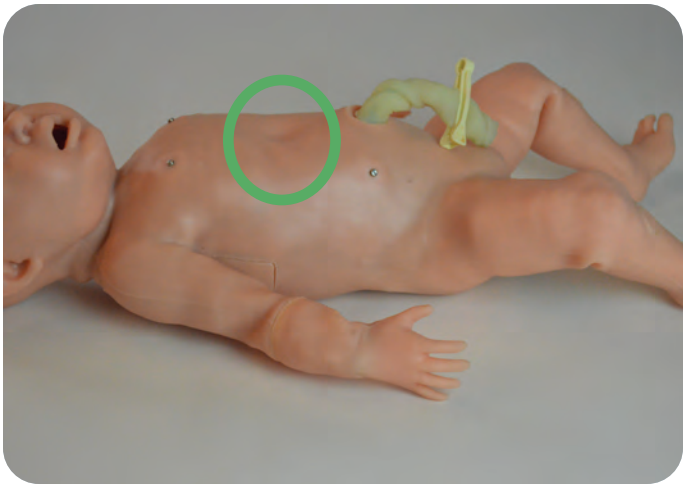


2. Select an available option from the list.



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

Super TORY's retractions with air hunger make a noise in sync with the **Respiratory Rate**.



3.6 CARDIAC

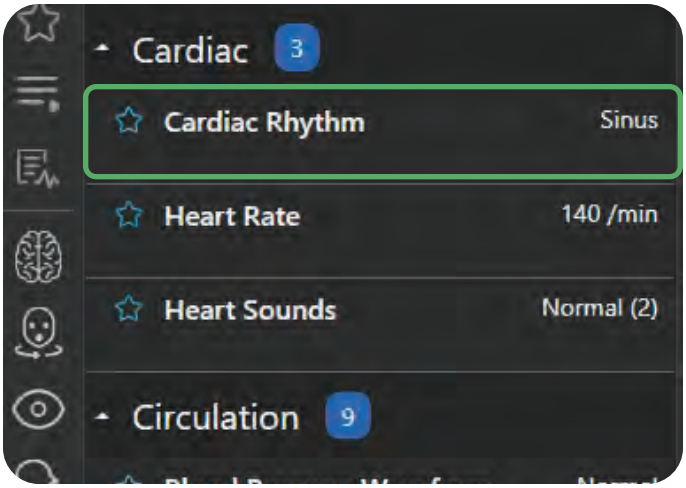
Super TORY's cardiac capabilities, to name a few, include heart sounds and auscultation sites, 4-lead ECG monitoring using real monitoring devices, defibrillation, and CPR feedback.

3.6.1. Cardiac Rhythm

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

To choose a different cardiac rhythm for Super TORY:

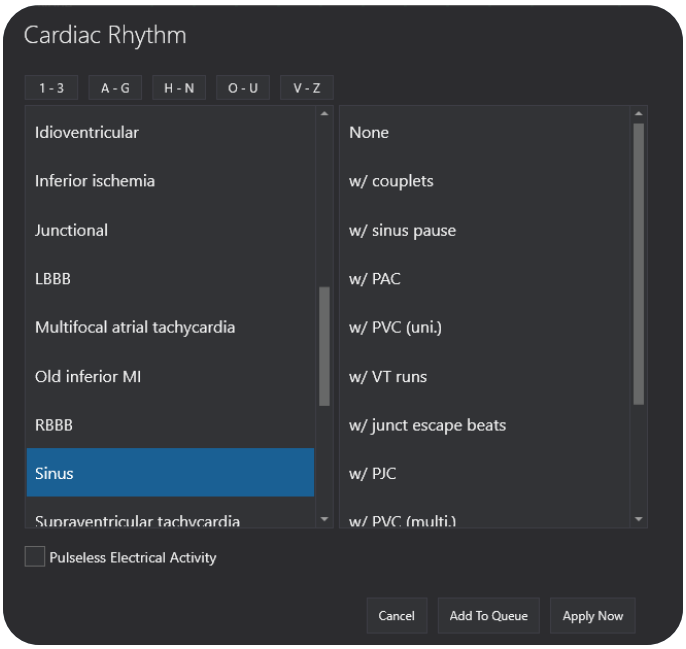
1. In UNI 3, under the **Cardiac** section click **Cardiac Rhythm**.



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

   Super TORY's default **Cardiac Rhythm** is set to Sinus.

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

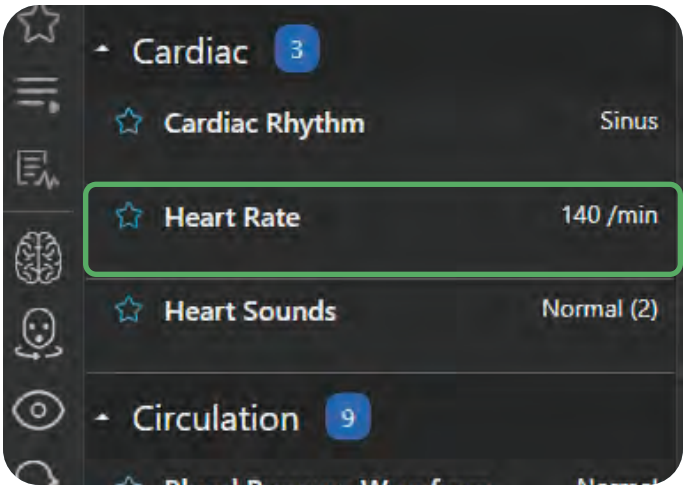


3.6.2. Heart Rate

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

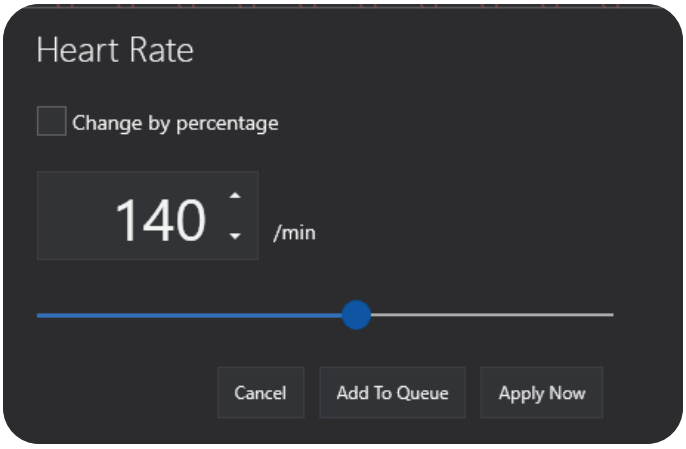
To change Super TORY's heart rate:

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



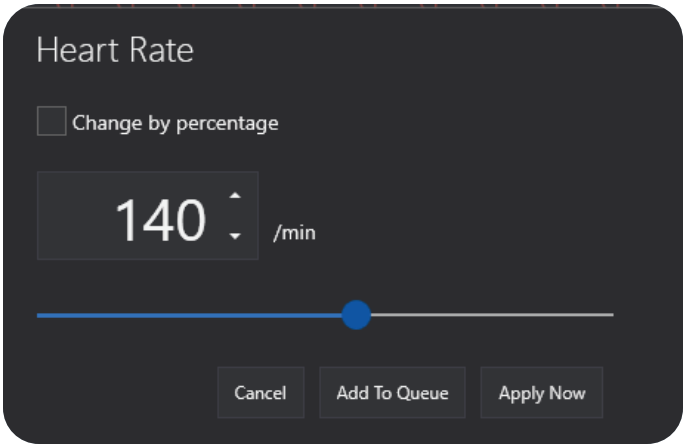
2. Enter a numeric value or adjust the slider bar to change Super TORY's heart rate.

Super TORY's default heart rate is 140 beats per minute.



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

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



3.6.3. Heart Sounds, Locations, & Auscultation

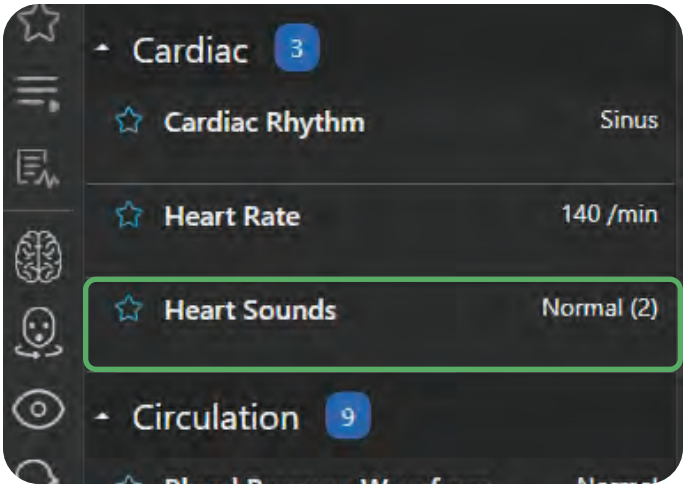
Super TORY has anterior heart sound auscultation sites (aortic, pulmonic, tricuspid, and mitral) with updated heart sounds which include:

- Normal
- None
- Atrial Septal
- Ventricular septal
- S4
- Systolic ejection murmur
- Systolic regurgitation murmur
- Congenital aortic stenosis
- Innocent systolic murmur
- Pulmonary hypertension
- Patent ductus arteriosus

These are a great addition for various auscultation assessments!

To change Super TORY's heart sounds:

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

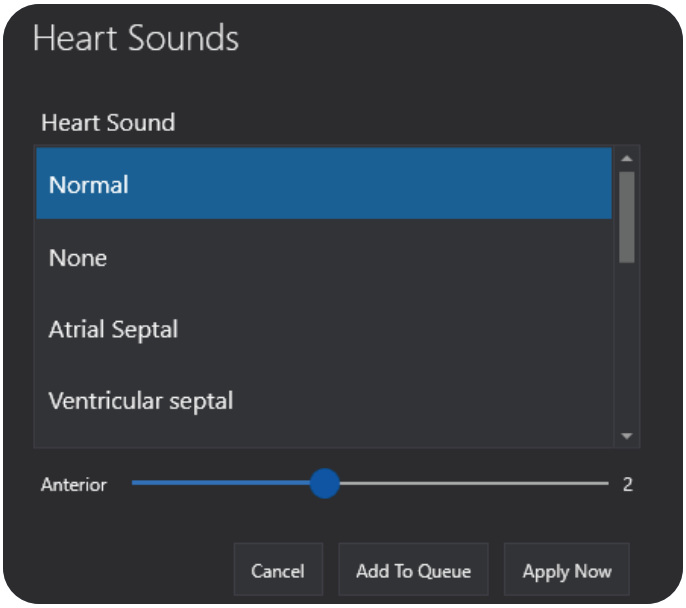


2. Select from the available options to change the **Heart Sounds**.

   Super TORY's default Heart Sounds are set to Normal.

3. Use the slider bars below each heart sound site to adjust the volume level for its **Anterior** speaker.

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



Heart Sounds Locations & Auscultation

Super TORY has anterior lung sounds that can be auscultated with a real stethoscope.

3.6.4. ECG & Defibrillation

Super TORY supports 4-lead monitoring using real medical monitoring equipment, defibrillation, cardioversion, pacing, and CPR.

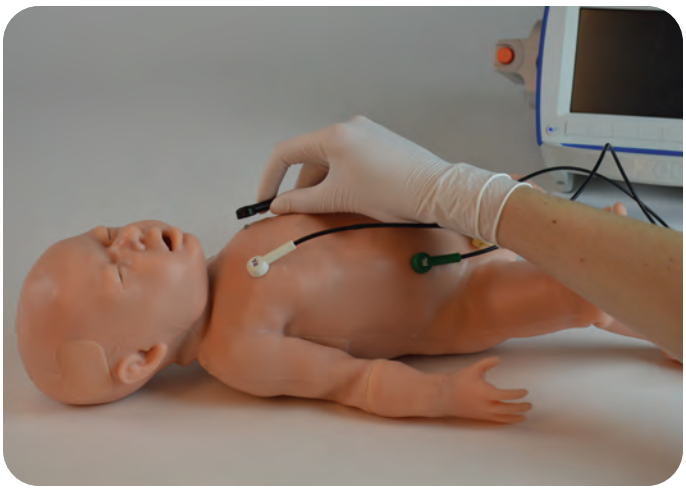
ECG & Defibrillation Guidelines

Only deliver electrical therapy when the simulator is fully assembled, dry, and undamaged.

- Defibrillation is only allowed on the sternum and apex sites or the anterior and posterior 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 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 re-use 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, 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.

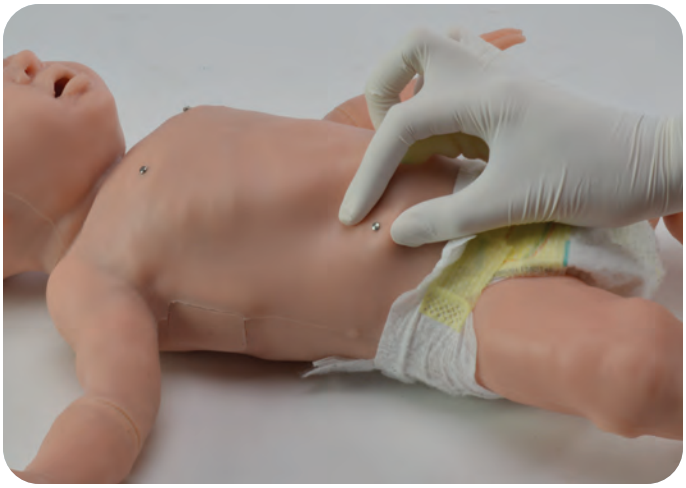
ECG Setup

To prepare Super TORY for an ECG simulation, there are two methods of connecting him to a real medical monitoring device. You can either directly connect the ECG leads to the ECG snaps pre-installed on his torso, or the **Adapters for Non-Snap ECG** electrodes can be used together with gel electrodes to connect the ECG leads.



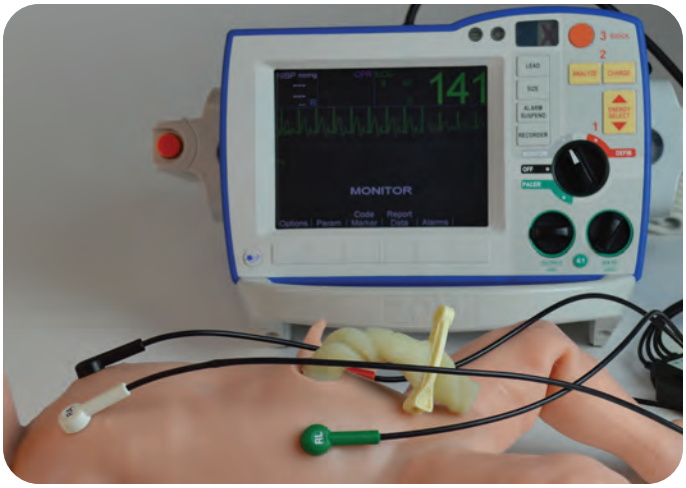
To connect an ECG monitor to Super TORY's pre-installed ECG snaps:

1. Connect the ECG leads directly to Super TORY's pre-installed ECG snaps by pressing the lead onto the ECG snap.



If the ECG sites for LL and RL are difficult to snap into place, carefully support the skin from underneath and avoid digging fingernails into the skin as this may cause skin tears.

2. Connect the ECG leads to an ECG monitor and turn it on.



Use the **Adapters for Non-Snap ECG** electrodes to simulate the process of placing gel electrodes on Super TORY and then connecting ECG leads.

To attach the **Adapters for Non-Snap ECG** electrodes:

1. Obtain the 4 Adapters for Non-Snap ECG electrodes from Super TORY's accessories and connect one to each of Super TORY's pre-installed ECG snaps.

2. Use real gel ECG electrodes and place one atop each of the **Adapters for Non-Snap ECG**.

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

Defibrillation and Pacing

Do not defibrillate over 30 Joules of energy. Doing so will cause serious internal damage to the simulator.

Super TORY supports defibrillation, cardioversion, and pacing using real energy and real devices.

Super TORY has two methods to deliver energy: attach Super TORY's **A/P Defibrillation Adapter**, which is included in the accessories, or use an optional **Snap Cable Assembly** that is available for purchase. The Snap Cable Assembly can be modified to be compatible for Zoll, Philips, Physio, or Customer Specific defibrillators.

Physio

Zoll

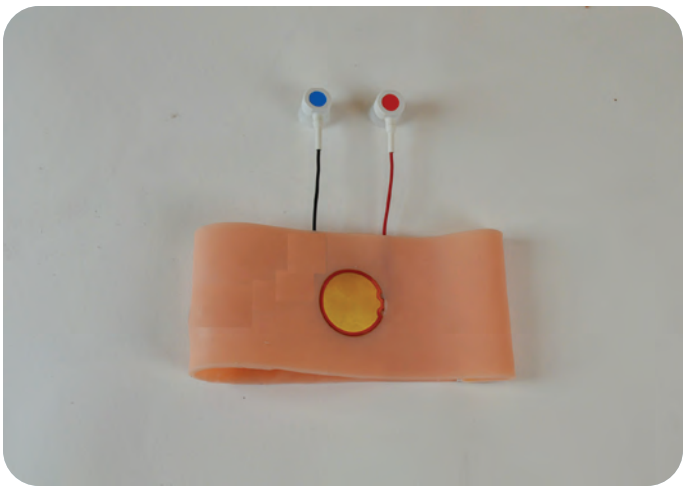
Philips

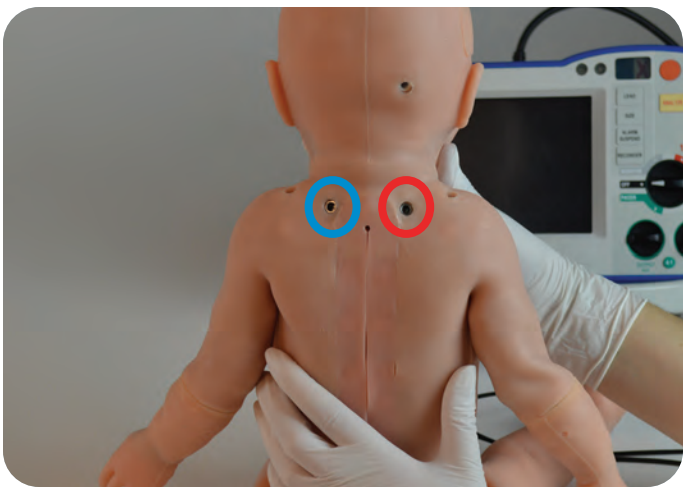
Defibrillation Setup (A/P Defibrillation Adapter)

To utilize Super TORY's **A/P Defibrillation Adapter:**

1. Wrap the **A/P Defibrillation Adapter** around Super TORY's chest.
2. The **A/P Defribllation Adapter** has two snap cables that attaches it to Super TORY. Connect the **RED** connector to the port located on Super TORY's upper right back.
3. Connect the **BLUE** connector to the port located on Super TORY's upper left back.
4. Place your defibrillation patches on the large gold sites located on the **A/P Defibrillation Adapter**.

Super TORY is now ready to receive live energy.



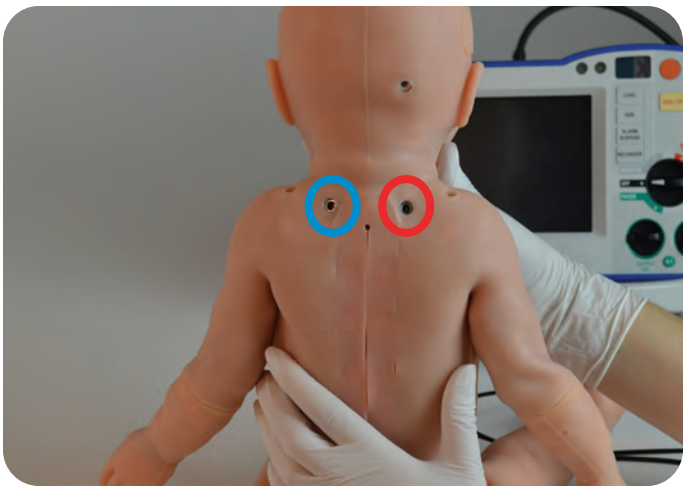


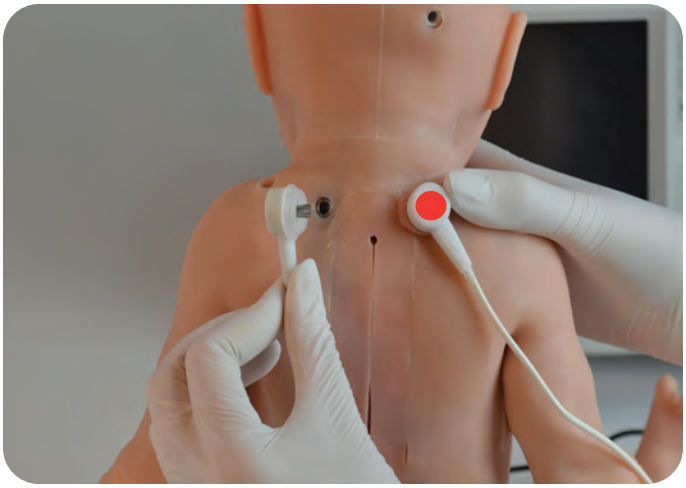
Defibrillation Setup (Snap Cable Assembly Option)

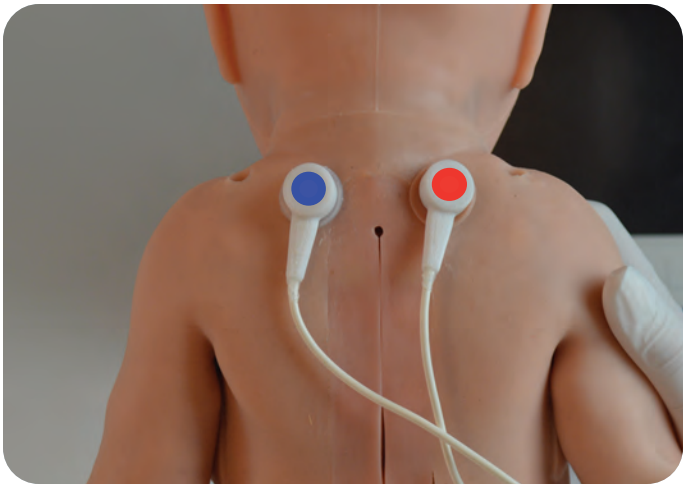
Do not defibrillate over 30 Joules of energy. Doing so will cause serious internal damage to the simulator.

If the **Snap Cable Assembly** option was purchased for Super TORY, to utilize it:

1. Connect the **RED** connector to the port located on Super TORY's upper right back.
2. Connect the **BLUE** connector to the port located on Super TORY's upper left back.
3. Attach the **Snap Cable Assembly** connector to your defibrillator.





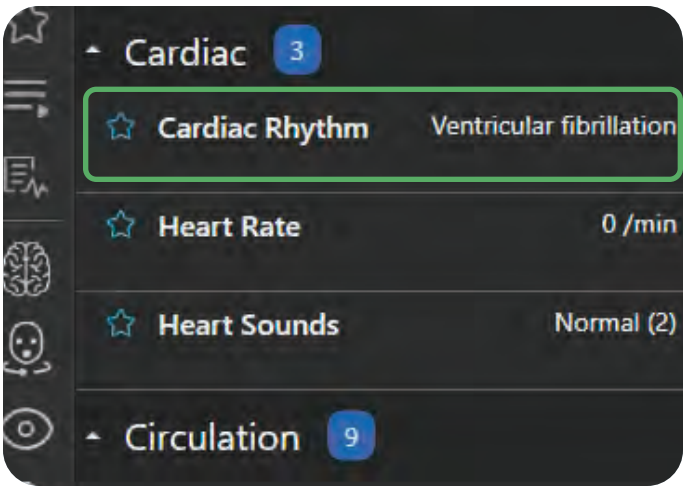


3.6.5. Cardiopulmonary Resuscitation (CPR)

Super TORY supports ECG-derived respiration monitoring (EDR) and effective chest compressions will generate palpable femoral pulses and ECG activity.

In addition to that, UNI 3's eCPR provides real-time quality feedback and reporting on time to CPR, compression depth/rate, compressions, interruptions, ventilation rate, and also has a smart CPR voice coach. Learn more about UNI's CPR tab in section 6.

To set Super TORY up for CPR:

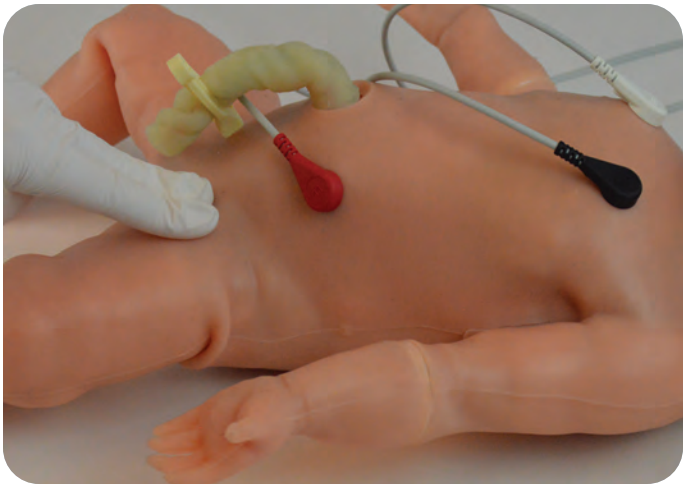


1. In UNI 3, under the **Cardiac** section click **Cardiac Rhythm** and select a rhythm that requires chest compressions.

2. Perform proper chest compressions on Super TORY.

Avoid digging fingernails into the skin of Super TORY. Marks and/or indentations of fingernails can turn into skin tears on Super TORY's chest. This will result in requiring a full body skin replacement/repair.

Monitor the effectiveness of the performed CPR in the CPR tab in UNI. Effective chest compressions will also result in palpable femoral pulses.



3.7 CIRCULATION

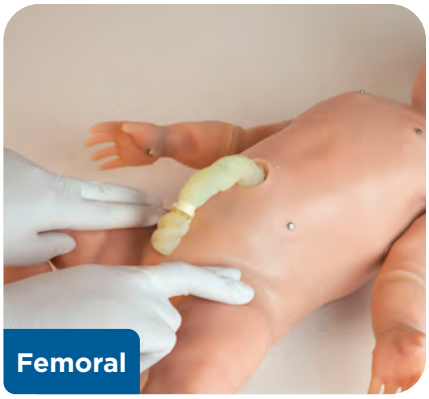
3.7.1. Pulse Locations & Controls

Super TORY has palpable pulses located at the fontanelle, bilateral brachial, bilateral femoral, and umbilical locations.

Once a pulse is palpated, Super TORY's system will detect the pressure, activate the pulses, and log this as an event. Once a pulse location is activated it will stay activated until the provider removes the pressure of palpation. Once no pressure is detected, then after 20 seconds, the pulses will deactivate.


Fontanelle


Brachial


Femoral


Umbilical

3.7.2. Blood Pressure Methods & Controls

Super TORY supports non-invasive auscultatory and oscillometric blood pressure measurements with real monitors and devices. The non-invasive auscultatory method of taking blood pressure on Super TORY requires a modified blood pressure cuff (not provided in his accessories) be connected to his left upper shoulder before proceeding with the procedure. To utilize non-invasive oscillometric, or an automatic, blood pressure machine, the oscillometric cuff (not provided) needs to be modified in order to work with Super TORY.

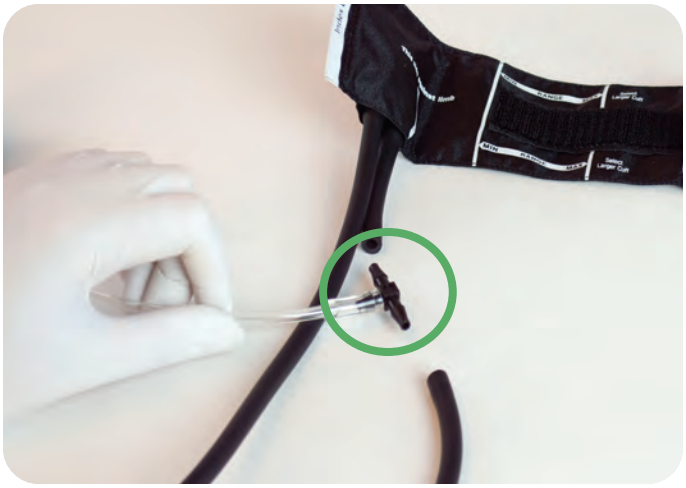
Non-Invasive Blood Pressure (Auscultatory)

Super TORY's non-invasive auscultatory method of taking blood pressure requires modifying a blood pressure cuff (not provided) using the **Blood Pressure Tube Adapter** included in the accessories box. After the blood pressure cuff has to been cut and modified, connect it to his left upper shoulder before proceeding with the procedure. The bell of a stethoscope is placed above the bend of Super TORY's elbow to auscultate for Korotkoff sounds, which the volume can be controlled in UNI 3.

To modify Super TORY's blood pressure cuff:

1. Obtain your blood pressure cuff and cut the hose between the cuff and gauge.

2. Locate the **Blood Pressure Tube Adapter** (a black T connector with a clear tubing attached) from the accessories box and use it to connect the hose that was just cut.



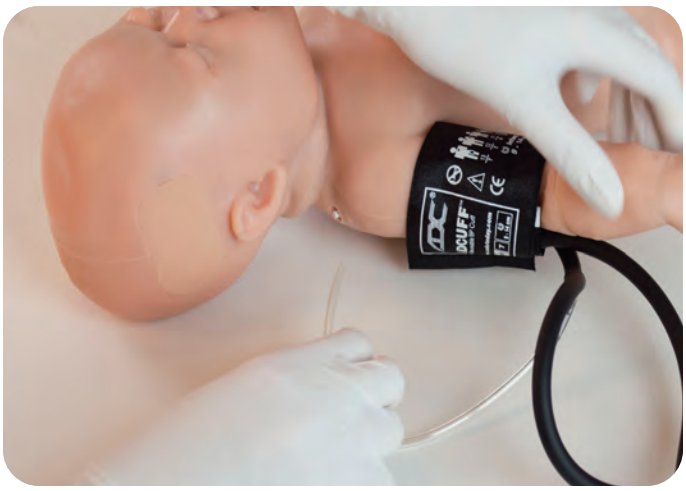
After making the modification to the Blood Pressure cuff, it is now ready to be connected to Super TORY and used.

To connect the modified Blood Pressure cuff to Super TORY:

1. Place the modified Blood Pressure cuff around Super TORY's RIGHT arm as you would a real patient.

2. Connect the clear hose that was added during the modification to the port located on Super TORY's RIGHT shoulder.

3. Inflate the Blood Pressure cuff and auscultate for Korotkoff sounds.



Non-Invasive Blood Pressure (Oscillometric/Automatic)

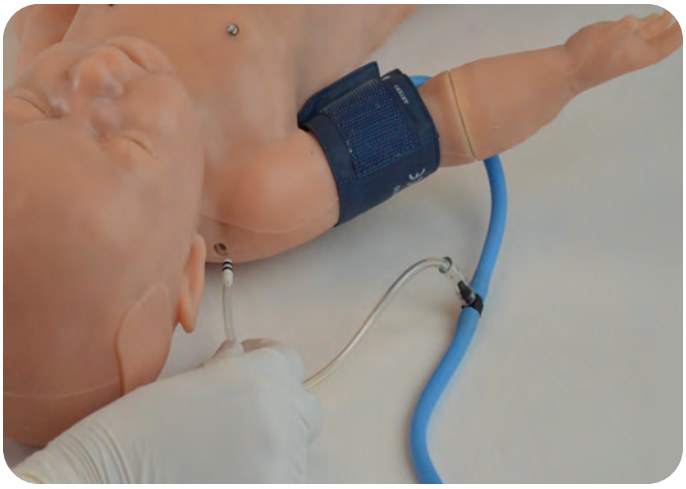
Super TORY's non-invasive oscillometric, or automatic, method of taking blood pressure requires the automatic blood pressure cuff (not provided) that is compatible with your blood pressure machine to be cut and modified.

To modify an automatic blood pressure cuff:

1. Cut the hose on your automatic blood pressure cuff and insert a **Blood Pressure Tube Adapter** between the ends of the cut hose.

   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 the upper left shoulder of Super TORY.

After modifying the non-invasive oscillometric, or automatic, blood pressure cuff it is ready to be connected to Super TORY.



To connect your now modified oscillometric, or automatic, blood pressure cuff to Super TORY:

1. Connect the end of the Blood Pressure Tube Adapter to the port on Super TORY's upper RIGHT shoulder.

2. Apply the cuff to Super TORY's RIGHT arm as you would a real patient and be sure to connect the cuff to the automatic blood pressure machine as well.

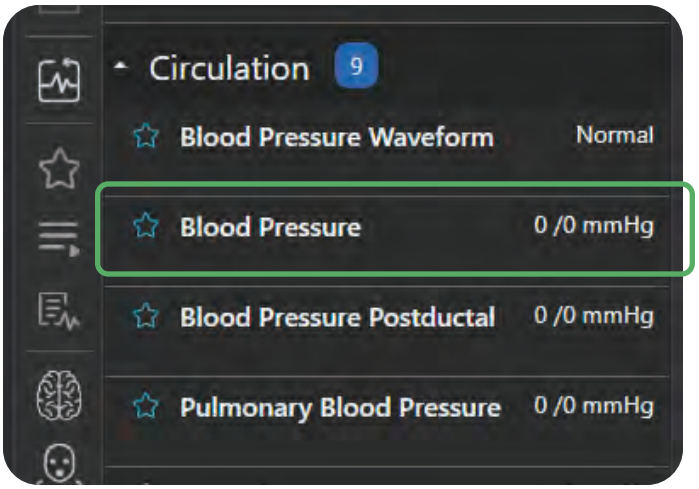
Blood Pressure

To adjust the values for all methods of taking blood pressure on Super TORY (auscultatory or oscillometric/ automatic) use the **Blood Pressure** control in UNI 3.

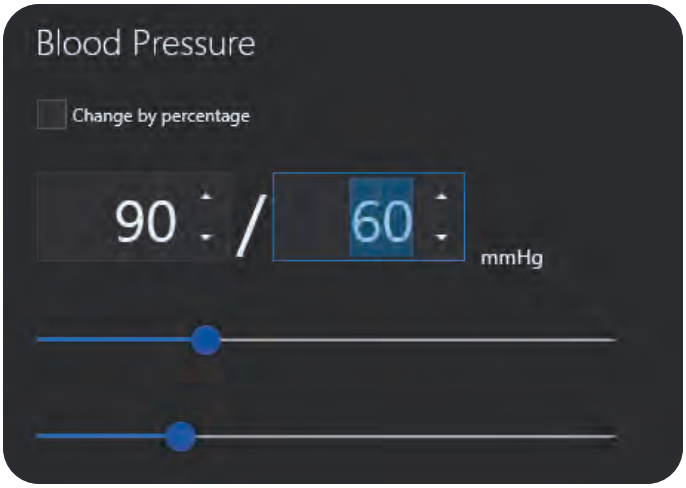
The **Blood Pressure** values will be displayed on the real monitoring devices and on the Monitor within UNI as the **ABP** parameter. If the optional Bedside Virtual Monitor is purchased, the Blood Pressure values may also be displayed on there as well.

To change Super TORY's Blood Pressure:

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

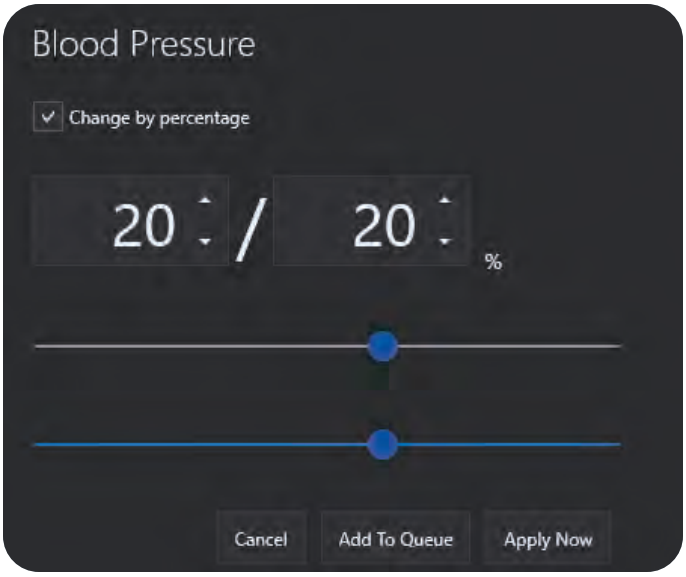


2. Enter a numeric value or adjust the slider bar to change Super TORY's systolic and diastolic Blood Pressure.



3. Check **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 Super TORY or click **Add To Queue** to load at a later time.



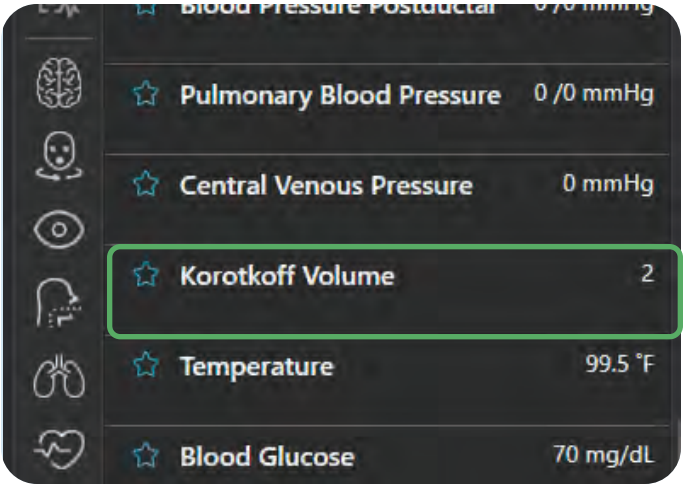
Korotkoff Sounds

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.

Super TORY has the ability to simulate Korotkoff sounds when taking his blood pressure. The volume of these sounds can be controlled so assist with the assessment.

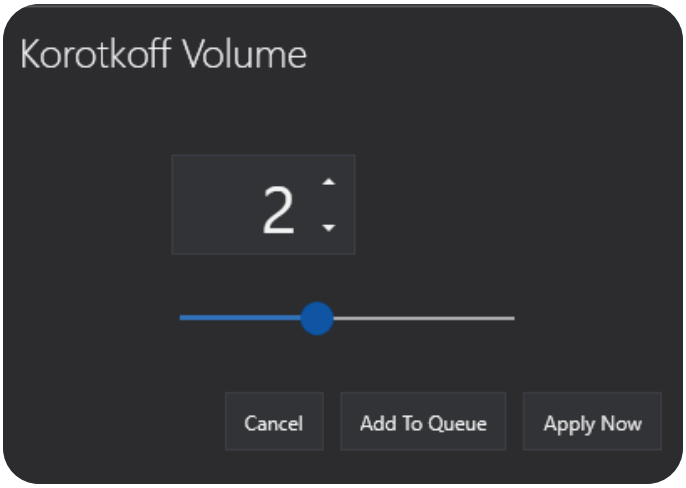
To change the Korotkoff volume level:

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 Super TORY or click **Add To Queue** to load at a later time.

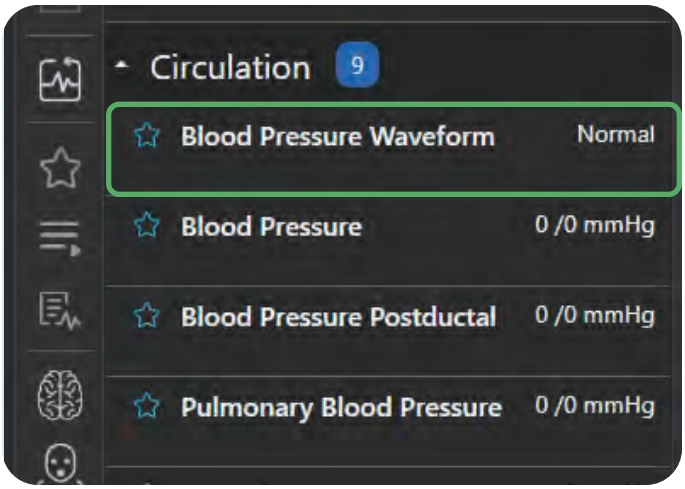


Blood Pressure Waveform

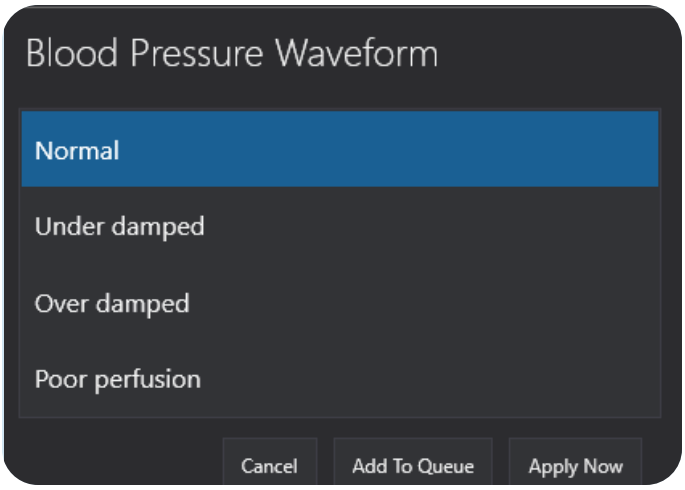
In UNI 3, **Blood Pressure Waveform** displays different ABP waveforms on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

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

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



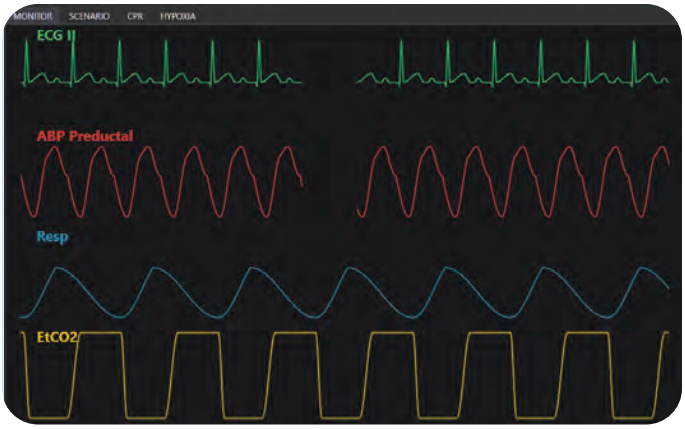
2. Select from the available options.



3. Click **Apply Now** to immediately apply the selections to Super TORY 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.



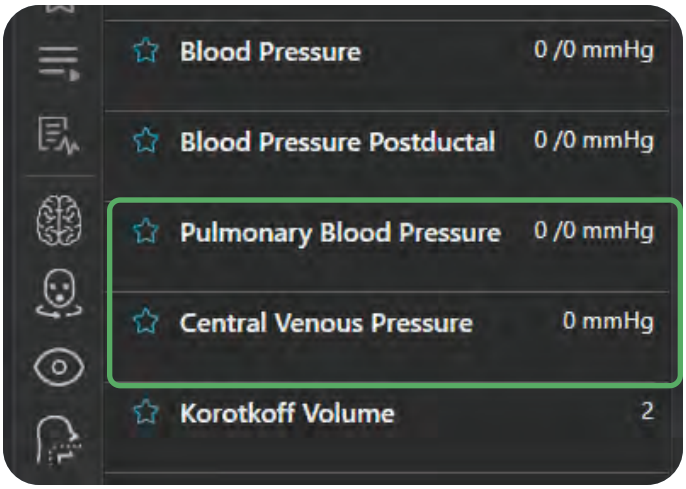
When **Poor Perfusion** is selected for the **Blood Pressure Waveform** this is how the waveform is displayed.

Plumonary Blood Pressure & Central Venous Pressure

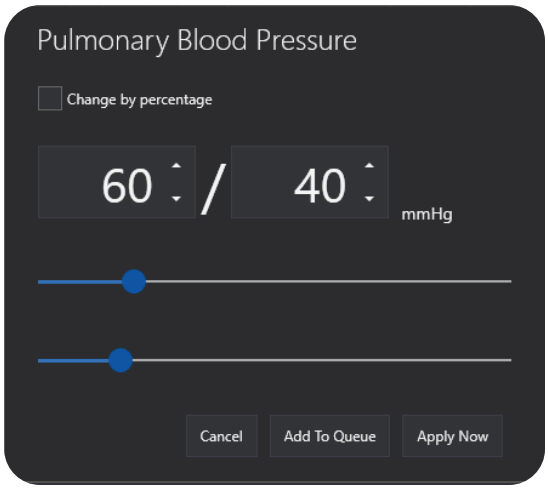
Pulmonary Blood Pressure and **Central Venous Pressure** are virtual values that can be changed to affect Super TORY's EtCO2 waveform on the Monitor tab within UNI or on a Bedside Virtual Monitor (option available for purchase).

To change the level of these pressures:

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

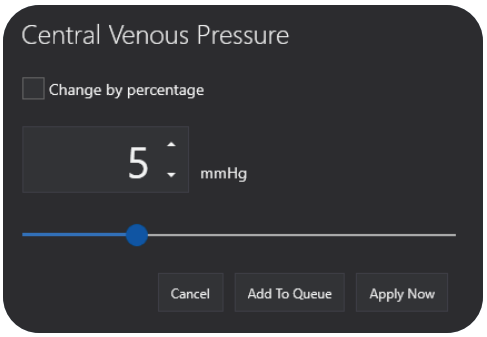


2. Enter the numeric value or use the slider bar to change the level of the pressure.



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

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



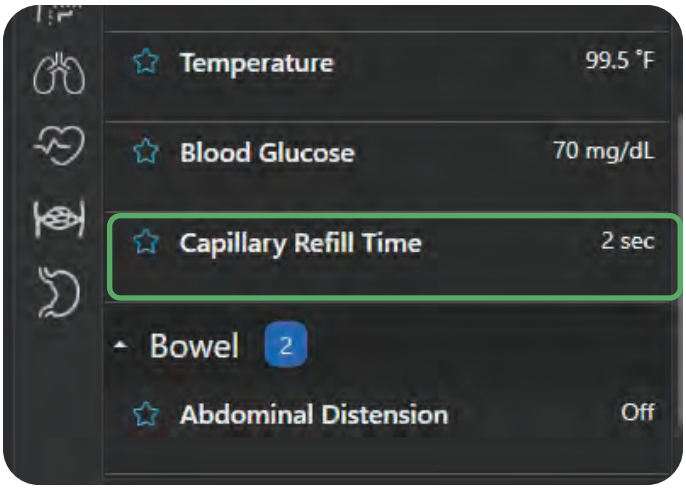
3.7.3. Capillary Refill & Location

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".

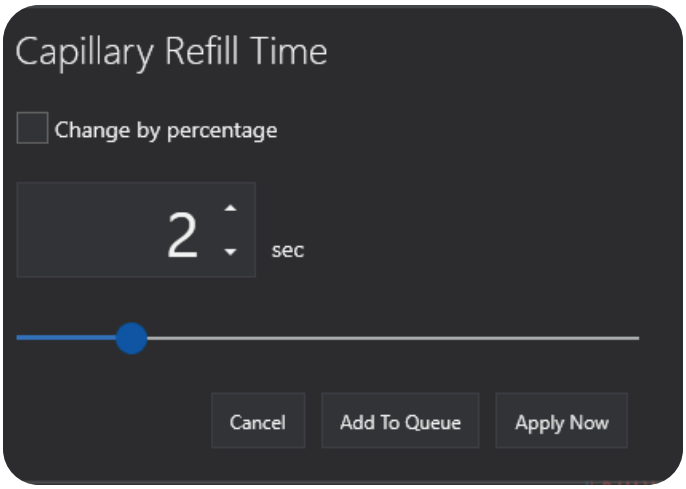
Capillary Refill Time can be measured on Super TORY's LEFT foot. The time taken for Super TORY's foot to regain his normal color may be controlled through UNI 3.

To adjust Super TORY's **Capillary Refill Time**:

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

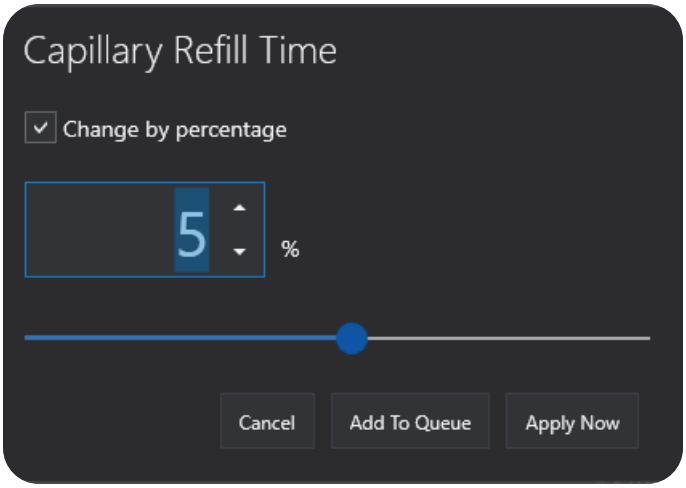


2. Enter a numeric value or adjust the slider bar to change the **Capillary Refill Time**.



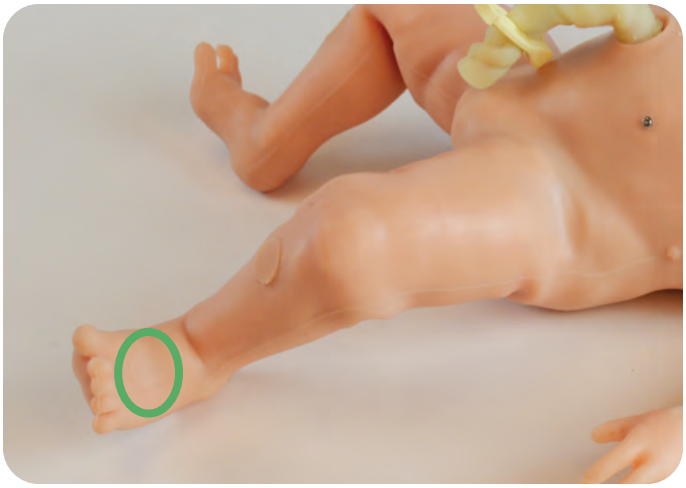
3. Check **By Percentage** to change the **Capillary Refill Time** by percentage rather than by units of time.

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



5. Apply pressure to Super TORY's **Left Foot** until the foot turns white and then release.

The value set for **Capillary Refill Time** will be the amount of time it takes for Super TORY's left foot to resume normal color.



3.7.4. IV Hands, Scalp Vein, & Intraosseous Access

IV Hand

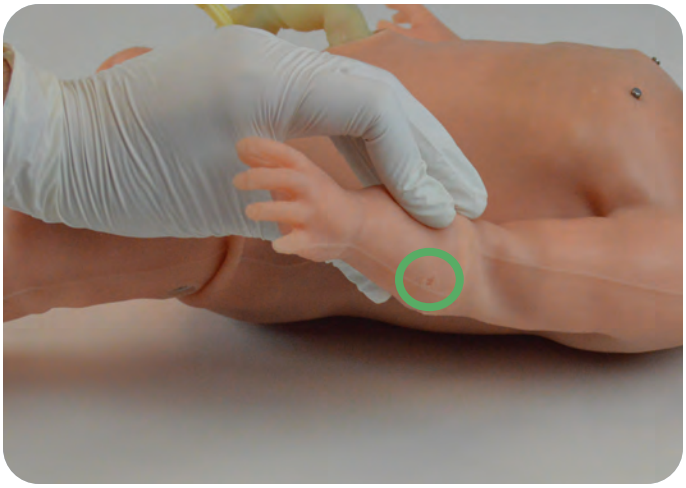
Bllateral IV training hands allow intravenous infusions as well as draining fluids on Super TORY.

Two replaceable arms are supplied with Super TORY, one left and one right.

It is recommended to prefill the IV hands before performing exercises.

To prefill the IV hands:

1. Locate the drain port in the IV hand.



2. Insert the drainage hose into the drainage port of the arm,

3. Palpate to locate the veins.

4. Insert a size 24 gauge needle.

5. Connect a fluid filled syringe and inject fluids.

6. When fluid begins to enter the drainage hose, remove the filling needle and clamp the drainage hose closed.

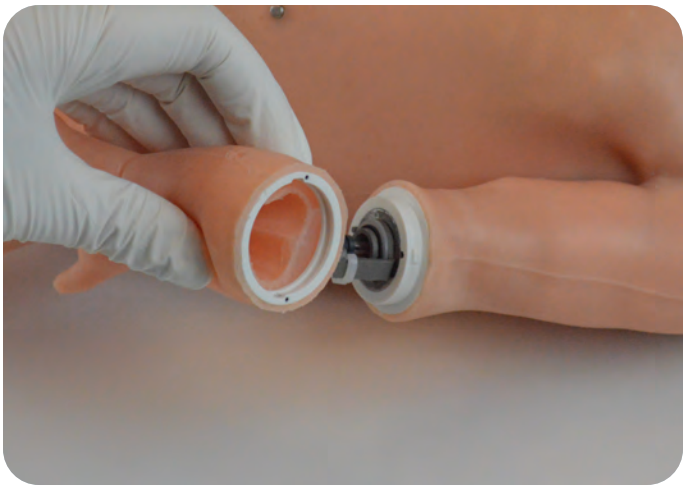
The IV hand is now ready for IV exercises. It is recommended to use a 24 gauge needle for IV withdrawal.

Replacing the IV Hand

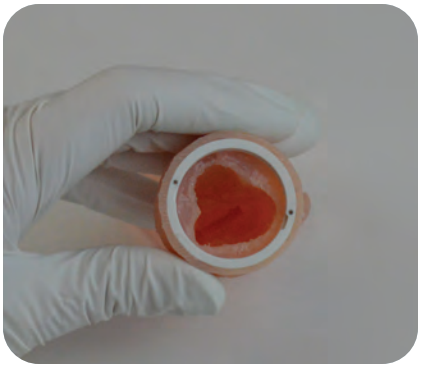
After each simulation day, it is recommended to remove the arm, rinse it out, and let it dry for several hours.

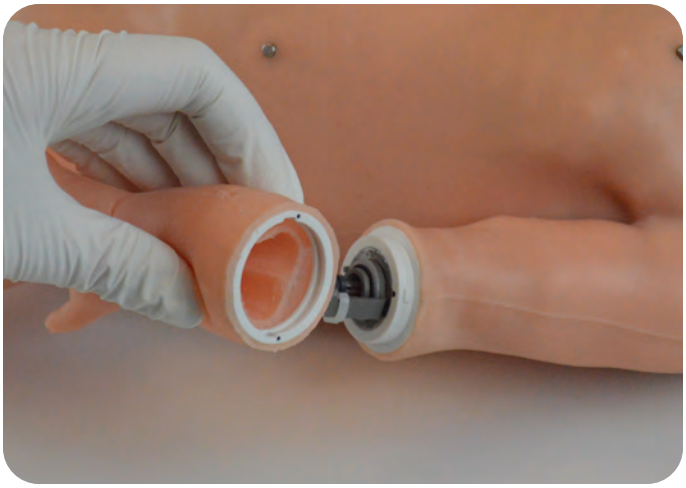
1. Twist the left hand clockwise and the right hand counterclockwise until you reach the rotational stopper or the palm of the hand is facing up.

2. Pull the hand from the arm carefully.



3. Align the new IV hand with the markers.





4. Insert the IV hand with the palm facing up.

5. To secure the hands, twist the left hand counterclockwise and the right hand clockwise until you pass the rotational stopper.

Scalp Vein

Access the scalp vein on the right side of Super TORY's head.

1. For continuous infusions, connect the drainage hose to the drain port located at the back of the head.

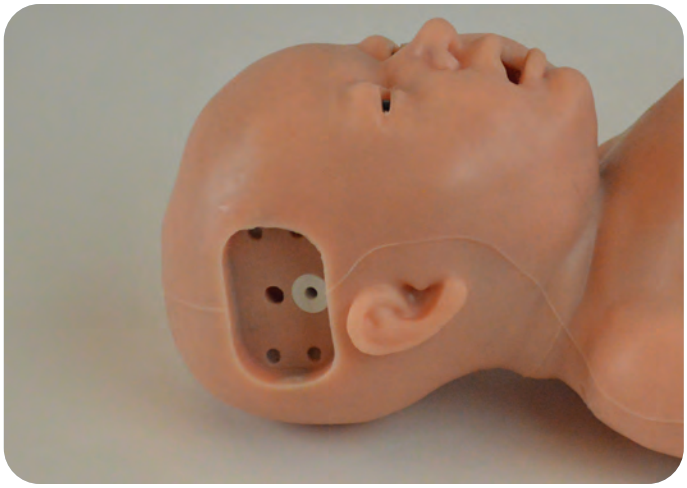
2. Open the drainage hose clamp.

3. Palpate the area to locate the vein and insert a 23 gauge needle.

Replacing the Scalp Vein

1. Remove the used insert.

2. Obtain a new insert and align the drainage connector to the drainage port.



3. Install the replacement scalp insert.

Use some alcohol on the sides of the insert to make the action of sliding it into the space easier.

Intraosseous Access

The intraosseous access allows for infusing fluids, blood, and /or drugs directly into the bone marrow of the tibia. This system allows for continuous intraosseous infusion.

It is recommended to use a 15 gauge needle for Super TORY's IO sites.

To use Super TORY's IO sites:

1. Push the drainage hose in the drain port located on the bottom of the leg.

2. Perform the IO excercise with an appropriately sized needle.

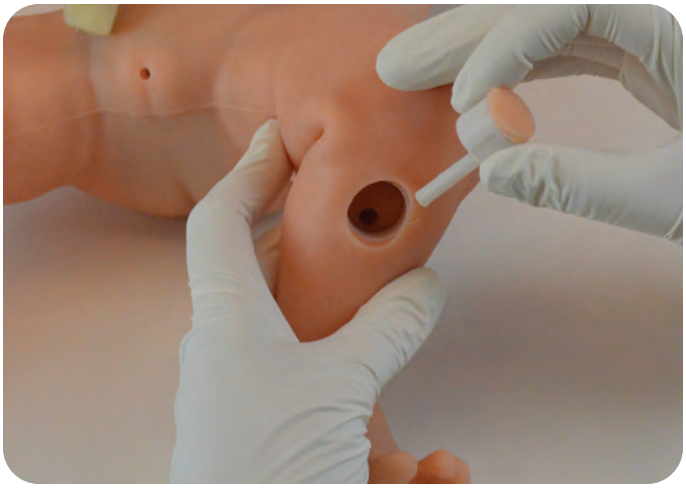
Replacing the Tibia Insert

Super TORY has 2 replaceable IO inserts.

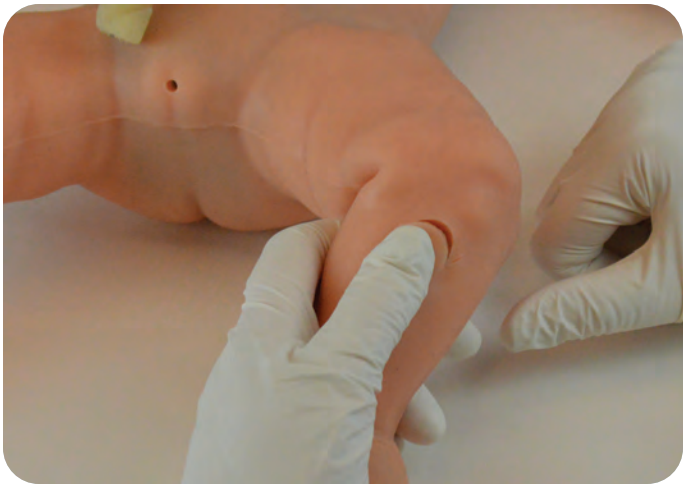
To replace the tibia insert:

1. Grasp Super TORY's leg and from the underside push the IO insert up.

2. Remove the tibia bone.



3. Insert the drainage end of the IO insert first and align it to the hole in the back of the leg before fitting the rest of the bone in place.



3.7.5. Umbilical Catheterization

Use the vein in Super TORY's umbilical cord to catheterize or inject. Clamp, cut, sample, and/or use the umbilical cord for continuous infusion.

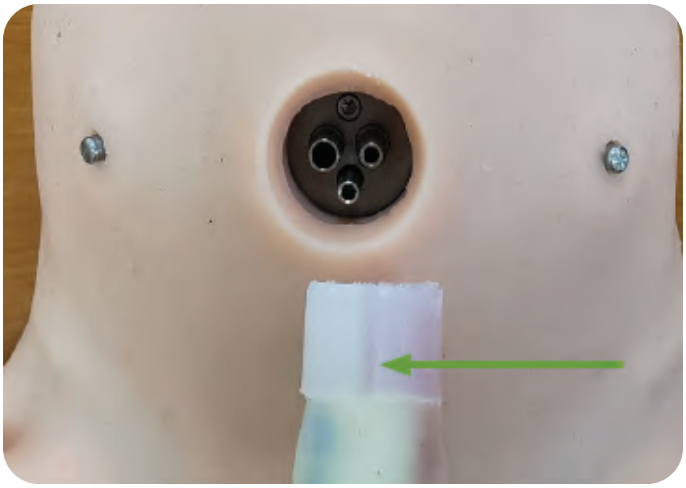
The umbilical arteries may only be used for placement catheterization ONLY.

Installing the Umbilical Cord

1. Remove the naval plug (avoid using fingernails to grab the insert as this may cause skin tears).

2. Spray some iso-propyl alcohol to the umbilical cord.

3. Align the groove on the umbilical cord to face pointing towards the upper torso.



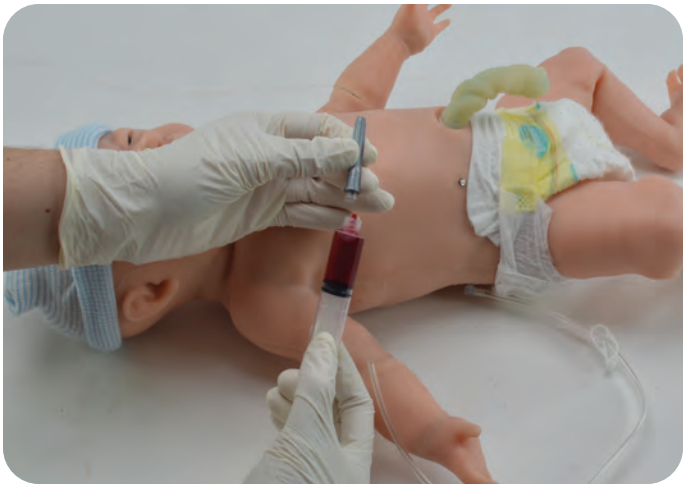
4. Insert the umbilical cord.

5. Pull slightly on the umbilical cord to ensure that it is securely in place.

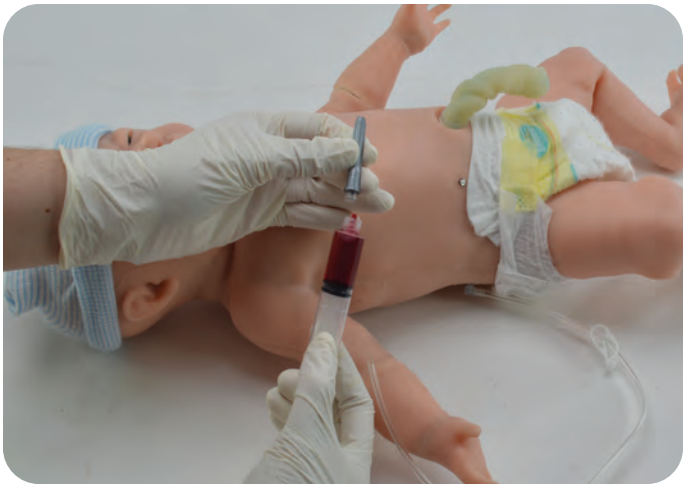
Prefilling the Umbilical Cord

1. Connect the drainage hose to the port located on Super TORY's right hip.

2. Fill a syringe with artifical blood concentrate and connect the **Umbilical Cord Filling Tip** to the syringe.



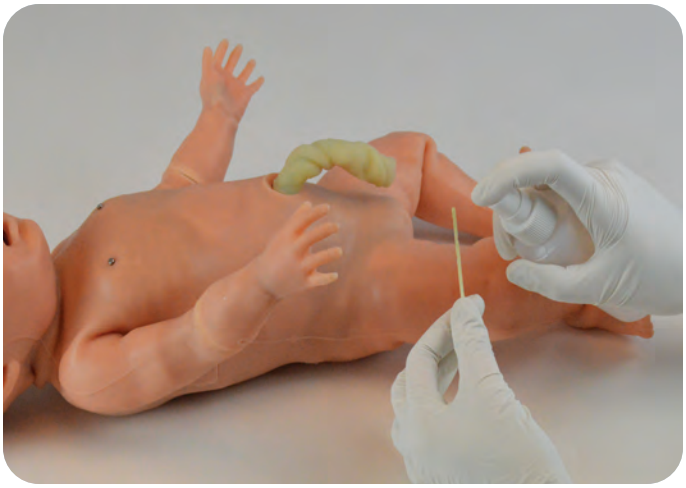
3. Insert the **Umbilical Cord Filling Tip** into the umbilical vein.



4. Depress the syringe to push the fluid into the system and once fluid exits the drainage hose, close the clamp.

Catheterization

1. Lubricate an appropriately sized catheter.



2. Catheterize the vein in the umbilical cord.

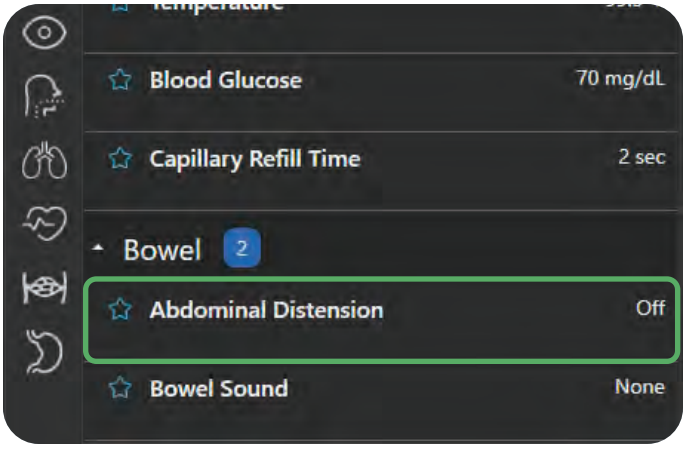
The umbilical arteries may only be used for placement catheterization ONLY.

3.7.6. Bowel

Abdominal Distension

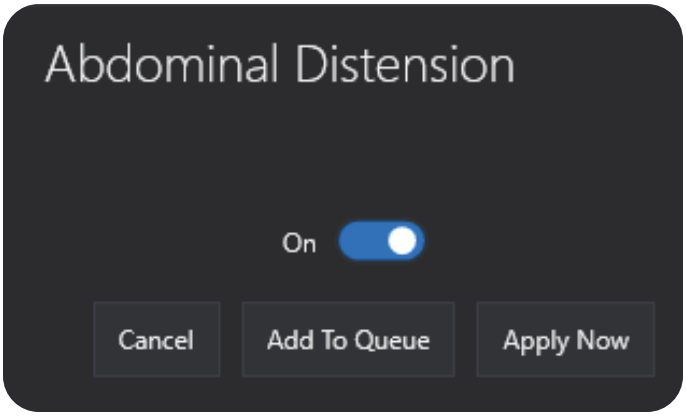
Abdominal distension can be activated and displayed to simulate an intestinal obstruction.

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



2. Click the switch to turn **Abdominal Distension** ON or OFF.

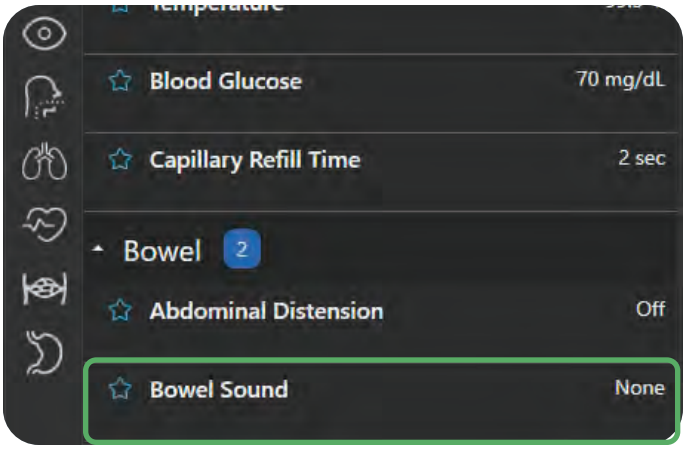
3. Click **Apply Now** to immediately apply the selections to Super TORY or click **Add To Queue** to load at a later time.



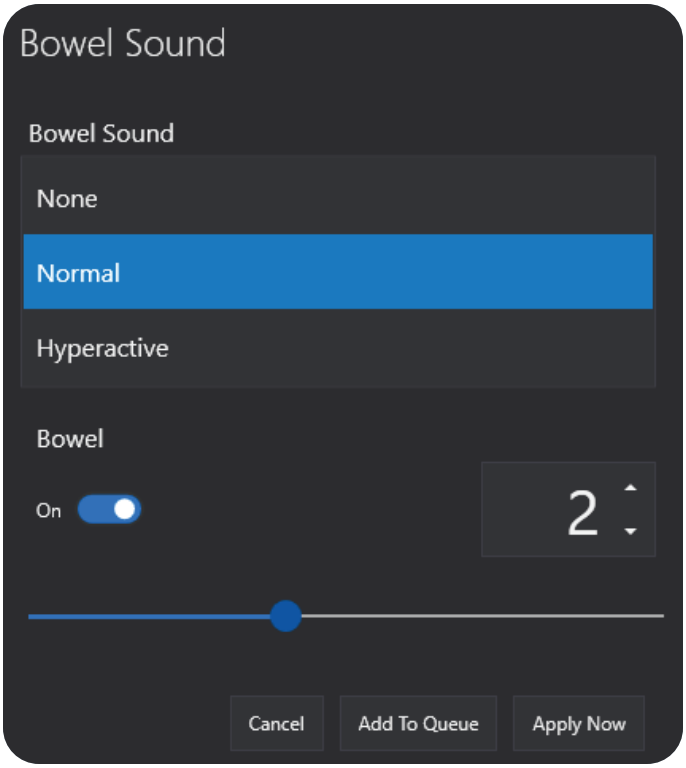
Bowel Sounds

To auscultate the abdomen for normal and hyperactive bowel sounds:

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



2. Select from the available list of **Bowel Sound** options.



3. Enter the numeric number or use the slider bar to adjust the volume of the **Bowel Sounds**.

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

3.7.7. Urinary Catheterization

Perform urinary catheterization exercises with fluid return on Super TORY.

Super TORY has interchangeable male and female genitalia.

To change the genitalia:

1. Obtain either the male or female genitalia.

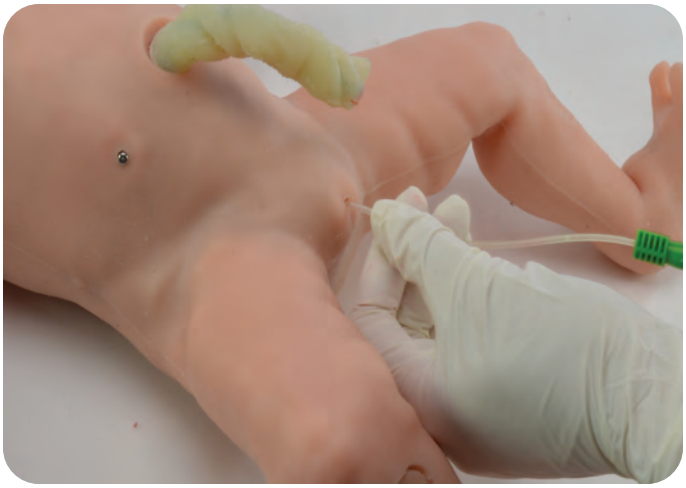
2. Align the connector on the genitalia to the urethra port on Super TORY.

3. Push the genitalia in place.

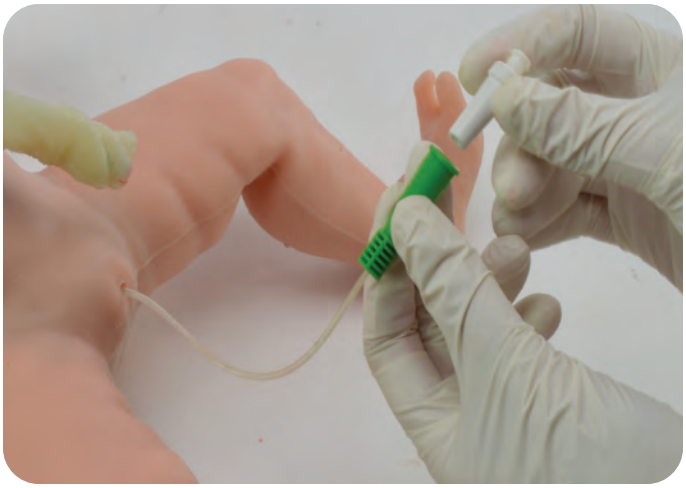
To fill the bladder:

1. Lubricate the catheter with mineral oil.

2. Insert the catheter.



3. Connect the **Urethral Filling Adapter** to the catheter.



4. Connect a syringe filled with artifcial urine concentrate to the **Urethral Filling Adapter.**

5. Inject up to 6 mL of fluid.

4. Working with UNI 3®

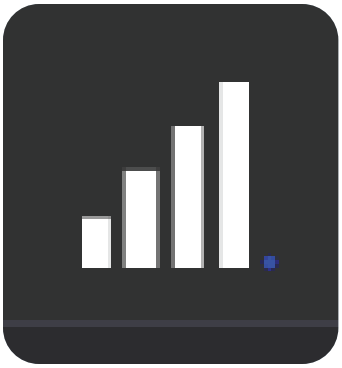
4.1 UNI® INTERFACE

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.

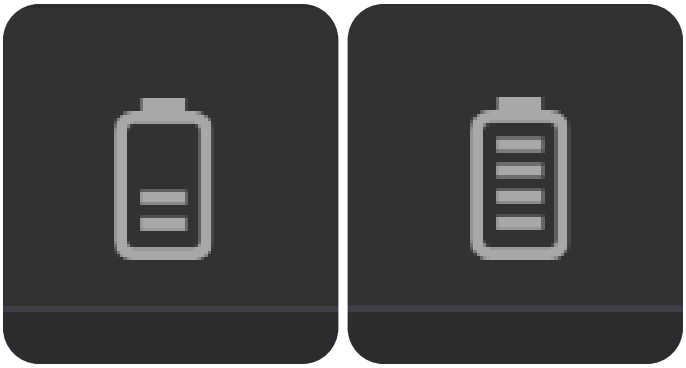
4.1.1. Connection Status

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.



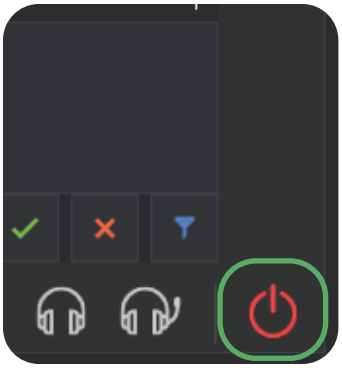
4.1.2. Battery Life Indicator

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.

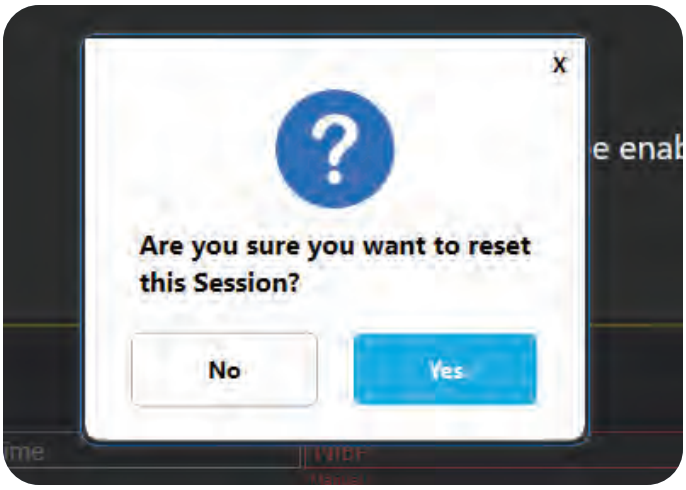


4.1.4. Session Clock

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.

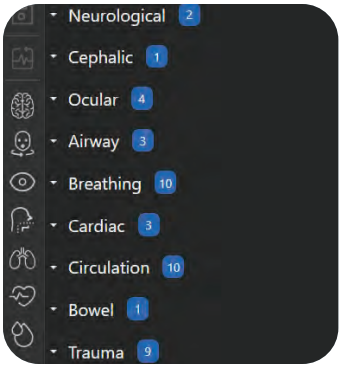
The session timer can be reset by right clicking the session timer and selecting **Reset Session Clock**.

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 sections are divided into separate categories.




Neurological


Cephalic


Airway


Breathing

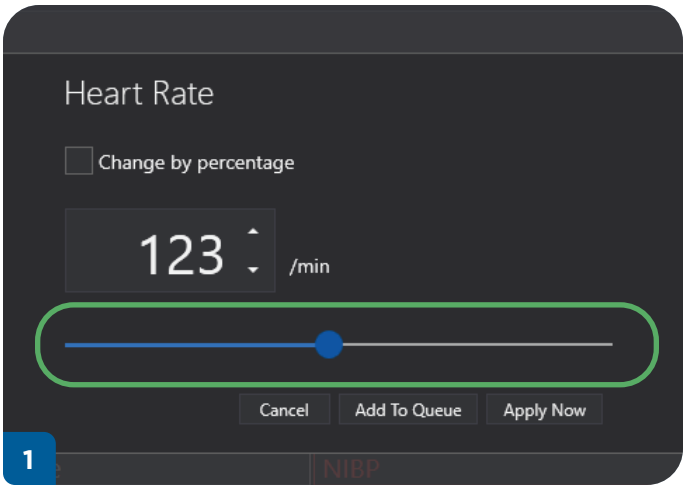

Cardiac


Circulation

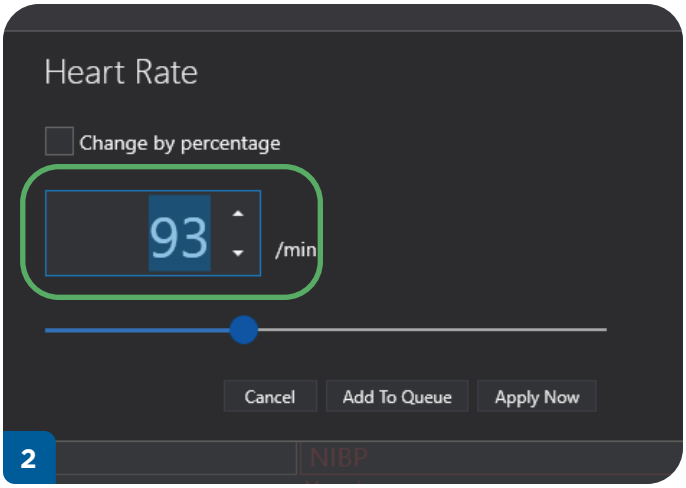

Bowel

4.1.6. Changing Vital Signs

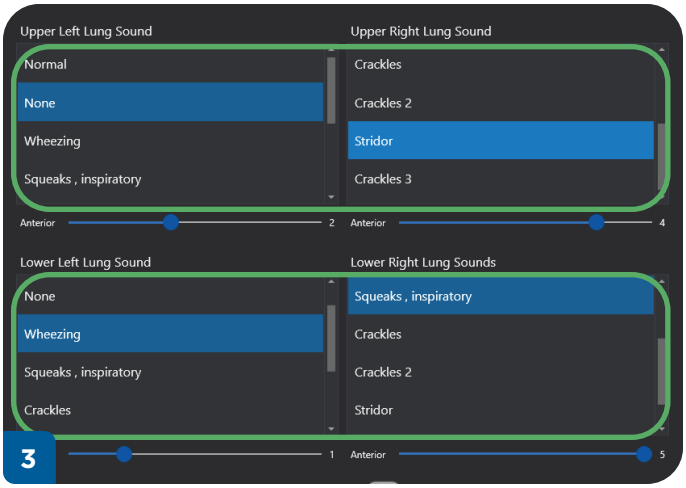
1. To adjust numerical values (e.g. heart rate, blood pressure, respiratory rate, etc.), click a vital and drag the slider control.



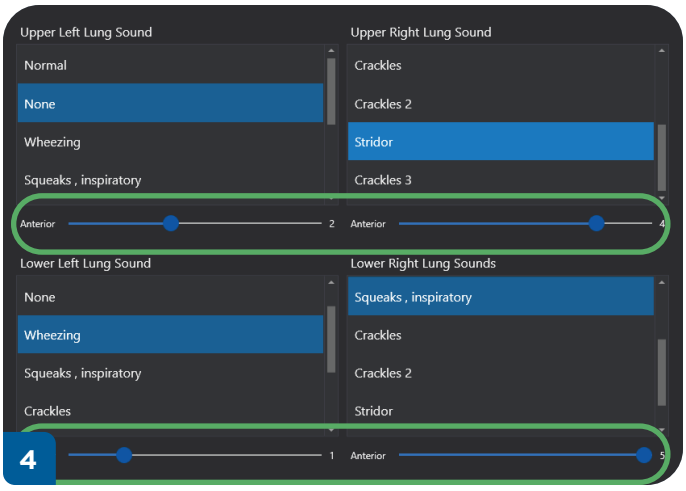
2. The facilitator may also use their keyboard for manual entry and click the green **Apply Now** to confirm the change.



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.)

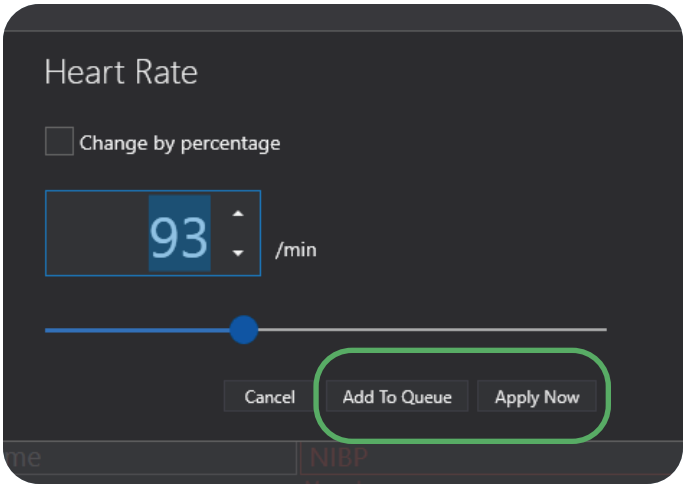


4. Click the slider control below the sound library to adjust the volume of the sounds.

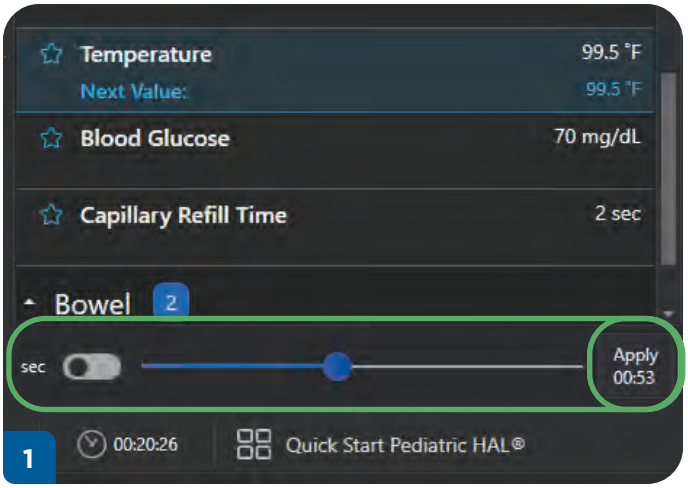


4.1.7. Applying Changes

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 facilitators 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.**



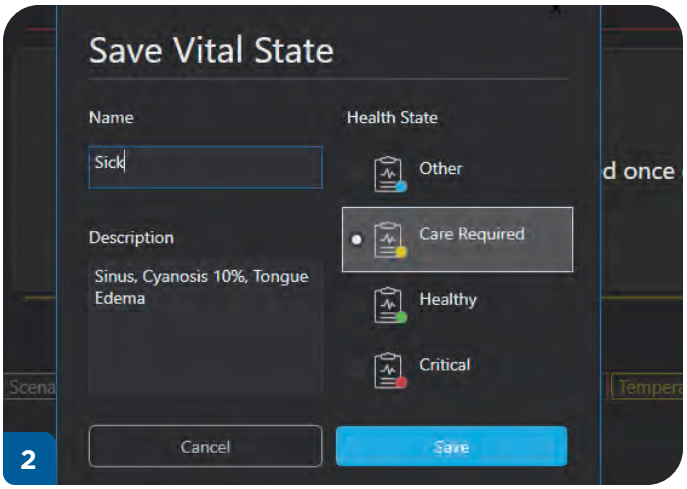
On the left-hand side of the slider is a box to check on seconds or minutes for when the conditions can be applied. The maximum amount of time for seconds is 2 minutes. The maximum amount of times for minutes is 59 minutes.

4.1.8. Creating Palette Items

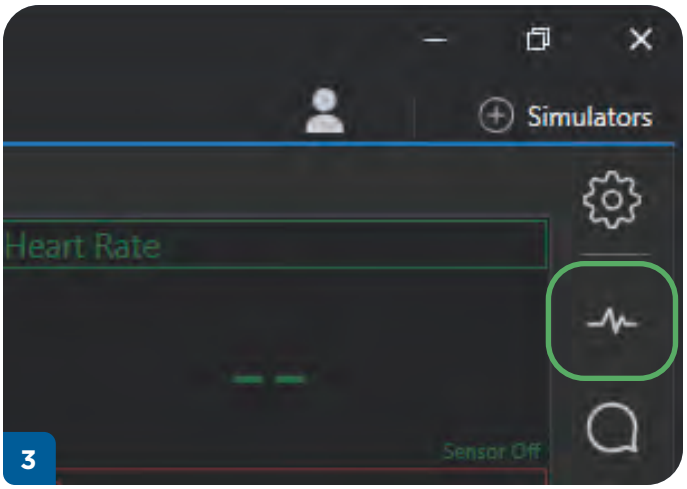
A palette item stores one or more vital sign settings into a single loadable object. Use a palette item to update a set of vital signs quickly. For example, one palette item can be created to update all the cardiac parameters to a healthy state.

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.

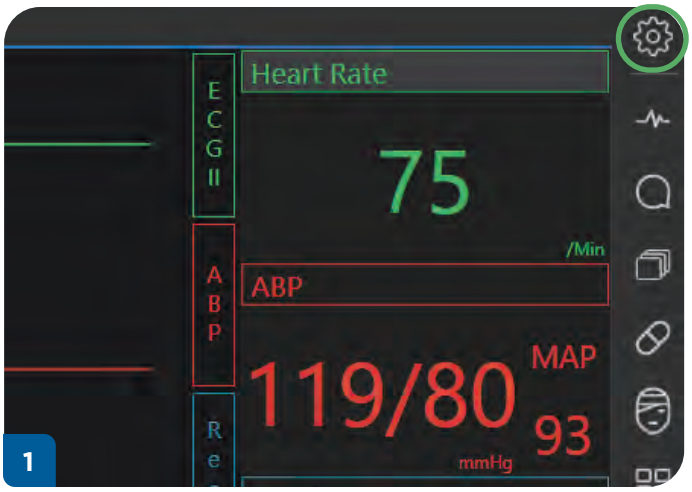


4.2 SCENARIOS

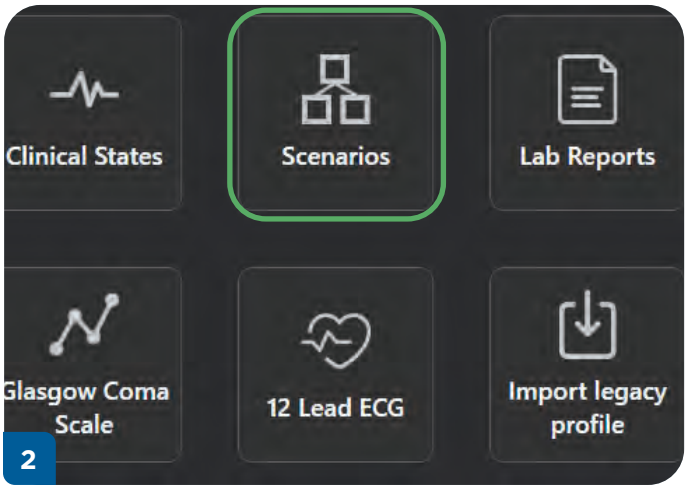
4.2.1. How to Create a Scenario

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:

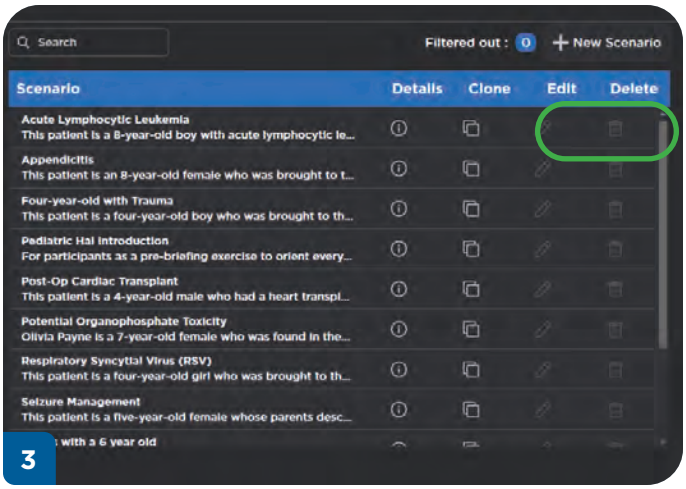
1. In UNI, click on the **Settings** icon in the upper right corner.



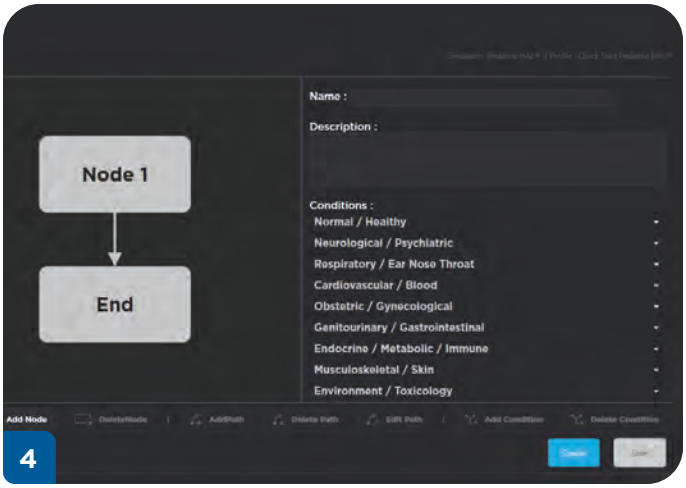
2. Under **Simulator Model**, click **Scenarios**.



3. Click **+ New Scenario**.

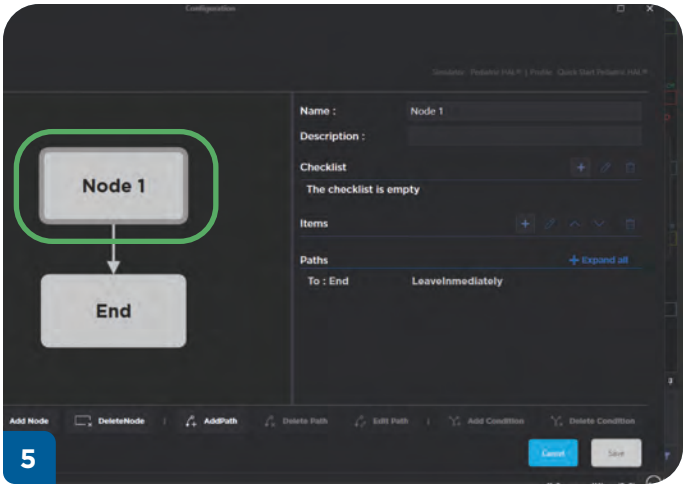


4. Give your scenario a **Name**, **Description**, and assign it a **Condition**.



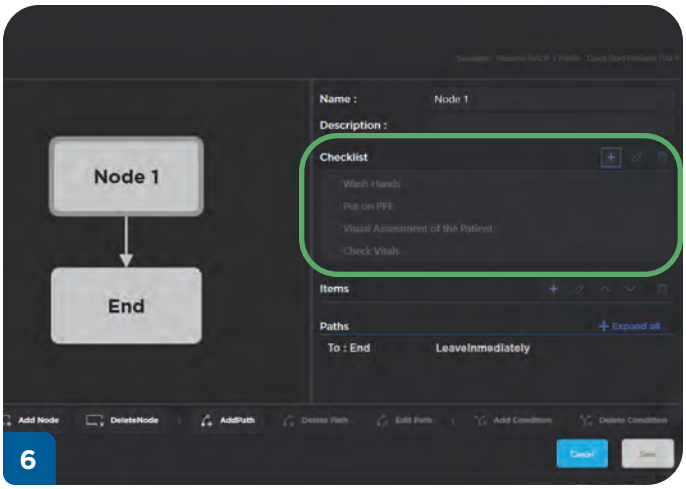
5. Click on **Node 1** to add information.

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



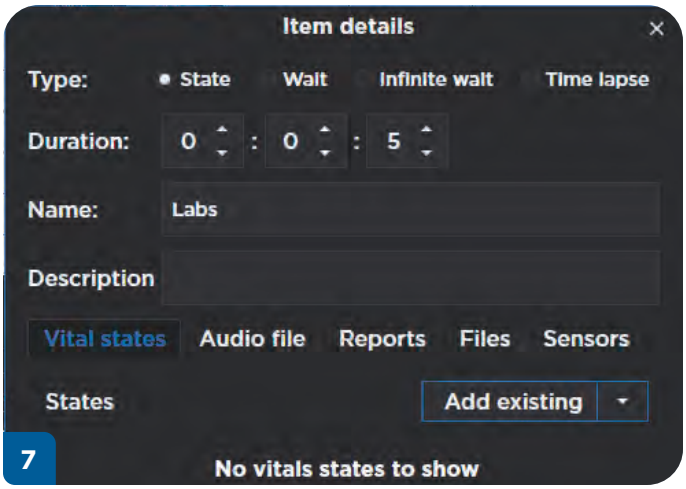
6. Click on the **Add Checklist +** icon to add a checklist to the **Node**.

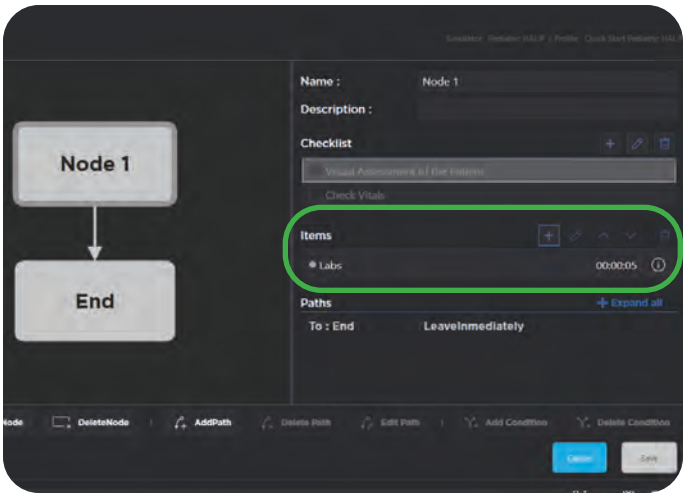
Checklists allow the user to create a list of actions or notes they would like to see participants do during the scenario. The checkboxes next to each entry allows the user to keep track of what the participants do or not.



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

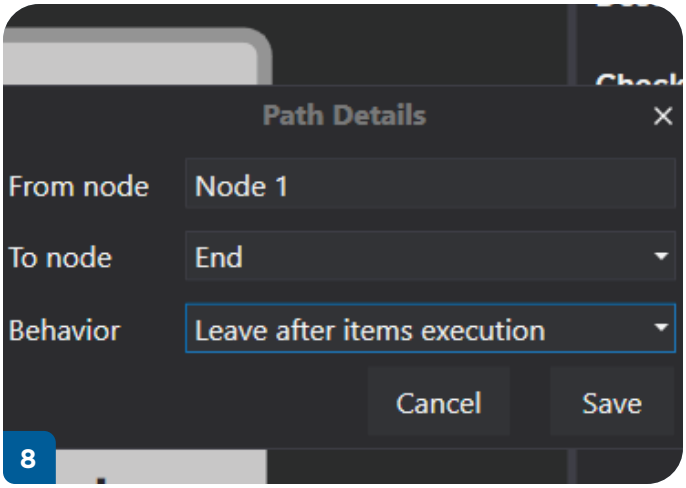
Items include **Visual States**, **Audio Files**, **Reports**, **Files**, and **Sensors**. All of these items can be created beforehand and then added to a scenario.

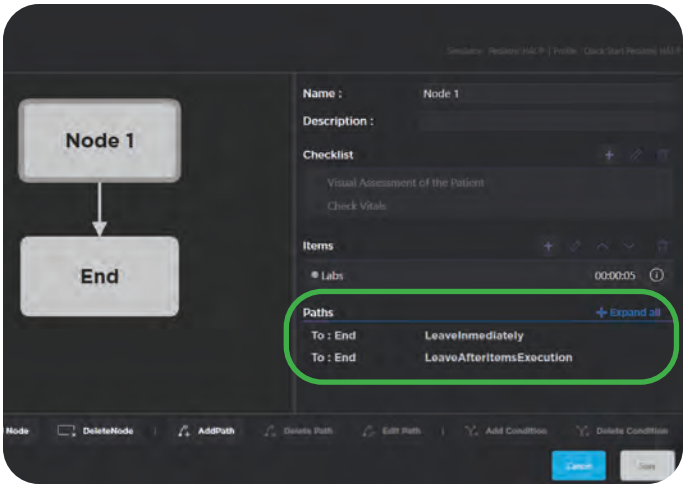




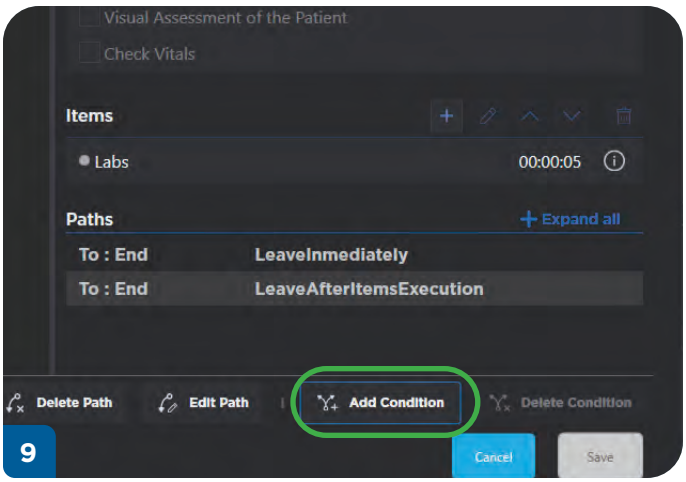
8. Click on the **Add Path +** icon to add a path to the **Node**.

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**.

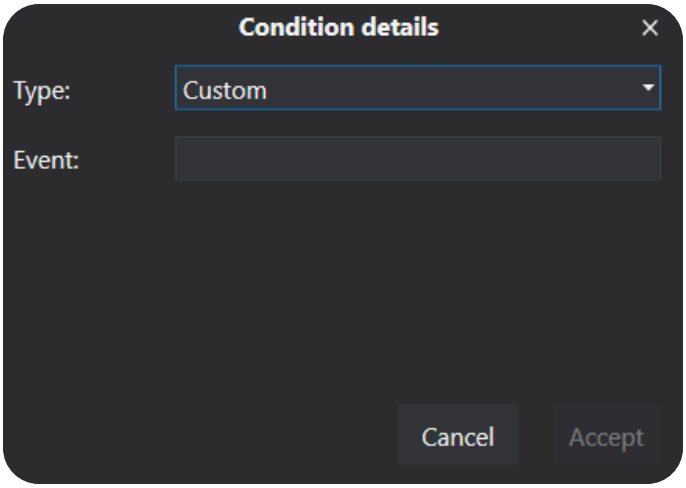




9. Click on a **Path** that has been added, then click the **Add Condition** icon to add a condition to the Node.



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

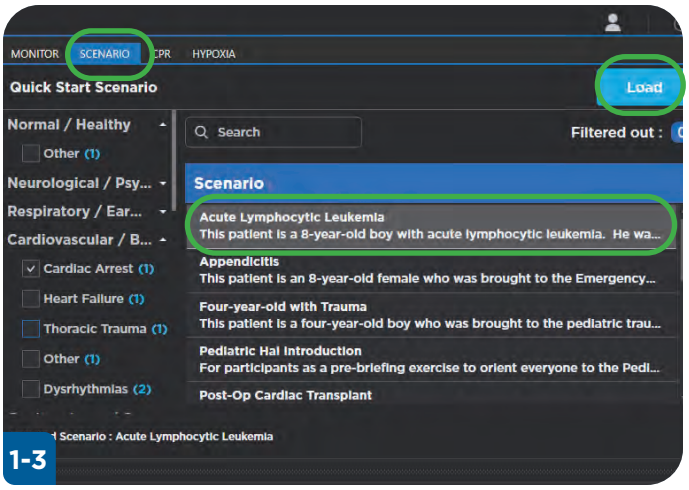
After creating a scenario, the next step is to load and play it!

To load and play your scenario:

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

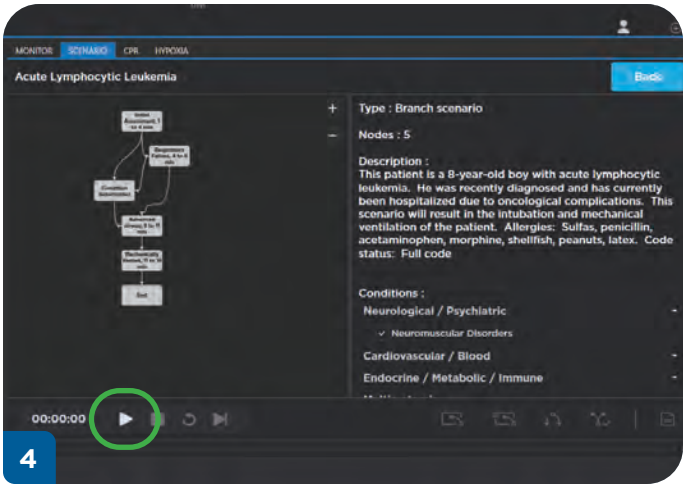
2. Select the desired scenario.

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. Super TORY® Simulated Learning Experiences®

Super TORY® includes a courseware package that provides you with a library of ready-to-use, evidence-based scenarios designed to help simulate lifelike clinical cases in preterm airway management, resuscitation, stabilization, transport, and intensive care.

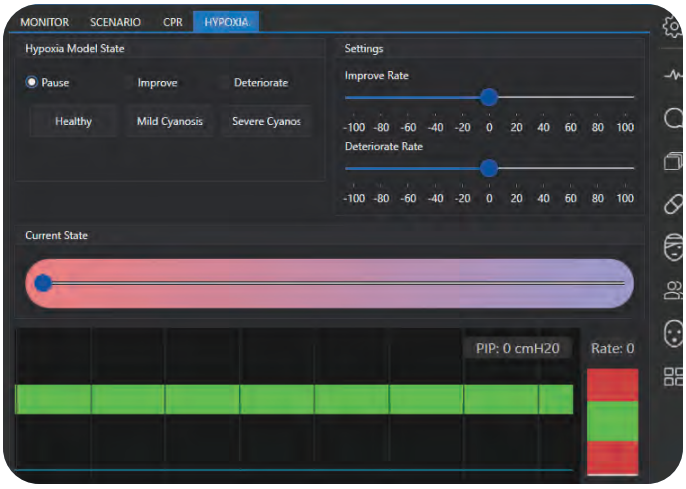
It can be beneficial for the facilitator/provider to take part in these simulated experiences as it allows for a safe, controlled, and reproducible environement for learning strategies to take place. Through the incorporation of clinical expertise and experiential knowledge put into each scenario, these SLE's provide a comprehensive strategy for planning and facilitating a clinical simulation.

Each SLE is mapped to the NCLEX-RN©, the BSN Essentials, and incorporates QSEN and IPEC competencies to help learners successfully transfer their knowledge and skills to future clinical situations.

- Acute Respiratory Distress Syndrome
- Bronchopulmonary Dysplasia With Pulmonary Hypertension
- Diaphragmatic Hernia
- Drug-Exposed Infant/Neonatal Abstinence Syndrome
- Early-Onset Sepsis
- Hyperbilirubinemia
- Late-Onset Sepsis
- Nuchal Cord
- Pneumonia
- Shoulder Dystocia

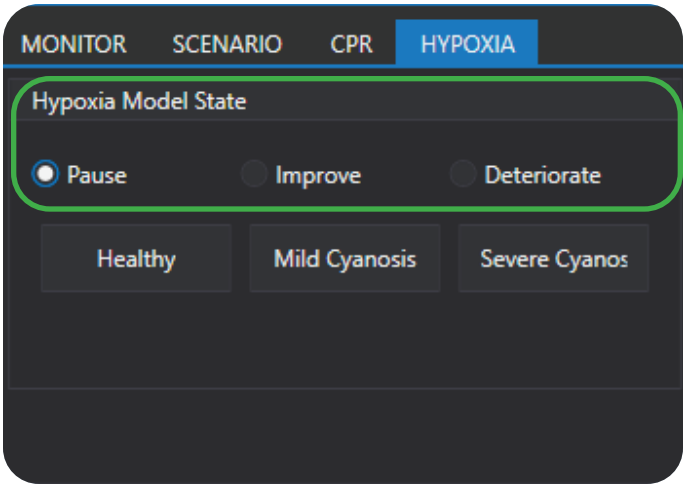
4.3 HYPOXIA MODELING

Use the Hypoxia tab to evaluate the effectiveness of provider intentions on an apneic patient. The model adjusts cardiac, oxygen saturation, and cyanosis dynamically in response to effective ventilations. The model also responds to the administration of virtual drugs.



4.3.1. Hypoxia Model State

The hypoxia model options improve or deteriorate the cardiac and respiratory vital signs gradually.

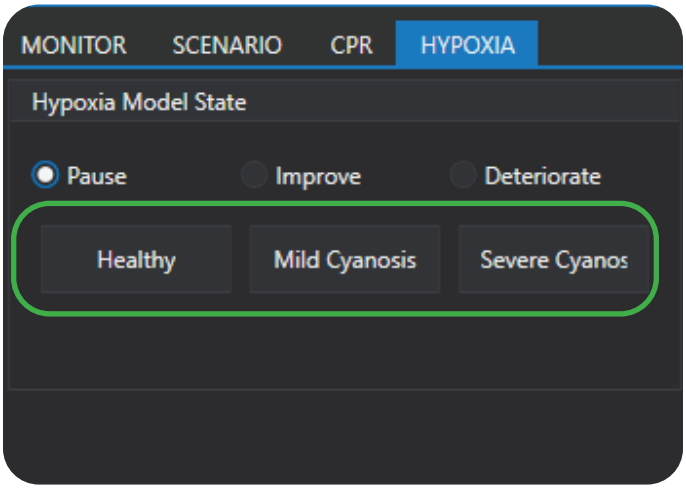


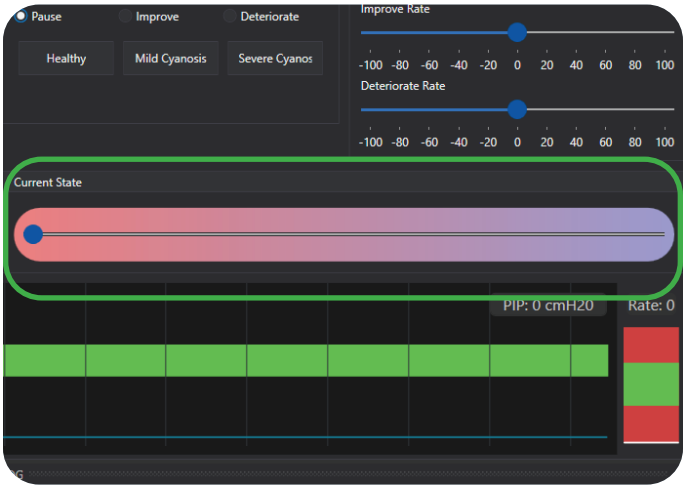
- **Pause**: Model will pause at the current state.
- **Improve**: Trend the vital signs to a healthy state.
- **Deteriorate**: Trend the vital signs to a severe cyanotic state. Ventilations are detected when the respiratory rate is at 0.

4.3.2. Cyanosis Levels

Select the cyanosis level to move to any of the following states immediately. You can see the changes on the pink-to-blue slider seen under **Current State** in the **Hypoxia** tab.

- **Healthy**: Super Tory is pink with adequate oxygenation.
- **Mild Cyanosis**: Super Tory is slightly blue and the vital signs are starting to deteriorate.
- **Severe Cyanosis**: Super Tory is blue, apneic, and vital signs are rapidly worsening.





4.3.3. Modeled Therapy

The modeled therapy menu provides additional Intervention options.

- **Improve Rate**: Adjust the slider to increase or decrease the improving cyanotic response to ventilations.
- **Deteriorate Rate**: Adjust the slider to increase or decrease the deteriorating cyanotic response to ventilations.

5. Troubleshooting

5.1 COMMUNICATION / POWER ISSUES

Issue	Probable Cause	Solution
Communication with the simulator cannot be established or signal strength is weak	Battery is discharged or damaged	Plug in the charger and if communication is established, then charge battery as per procedure explained in the user guide.
	Controlling computer is too far away from simulator	Minimize the ddistance between simulator and the tablet.
	Interference caused by physical obstructions	Maintain line of sight with the simulator and direct the RF module towards the simulator.
	Attempting to communicate with a different simulator	Configure UNI to connect to the simulator by serial number
	RF module is not detected by the controlling PC	Close the software and disconnect the RF module for at least five seconds, then plug it back in and restart the software. Connect the RF module in a different USB port.
	AC adapter is damaged	Verify the power adapter LED to ensure the adapter is working. Disconnecct the power adapter from the wall and the simulator and inspect the connector for damage or broken pins.

5.2 GENERAL TROUBLESHOOTING

Issue	Probable Cause	Solution
Commands are taking longer than usual to take effect or simulator is not reporting every action (Signal strength indicator is low)	Distance between computer and manikin is reaching its limit, or there are too many obstructions in between (walls, etc.)	Get simulator closer to computer or move away from obstructions.
	There's too much RF Interference either from another Gaumard tetherless simulator in the vicinity or an RF radiator.	Try changing RF communication channels.
Simulator does not run on internal battery power	Battery is old or not charged properly	When plugging in the charger, make sure the LED indicator goes through the complete charging squence described in the charger's label. Replace battery. Batteries would last between 2-3 years depending on use. Battery life is dramatically reduced if it hasn't been charged at least once every 3 months.
UNI has set the power mode to STAND-BY automatically	The battery on the manikin is depleted	Turn off the simulator and plug in the charger.
Intubation is falsely detected	Intubation sensor requires recalibration	Remove any adjuncts from the airway and complete the reset procedure outlined. Refer to digital UNI User Guide by clicking the **Settings** icon, and selecting **Instruction Manual** in the **General** section. .
Chest does not rise with artificial ventilation (e.g. BVM)	Air is escaping between the mask and the simulator's skin	Maintain a tight seal between the BVM mask and the simulator

6. Appendix

6.1 SPARE PARTS LIST

Part ID	Name	Description
11030040	Silicone Tape, Blue	Medical Tape for simulation use
13120231B	Umbilical Cord, R2	Set of two; Rev 2 standard after SN: W1904316
30020282B	Umbilical Cord, R1	Set of two; Before S/N: W1904315
30020284C 30020505C 30020510C	Pneumothorax Left Insert Assembly, (L) Pneumothorax Left Insert Assembly,(M) Pneumothorax Left Insert Assembly, (D)	Replacement part for pneumothorax
30020283C 30020504C 30020509C	Pneumothorax Right Insert Assembly, (L) Pneumothorax Right Insert Assembly, (M) Pneumothorax Right Insert Assembly, (D)	Replacement part for pneumothorax
30020286D 30020507D 30020512D	Lower Left Arm Assembly, Light Left Lower Arm Assembly, Medium Left Lower Arm Assembly, Dark	Replacement part for lower arm
30030134C 30030225C 30030226C	Scalp Vein Insert Assembly, Light Scalp Vein Insert Assembly, Medium Scalp Vein Insert Assembly, Dark	Replacement part for scalp vein
30030135E 30030227E 30030228E	Right I/O Bone Reservoir Assembly, R2, (L) Right I/O Bone Reservoir Assembly, R2, (M) Right I/O Bone Reservoir Assembly, R2, (D)	Replacement part for right IO
30030136E 30030229E 30030230E	Left I/O Bone Reservoir Assembly, R2, (L) Left I/O Bone Reservoir Assembly, R2, (M) Left I/O Bone Reservoir Assembly, R2, (D)	Replacement part for left IO for simulators after S/N: W1908367
30040078E	Battery Assembly	battery
30080137E 30080138E 30080139E	S2220 Accessories Box Assembly, (L) S2220 Accessories Box Assembly, (M) S2220 Accessories Box Assembly, Dark	Accessory box

6.2 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.

6.3 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.

6.4 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 SHALL 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 SHALL 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 shall 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.

6.5 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.

4.2Trademarks. 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

5.1Warranty 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.

5.2Limitation 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.

5.3Infringement 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.

6.1Binding 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.

6.2Notices. 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 shall 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.

6.3Applicable Law. The validity of this EULA and the rights, obligations and relations of the parties hereunder shall 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 shall 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.

6.5Severability. 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 shall be binding, unless agreed by the parties.

6.7Waiver 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.

6.8Relationship 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 behalf 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 shall be a direct or indirect beneficiary of or shall 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.

6.6 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

6.7 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)

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