Continuous CORE Temperature Monitoring

The preferred method for continuous systemic (core) temperature monitoring in CCTC is with an nasopharyngeal temperature probe. Core temperature monitoring can also be measured from a pulmonary artery catheter. Neither oral or axillary temperatures are measures of core temperature and are subject to erroneous readings.

The manufacturer of our temperature probes change from time-to-time based on supply chain issues. They are usually 9 – 12 F in diameter and identified as "universal". This means the same probe can be used for nasopharyngeal, esophageal or rectal temperature monitoring. Rectally inserted probes are not recommended as they can slip out or provide erroneous readings if the tip is inserted into stool within the rectum.

The preferred method for continuous core temperature monitoring in CCTC is nasopharyngeal.

The esophageal probe should be insert NASALLY unless nasal insertion is contraindicated. The goal for tip placement is the nasopharynx (not the esophagus).

Oral placement should be avoided unless there is no other option. Tubes inserted orally should be oral-esophageal with the tip in the distal esophagus. Oral placement is susceptible to following the ETT into the cuff or airway. Tubes in the oropharynx, airway or upper esophagus can be erroneously influenced by airway gas temperature. Accurate esophageal temperature monitoring requires tip placement into the distal esophagus. If the probe is inadvertently placed into the airway, cuff rupture or lung injury can occur.

Current Probe (2025)

We are currently using a DeRoyal 9 F universal probe. This is connected to the Philips monitor with the appropriate cable (both shown below). They are currently stored to the right of the counter in the Bay 1 Supply Room.

Image 1.0 DeRoyal 9F universal temperature probe.

Image 2.0 Philips-DeRoyal compatible temperature cable.

Insertion

Insert the probe nasally to a **depth of ~15 cm.** Erroneous readings may be obtained if deeper or more shallow. The DeRoyal catheter has distance markers as shown. The goal for the tip is nasopharyngeal placement. Temperature measured at this location is consistent with temperatures from the distal esophagus, but is easier to advance with less risk.

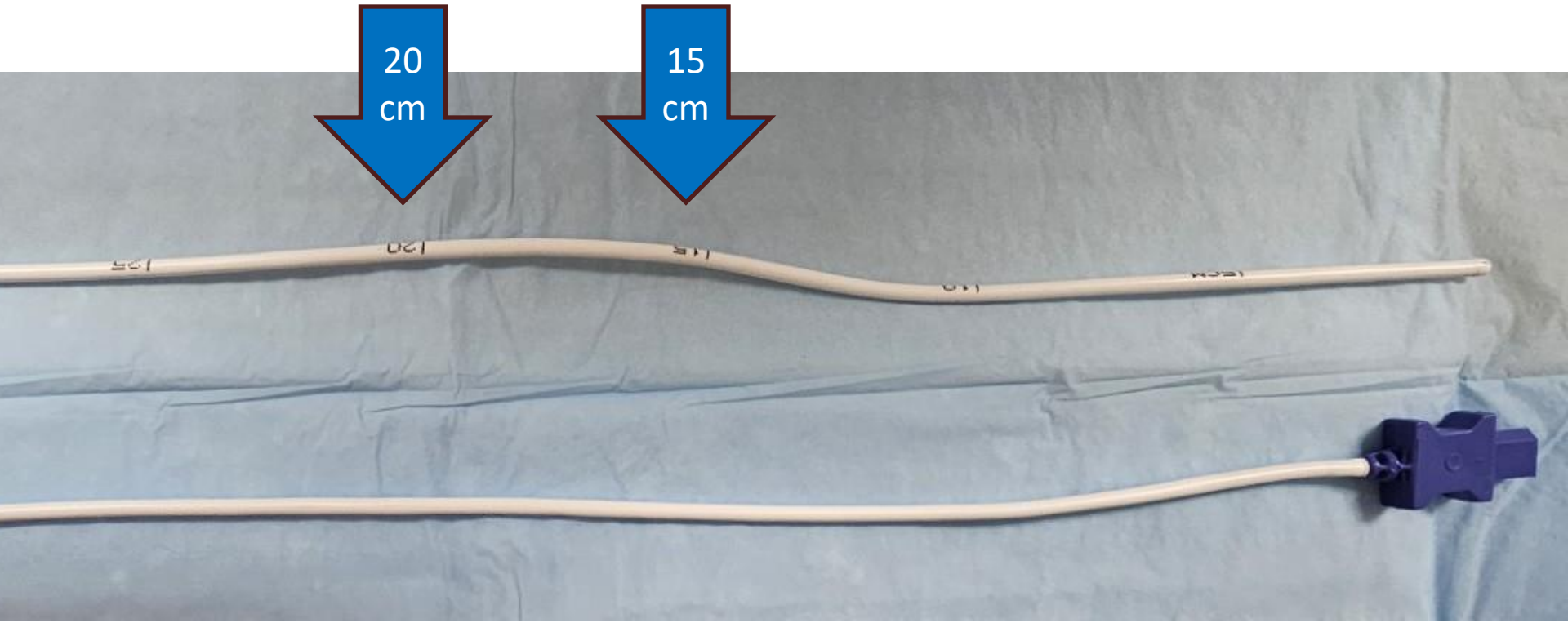
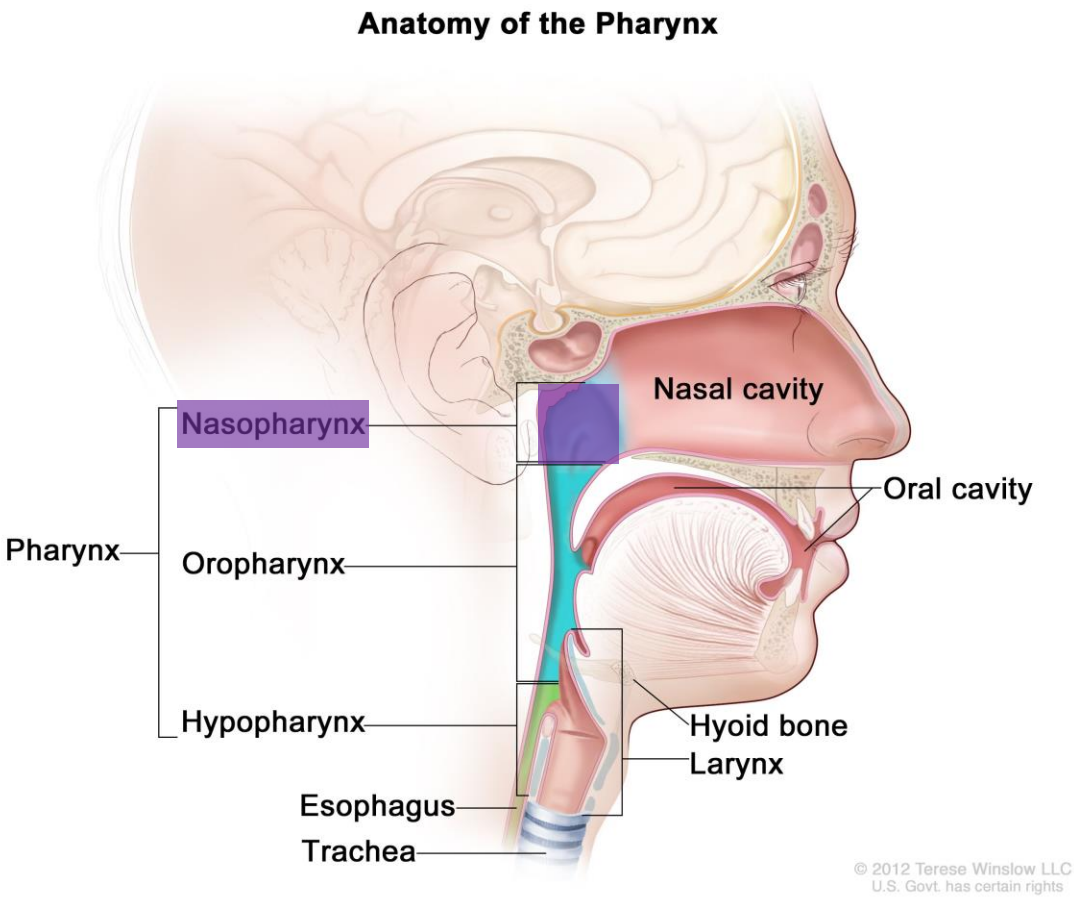


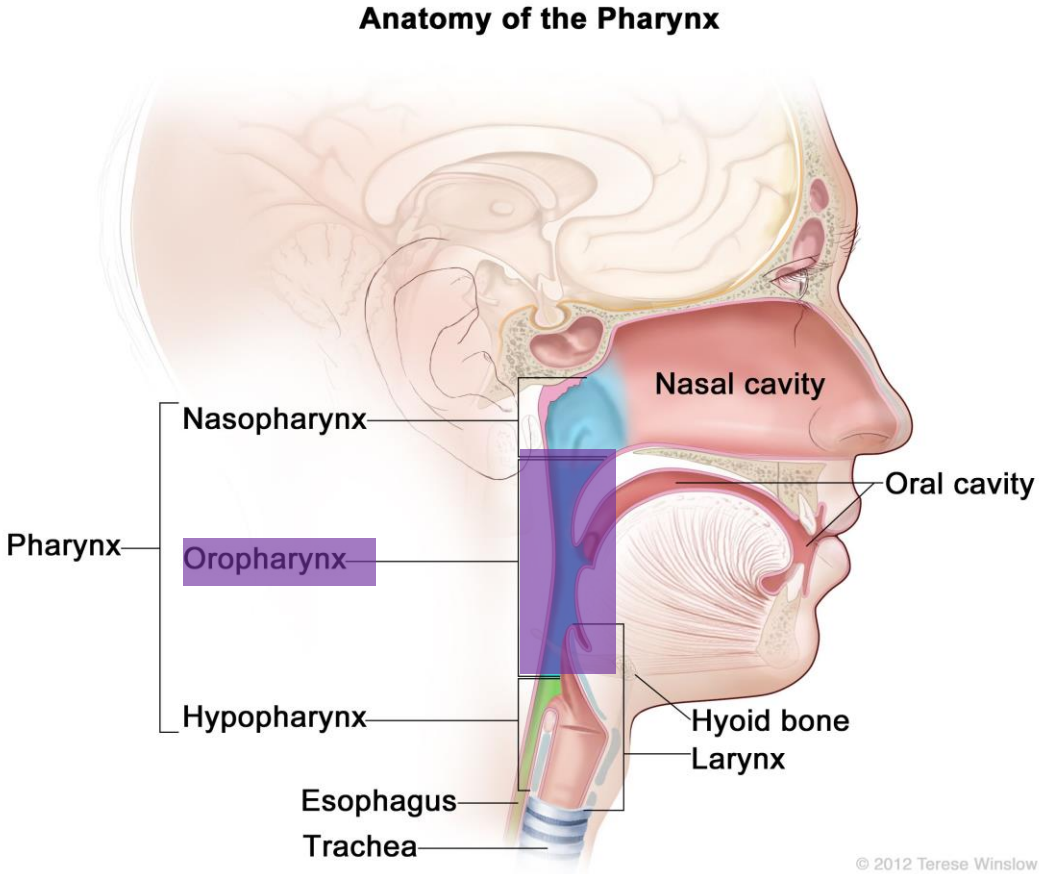
Image 3.0 DeRoyal 9F universal temperature probe.

Nasopharynx



Oral Insertion

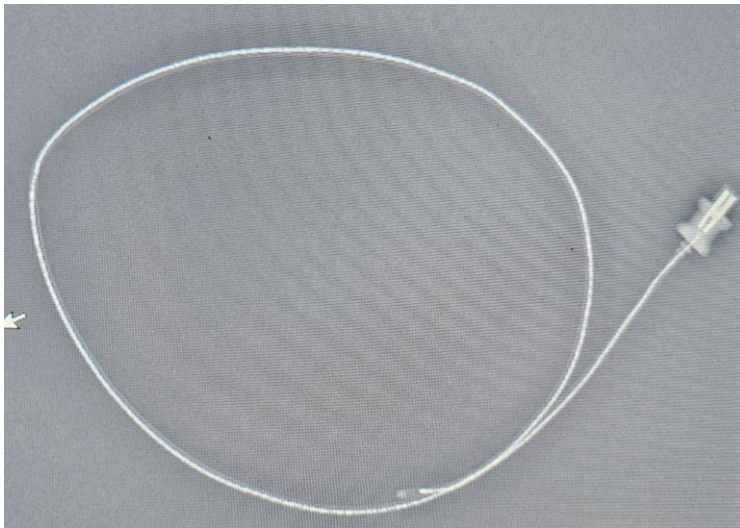
Patients may return from the OR with orally placed probes. These should be in the distal esophagus, below the carina, for accurate temperature monitoring (and to rule out airway placement). Check for tip location on the admission Chest Xray. If the probe is not in the distal esophagus, remove and reinsert into the nasopharynx.



Radiology and MRI

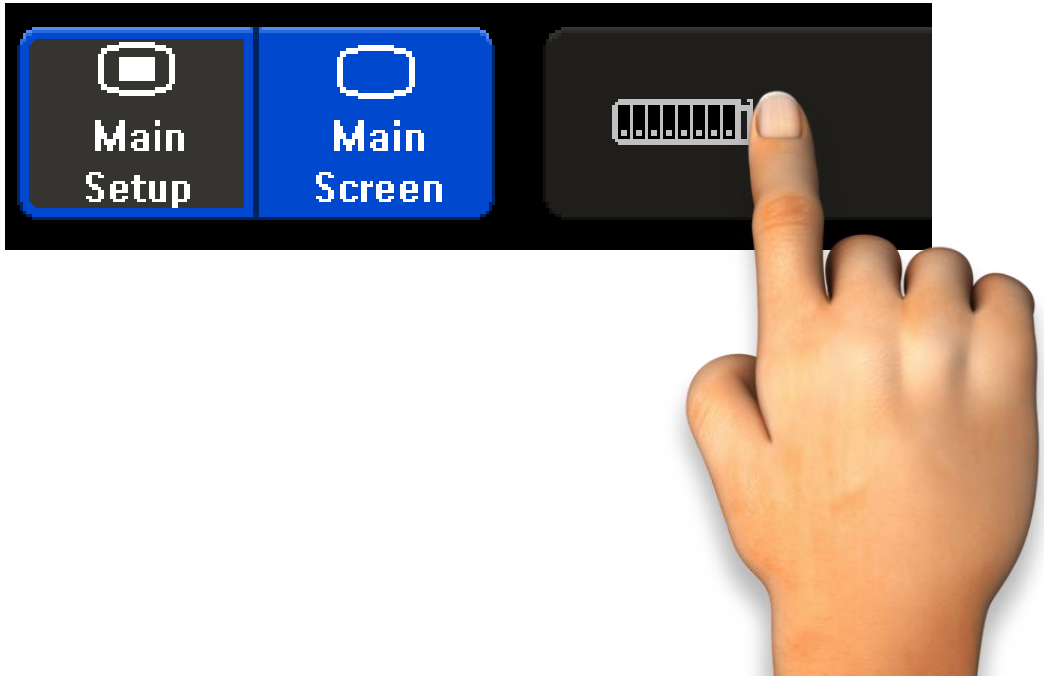
The probe is latex free and radiopaque. If esophageal placement is desired, confirm placement in the distal esophagus (below the carina)/rule out airway placement by Chest Xray. This can be done on post operative Chest Xray if orally inserted in the OR.

Given the ease of nasopharyngeal insertion, remove prior to MRI.



Philips Temperature Probe

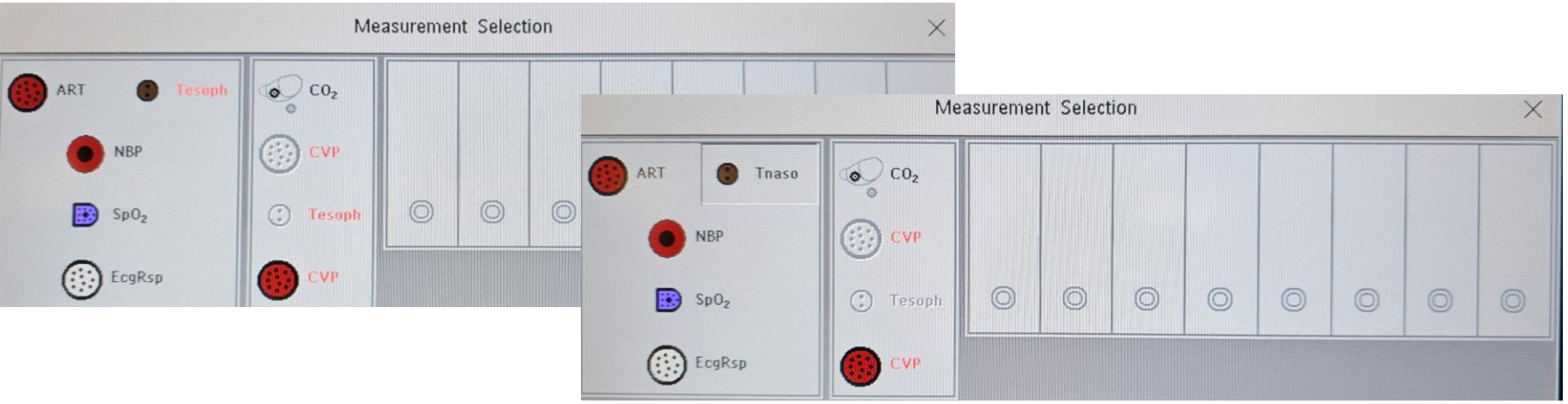
You can connect to any temperature port. If temperature doesn't display immediately, check the "xylophone" to ensure that the temperature module is enabled. The default color for temperature is green.



Confirm Correct Source

Be sure that the temperature source is labeled correctly on the Philips monitor. Confirm that it is being displayed correctly when data is uploaded to One Chart.

While Tesoph has typically been selected, Tnaso is an option that may better differentiate the source from a deep esophageal placement.



Vital Signs					
Temperature (oral)					
Temperature (axilla)					
Temperature (esophageal)		36.9	37.1		37
Heart Rate (Monitor)		H 112	H 112		H 103
Heart Rate (Oximeter)		H 112	H 112		H 103
Respiratory Rate		18	H 21		18

- DynaMed. Perioperative Temperature Management. EBSCO Information Services. Accessed July 31, 2025. https://www.dynamed.com/management/perioperative-temperature-management
- Lim H, Lee JH, Son KK, Han YJ, Ko S. A method for optimal depth of the nasopharyngeal temperature probe: the philtrum to tragus distance. Korean J Anesthesiol. 2014 Mar;66(3):195-8. doi: 10.4097/kjae.2014.66.3.195. Epub 2014 Mar 28. PMID: 24729840; PMCID: PMC3983414.
- Wang M, Singh A, Qureshi H, Leone A, Mascha EJ, Sessler DI. Optimal Depth for Nasopharyngeal Temperature Probe Positioning. Anesth Analg. 2016 May;122(5):1434-8. doi: 10.1213/ANE.0000000000001213. PMID: 26974019.