

## Introduction

- ❑ Pulse oximetry remains a standard of care for intraoperative monitoring.
- ❑ The accuracy of pulse oximetry can be impacted by both environmental or patient-related factors.<sup>1,2</sup> Given the need for continuous assessment of oxygenation in critically ill patients, alternative sites for monitoring may be needed.

**Objective:** This study assesses the **feasibility of obtaining pulse oximetry measurements from the oropharynx**, using a pulse oximeter probe attached to a standard oral airway.

## Methods

- ❑ Oximetry values from the oropharynx were obtained by cutting off the adhesive portion of a finger pulse oximeter and attaching it to an oral airway with tape (**see below**).
- ❑ Following induction of anesthesia, the oropharyngeal oximeter was placed into the oropharynx. The pulse oximeter was taped such that the sensors contacted the roof of the mouth (hard palate).
- ❑ Oxygen saturations from the extremity oximeter and oropharyngeal oximeter were recorded every 2 minutes for 30 minutes (15 pairs of values).



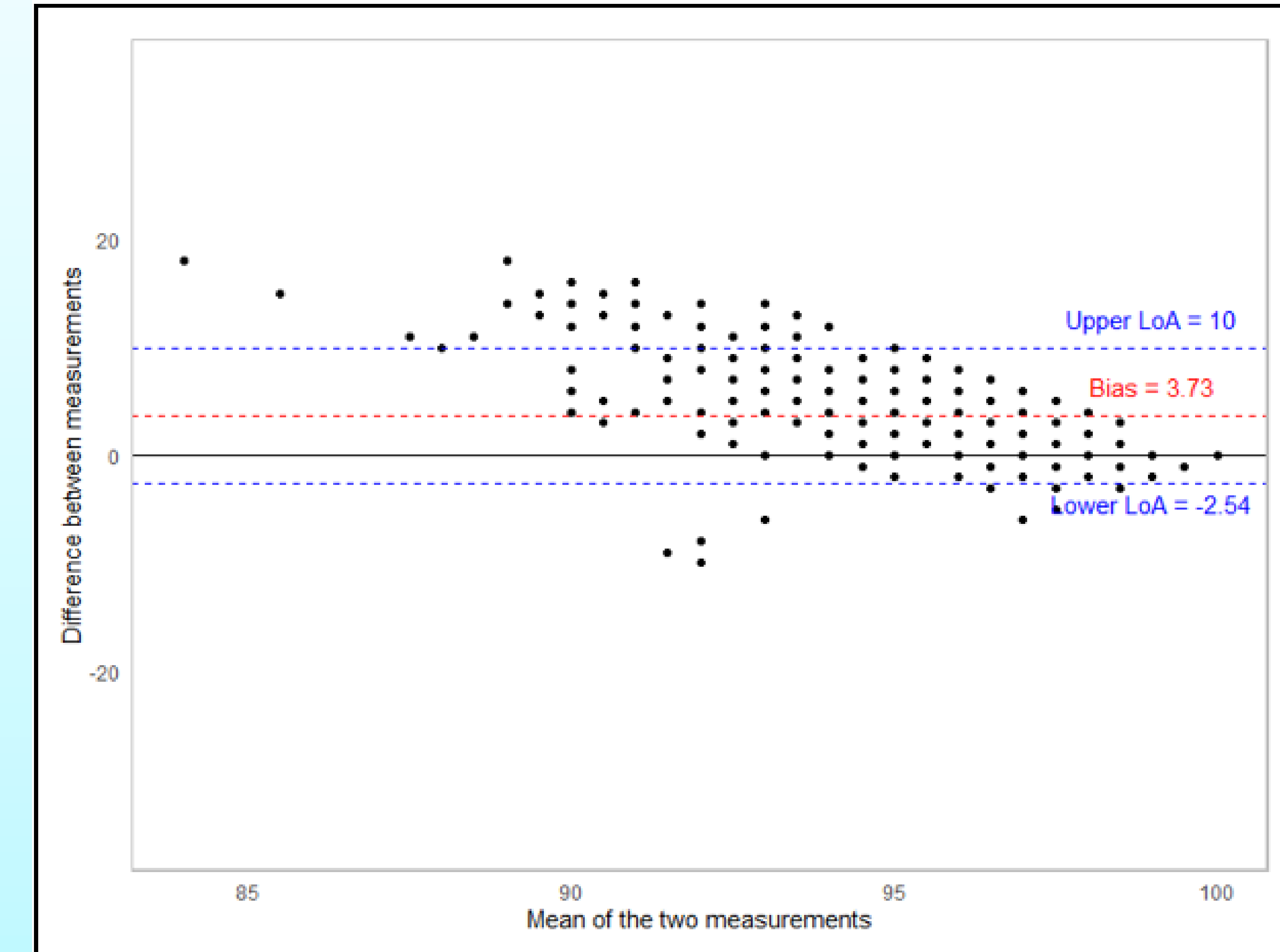
**“The oropharynx may potentially serve as an alternative site for oximetry monitoring when extremity monitoring is not feasible”**

## Results

- ❑ The study cohort included 50 patients with a median age of 12 years.
- ❑ **The mean difference (bias) between the oropharyngeal and extremity saturation was 3.7%.**
- ❑ The 95% limit of agreement (LoA) ranged from -2.5% to 10.0% (**Figure to the right**).
- ❑ Of 683 total pairs of saturations, 243 pairs (35.6%) of the measurements differed by 0-2% and 253 pairs differed by 3-5% (37.0%). The difference was greater than 5% in 187 pairs (27.4%)

## Discussion

- ❑ The oropharynx may potentially serve as an alternative site for oximetry monitoring when extremity monitoring is not feasible.
- ❑ Having alternative methods and sites for pulse oximetry during intraoperative care may be essential for occasions when finger oximetry cannot be obtained.



Bland-Altman plot of extremity versus oropharyngeal oximetry agreement

## References

- 1.Salyer JW. Respir Care. 2003;48:386-398.
- 2.Jubran A. Crit Care. 2015;19:272.