

# Clinically Significant Improvement in Nausea as Measured on a Visual Analog Scale

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## Background

Visual Analog Scales (VAS) have been used in the medical literature to measure the severity of many different symptoms, such as pain, dyspnea, and nausea. In order to fully interpret the clinical relevance of such studies, it is important to ascertain the relationship between a change in VAS and a clinically significant change in the symptom. Other investigators have determined the minimum change in VAS that is associated with a clinically perceptible difference in pain and dyspnea. However, no previous study has determined this threshold for nausea.

## Objective

The objective of this study was to determine the minimum clinically significant difference in nausea as measured on a visual analog scale.

Figure 1. Example of the data collection form.

## Methods

**Design:** Prospective, observational

**Setting:** Urban, teaching hospital, with an emergency medicine residency program

**Patients:** Adults (>18 years), presenting to the ED with a chief complaint of nausea

**Protocol:** After informed consent, patients reported the severity of their nausea on a 100mm VAS. During their ED stay, patients were asked several more times to rate their nausea on a new VAS, without reference to prior VAS scores. They were also asked to qualitatively describe their nausea as: "a lot less," "a little less," "unchanged," "a little more," or "a lot more" compared to their previous measurement (see Figure 1). The minimum clinically significant improvement in nausea was defined as the mean difference in VAS in those patients reporting "a little less" nausea.

**Statistics:** Mean changes (and 95% confidence intervals) in VAS were calculated for each of the five qualitative descriptors, and were compared using t-tests.

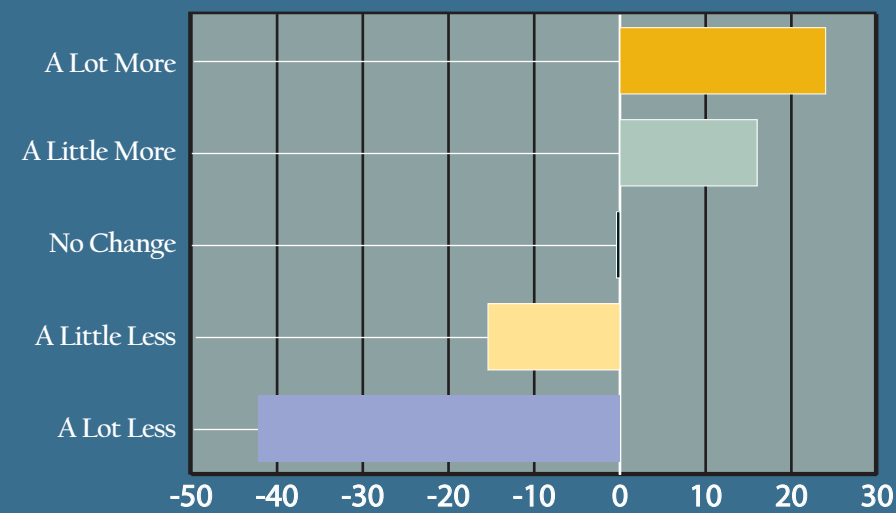
## Results

There were 133 VAS measurements collected from 50 patients who met all inclusion criteria.

Fifty-eight percent were women and the mean age was 41 years.

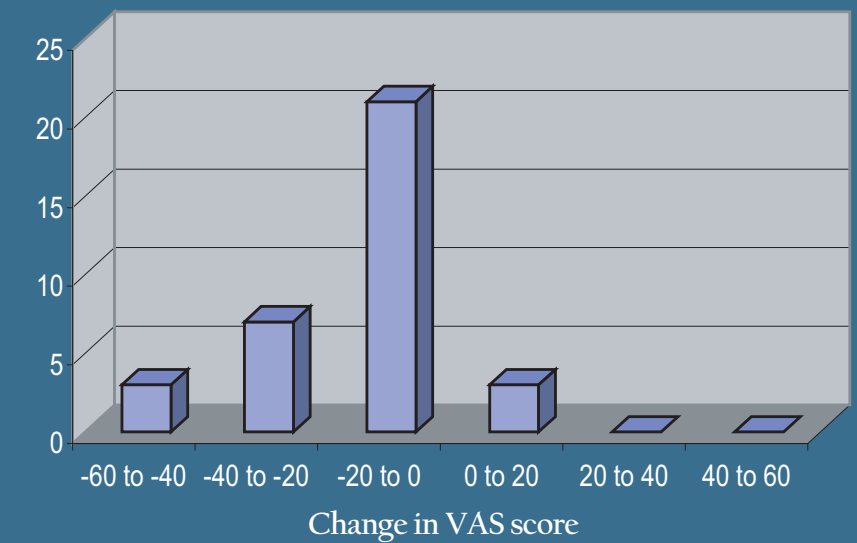
The mean initial VAS for nausea was 64mm.

Figure 2. Mean Change in VAS for each qualitative descriptor



	A Lot Less	A Little Less	No Change	A Little More	A Lot More
mean change	-42.2	-15.4	-0.4	16	24
N	16	34	28	2	3
95% CI		-19.8 to -11.0	-5.3 to +4.5		

Figure 3. Patients who reported "a little less" nausea (N=34)



## Conclusion

We determined that the minimum clinically significant improvement in nausea is 15 mm on a VAS. This finding is similar to previous studies of pain measurements on a VAS. Such information is helpful in the interpretation of the clinical significance of differences in nausea scores.