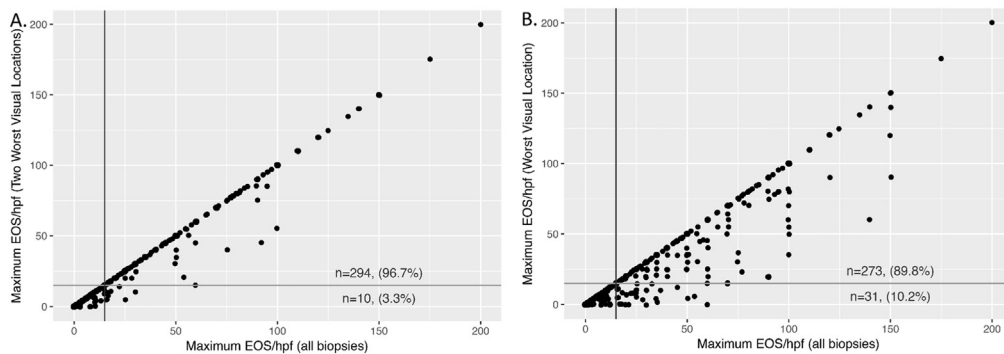


Supplementary Figure 1. Comparison of peak eosinophilia from individual vs all sites and 2-site combinations vs all sites. N = 304 endoscopies with active EoE. (A) Distal vs all, (B) mid vs all, (C) proximal vs all, (D) distal and mid vs all, (E) distal and proximal vs all, (F) mid and proximal vs all. Three-site combination shown on x-axis; individual and 2-site combinations shown on y-axis. Horizontal line at y = 15 eos/hpf to denote which endoscopies would be missed without 3-site combination.



Supplementary Figure 2. Comparison of peak eosinophilia from 3-site combination vs visually abnormal site(s). N = 304 endoscopies with active EoE. (A) Two worst visual vs all, (B) worst visual vs all. Three-site combination shown on x-axis; peak eosinophils from individual and 2 worst visual locations shown on y-axis. Horizontal line at y = 15 eos/hpf to denote which endoscopies would be missed without 3-site combination.

Supplementary Table 1. Endoscopic Findings, Medications, and Medical History of 217 EoE Patients

Endoscopic findings, n (%)	
Edema	117 (54)
Exudate	75 (35)
Furrows	134 (62)
Rings	61 (28)
Stricture	2 (1)
Medications, n (%)	
Inhaled steroid	41 (18.9)
Intranasal steroid	32 (14.7)
Proton pump inhibitor	174 (80.2)
Swallowed "topical" steroids	53 (24.4)
Medical history, n (%)	
Asthma	84 (38.7)
Celiac disease	4 (1.9)
Conjunctivitis	19 (8.9)
Drug allergy	41 (18.9)
Eczema	90 (41.5)
Food allergy	91 (42)
Gastroesophageal reflux disease	41 (18.9)
Inflammatory bowel disease	1 (0.5)
Rhinitis	126 (58.1)

Supplementary Table 2. Median Eos/hpf, Sensitivity, Negative Predictive Value, and Accuracy for Identification of Active EoE Stratified by Swallowed Steroid Use

Esophagus site	Eos/hpf, median [interquartile range]	Sensitivity (%)	Negative predictive value (%)	Accuracy (%)
On swallowed steroid (n = 28)				
Distal/mid/proximal	34 30–90	100	100	100
Distal/mid	34 25–50	96.4	95.2	97.9
Distal/proximal	32 23–50	96.4	95.2	97.9
Mid/proximal	10 5–30	46.4	67.0	85.0
Distal	32 23–50	92.9	91.3	95.9
Mid	10 5–30	35.7	67.3	72.3
Proximal	4 1–15	57.6	66.1	70.2
Not on swallowed steroid (n = 139)				
Distal/mid/proximal	55 25–50	100	100	100
Distal/mid	50 30–85	97.1	89.7	97.7
Distal/proximal	45 25–80	99.3	97.0	99.4
Mid/proximal	45 19–70	78.4	69.4	75.8
Distal	40 25–80	91.3	78.2	93.4
Mid	40 11–60	70.5	63.7	80.6
Proximal	20 5–30	28.6	60.4	74.2