**Online Supplement for:**

**Variability of Spirometry in Chronic Obstructive Pulmonary Disease: Results from Two Clinical Trials**

Laura B. Herpel, Richard E. Kanner, Shing M. Lee, Henry E. Fessler, Frank C. Sciurba, John E. Connett, Robert A. Wise, for the Lung Health Study Research Group and the National Emphysema Treatment Trial Research Group.

**Table E1. Participant Characteristics (Standard Error and 95% Confidence Intervals)**

| Variable | NETT (n = 1215) | LHS (n = 5886) | Total (n = 7101) |
|---|---|---|---|
| Age | 66.4 ± 0.18 (66.30, 66.99) | 48.5 ± 0.09 (48.29, 48.64) | 51.6 ± 0.11 (51.36, 51.80) |
| Race % Caucasion | 94.9 | 95.8 | 95.6 |
| Gender % Male | 61.4 | 62.9 | 62.6 |
| $FEV_1$ (L) | 0.68 ± 0.006 (0.669, 0.693) | 2.64 ± 0.008 (2.620, 2.650) | 2.30 ± 0.011 (2.279, 2.322) |
| FVC (L) | 2.14 ± 0.021 (2.098, 2.179) | 4.20 ± 0.012 (4.176, 4.224) | 3.84 ± 0.014 (3.820, 3.875) |
| $FEV_1$ % Predicted | 23.7 ± 0.19 (23.28, 24.02) | 75.1 ± 0.12 (74.92, 75.37) | 66.3 ± 0.25 (65.84, 66.82) |
| FVC % Predicted | 57.1 ± 0.42 (56.37, 58.03) | 96.4 ± 0.14 (96.12, 96.67) | 89.7 ± 0.22 (89.26, 90.13) |
| Interval between tests (days) | 85.7 ± 0.62 (84.49, 86.93) | 24.9 ± 0.22 (24.43, 25.30) | 35.3 ± 0.35 (34.60, 35.95) |
| Difference $FEV_1$ (L) | 0.007 ± 0.003 (0.000, 0.014) | -0.011 ± 0.002 (-0.015, -0.007) | -0.008 ± 0.002 (-0.011, -0.004) |
| Absolute Difference $FEV_1$ (L) | 0.089 ± 0.002 (0.085, 0.094) | 0.110 ± 0.001 (0.107, 0.112) | 0.106 ± 0.001 (0.104, 0.109) |
| % Difference $FEV_1$ | 2.54 ± 0.498 (1.560, 3.514) | - 0.35 ± 0.075 (-0.502, -0.206) | 0.14 ± 0.106 (-0.068, 0.349) |
| Absolute % Difference $FEV_1$ | 13.33 ± 0.327 (12.691, 13.974) | 4.29 ± 0.051 (4.189, 4.388) | 5.84 ± 0.081 (5.678, 5.994) |
| Difference FVC (L) | 0.072 ± 0.012 (0.048, 0.095) | -0.023 ± 0.003 (-0.028, -0.018) | -0.007 ± 0.003 (-0.013, -0.001) |
| Absolute Difference FVC (L) | 0.317 ± 0.008 (0.301, 0.332) | 0.150 ± 0.002 (0.146, 0.153) | 0.178 ± 0.002 (0.174, 0.182) |
| % Difference FVC | 5.48 ± 0.601 (4.2986, 6.655) | - 0.47 ± 0.064 (-0.596, -0.345) | 0.55 ± 0.119 (0.314, 0.779) |
| Absolute % Difference FVC | 15.81 ± 0.424 (14.983, 16.646) | 3.65 ± 0.043 (3.569, 3.738) | 5.73 ± 0.097 (5.543, 5.925) |

Results are shown as Mean ± SE. The upper and lower limits of 95% Confidence Intervals for each mean are presented in parentheses. LHS = Lung Health Study. NETT = National Emphysema Treatment Trial. Data was not available on one participant from the LHS (n=5886).
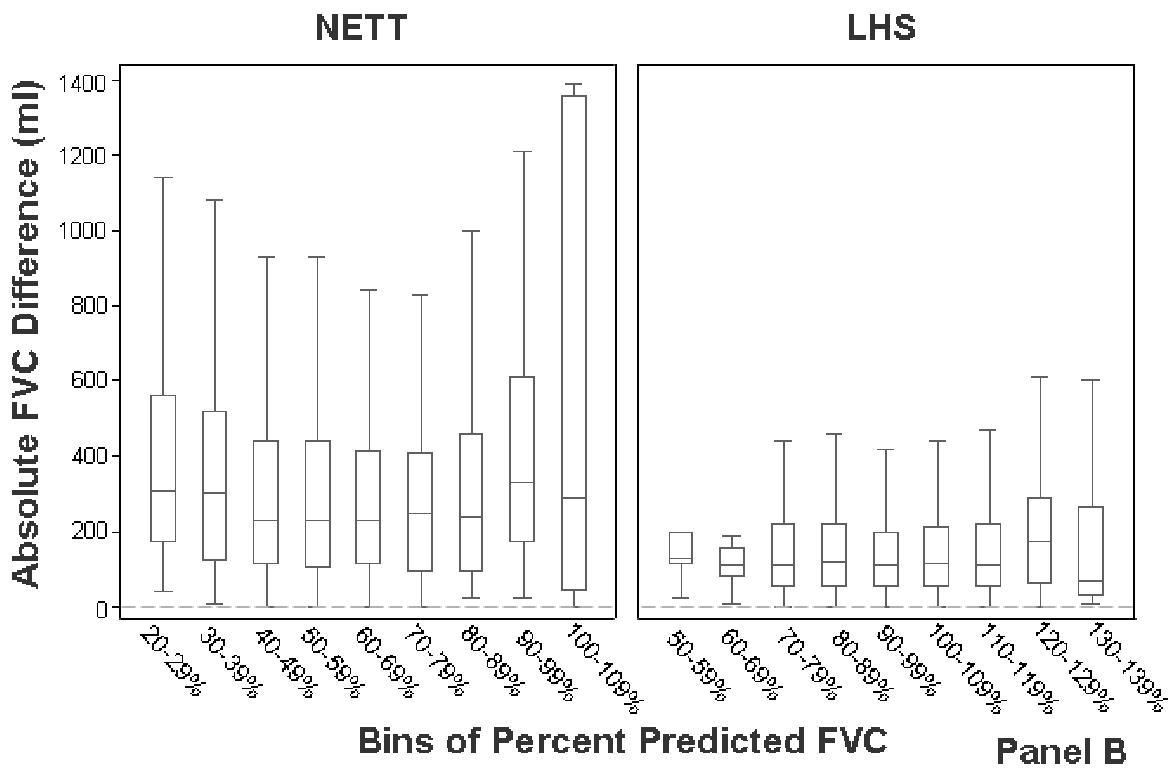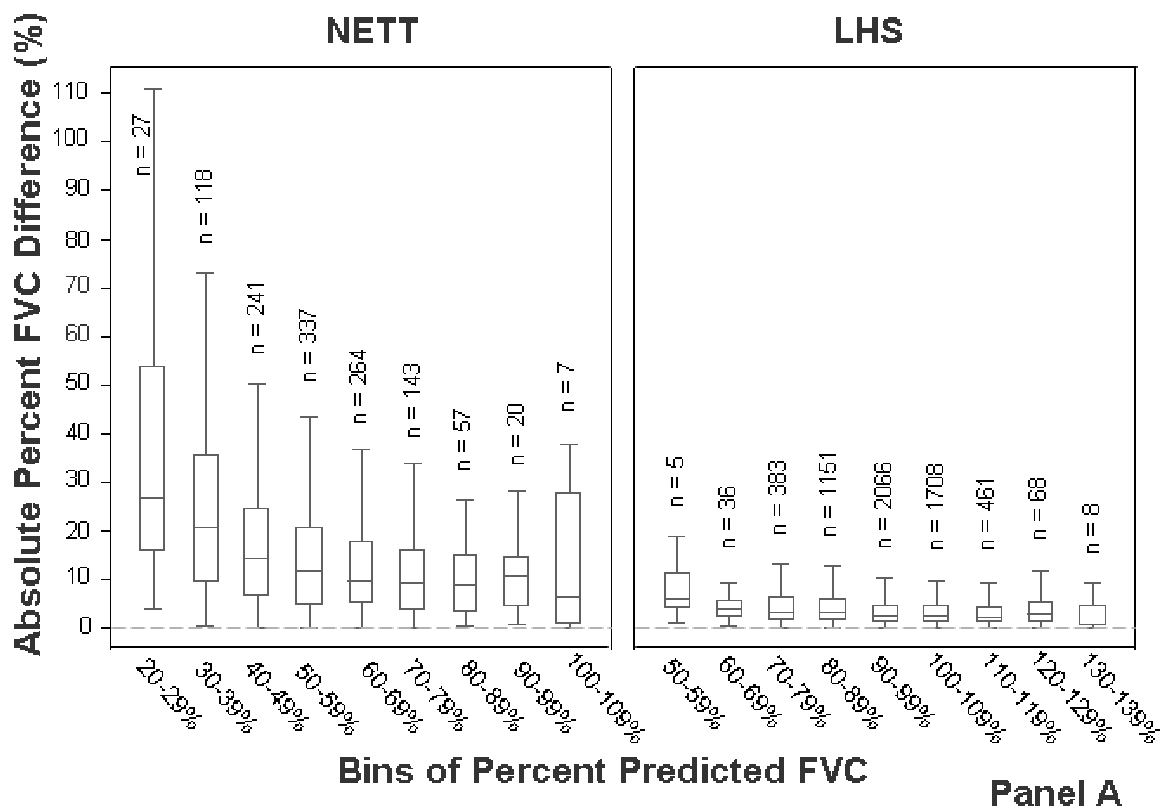
**NETT**

**LHS**

Absolute Percent FVC Difference (%)

n = 27
n = 118
n = 241
n = 337
n = 264
n = 143
n = 57
n = 20
n = 7

n = 5
n = 36
n = 383
n = 1151
n = 2066
n = 1708
n = 461
n = 68
n = 8

20-29%
30-39%
40-49%
50-59%
60-69%
70-79%
80-89%
90-99%
100-109%

50-59%
60-69%
70-79%
80-89%
90-99%
100-109%
110-119%
120-129%
130-139%

**Bins of Percent Predicted FVC**

**Panel A**

**NETT**

**LHS**

Absolute FVC Difference (ml)

20-29%
30-39%
40-49%
50-59%
60-69%
70-79%
80-89%
90-99%
100-109%

50-59%
60-69%
70-79%
80-89%
90-99%
100-109%
110-119%
120-129%
130-139%

**Bins of Percent Predicted FVC**

**Panel B**

**Figure E1.** Box and whisker plots for the percent difference (panel A - top) and absolute difference (panel B - bottom) for repeat FVC measurements as a function of FVC percent predicted. Boxes represent the interquartile range (IQR) bounded by the 25th and 75th percentiles with the bar as the median. The whiskers represent the distribution of values between the upper fence (75th percentile + 1.5 * IQR) and the lower fence (25th percentile – 1.5 * IQR). Outliers are not displayed in the graph. Each bin corresponds to a decile range of percent predicted FVC. There are identical numbers of participants (n) in corresponding bins of percent predicted FVC for Panel A and Panel B. The bin for the range of 10% to 19% predicted FVC for NETT is not displayed as n = 1.
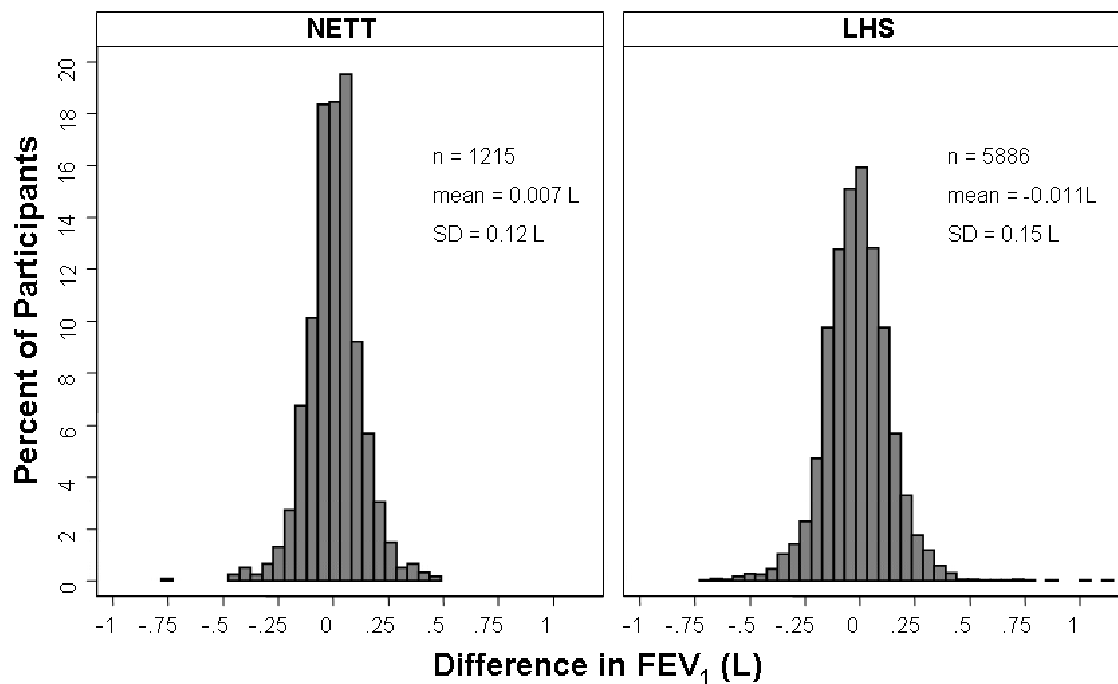
**Figure E2.** Distributional plots for $FEV_1$ difference in the two study populations. NETT = National Emphysema Treatment Trial. LHS = Lung Health Study. SD = standard deviation, and n = number of participants in the study.
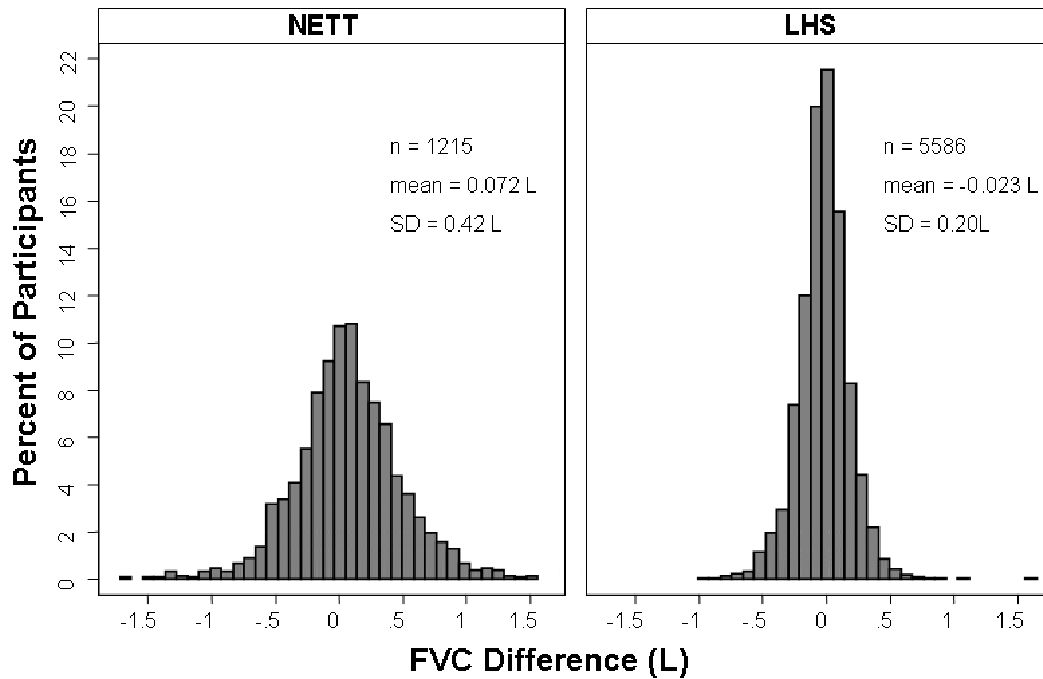
**Figure E3.** Distributional plots for FVC differnce in the two study populations. NETT = National Emphysema Treatment Trial. LHS = Lung Health Study. SD = standard deviation, and n = number of participants in the study.