

A study compared the level of lead in the blood of two groups of children- those who were exposed to lead dust from a parent's workplace and those who were not exposed in this way.

The 33 children of workers at a battery factory were the "exposed" group. For each "exposed" child, a "matching" child was found of the same age and living in the same area, but whose parents did not work around lead. These 33 children were the "control" group. Each child had his or her blood lead level measured (in micrograms per deciliter)

a. On the same scale, produce box plots of the lead levels for each group of children.

Then, describe the shape of each distribution:

*Exposed* – Skewed Right

*Control* – Approximately normal

b. Find and interpret the median and the interquartile range for each distribution.

Exposed: Median = 34

Interpretation – 50% of the data is below 34 micrograms, while 50% of the data is above 34 micrograms

IQR =  $40 - 20.5 = 19.5$

Interpretation – The exposed data is more spread out than the control because it was a bigger IQR

Control: Median = 16

Interpretation – 50% of the data is below 16 micrograms, while 50% of the data is above 16 micrograms

IQR =  $19 - 12.5 = 6.5$

Interpretation – The exposed data is less spread out than the exposed because it was a lower IQR