

If we now go back to the results in Table 1 and see what number of results fit inside these new ranges we find the following. We have 19 results to consider now that the outlier has been excluded, and we find 13 inside and 6 outside the +/- 1 SD range of 121.5 to 124.5, or 68%; and 19 inside the +/- 2 SD range, meaning 100% are inside this range.

To summarise, the two ranges and percentages are shown below.

**Table 2: Comparative data from “All result” and “Trimmed results”.**

<b>Feature</b>	<b>All results</b>	<b>Trimmed results</b>
Number	20	19
Mean	123.3	123.0
+/- 1 SD range	121.3 - 125.3	121.5 – 124.5
% inside +/- 1 SD range	75	68
+/- 2 SD range	119.3 – 127.3	120.0 – 126.0
% inside 2 SD range	95	100

First, it must be accepted that this is a relatively low database and we should not expect the perfect set of numbers within and outside the various SD ranges to be obtained. If these ranges were used for several months then the average and ideal numbers would be approached by the end of that time.

**CPD Questions:**

4. **What use are the package inserts provided by commercial companies in the construction of your +/- 2 SD control ranges?**
  - A) They tell us which ranges we need to use in our lab
  - B) They tell us roughly within what ranges our own ranges should be
  
5. **If you use very wide ranges for your internal QC Levey-Jennings Charts, every control will be within ranges and there will be no hassles with out of control results.**
  - A) This is a very good idea
  - B) This is a very bad idea

Although these sets of figures may look similar, there are some important differences.

At the lower limits of control results there is hardly any difference between the outcomes. For example, a result of 120 would be inside the +/- 2 SD range for both “All results” and “Trimmed results” sets. However, the situation is different at the top end of control results. A result of 125 would, for example, be inside the +/- 1 SD range when using the “All results” figures, but outside this range when compared to the “Trimmed results” set of figures. Similarly, a result of 127 would be inside the +/- 2 SD range created using the “All results” ranges, but outside the 2 SD range worked out with the “Trimmed results” data set.