CLINICAL RESEARCH DIVISION

Understanding Statistics and Data Analysis

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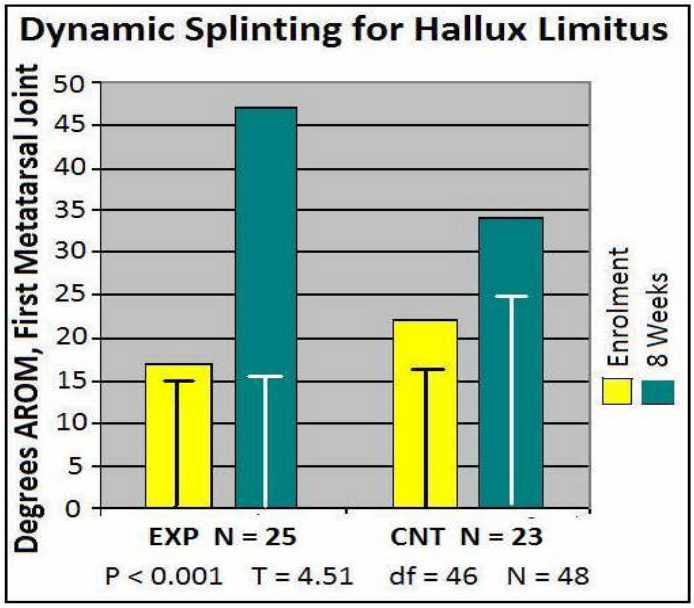
Dear Colleagues,

Let me begin by informing you that all of our data analysis is completed by an outside biostatistics professor. To start understanding statistics let me explain the initials on the following graph:



EXP = Experimental, patients treated with standard of care and Dynasplint
CNT = Control, patients treated only with standard of care and NO Dynasplint

N = The Number of patients or subjects in each Category (or the total study). This graph shows 25 Experimental Patients (treated) vs. 23 Control Patients (not treated with DSI). **N = "Power."**

P - is the value that determines if there was a **significant difference** between groups or treatments, and a P value ≤ 0.05 is required to show a "Statistically significant difference." (You can think of "P" as the **p**robability that this difference happened at random, and the smaller P value allows "cause and effect" to be hypothesized as the reason for difference.)

T - is the probability that the distribution of data is "**normally distributed**" in a parabolic, or bell curve.

df – are the Degrees of Freedom which are the values in the final calculation of a statistic that are "free to vary" to still have the same result of significant difference.

SD – is shown in the white lines and this is the **Standard Deviation** or the variability from the mean or average score (the smaller SD to large mean score is the best).

$\overline{X}$ - Is the **Mean** is the average in a calculation, (i.e. the Mean AROM of the MTJ Extension for EXP patients was 17° before treatment vs. Mean 47° after treatment).

The bottom line is that to show a" significant difference" in treatment, the P-Value that must be less than 0.05, and the smaller the P-value the better it appears.

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