The two sample t-test for zero difference gives an S.P. of 0.01843. This is quite small. The null hypothesis of zero mean difference can be rejected. I would be happier with a distribution free method such as Rank Whitney/Wilcoxon

```
linefit(stress1^0.25,stress2^0.25)
   α =   1.464    /   β =   0.1016    /   RSS =   0.8942
   Fit: response =   1.464  +   0.1016 * (explanatory)
```

In SSC's quirkey language, the model predicts a value for stress1 of

$(1.464 + 0.1016 \times (\text{Stress2})^{0.25})^4$

alternatively

$\sqrt[4]{\text{Stress1}} = 1.464 + 0.1016 \sqrt[4]{\text{Stress2}}$

$\sqrt[4]{\text{Stress2}} = \frac{1}{0.1016}(\sqrt[4]{\text{Stress1}} - 1.464)$

$= 9.843(\sqrt[4]{\text{Stress1}} - 1.464)$

$\sqrt[4]{\text{Stress2}} = 9.843 \times \sqrt[4]{\text{Stress1}} - 14.41$

(Stress1 is the level of beta-endorphin before, and Stress2 the level after, the operation).

$\Delta\text{Stress} = (9.843\sqrt[4]{\text{Stress1}} - 14.41)^4 - \text{Stress1}$

(where $\Delta\text{Stress} = \text{Stress2} - \text{Stress1}$)

P.S. The sum of residuals for the constrained least squares line is 2.309, much higher than for the unconstrained line, so the unconstrained line seems the better fit.

You don't seem to have come to any particular conclusion

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