

Multiplicity

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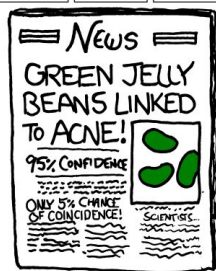
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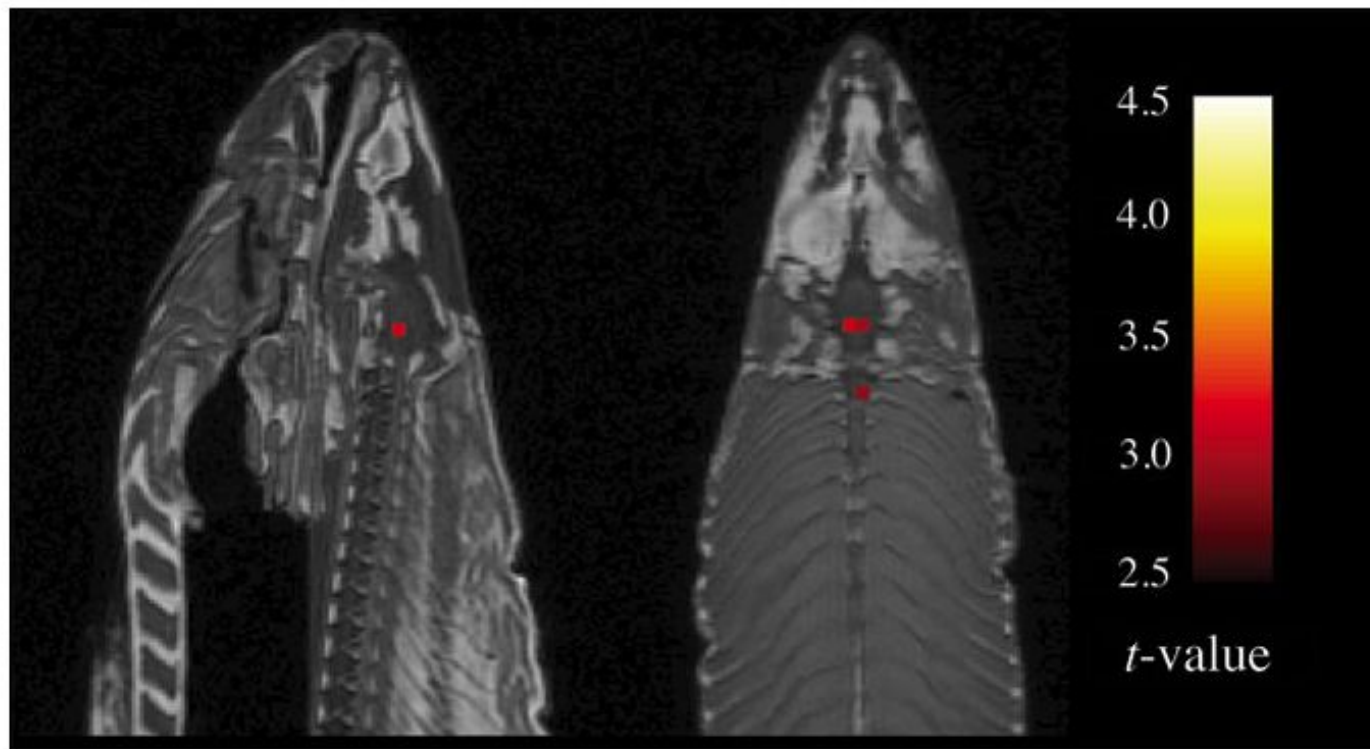


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<http://www.cliparthut.com/gone-fishing-clipart.html>
<https://www.pinterest.com/cirera/cartoons/>



<https://xkcd.com/882/>



<http://www.wired.com/2009/09/fmrisalmon/>

Multiple comparisons can arise from applying many tests and focusing on the significant ones

- Fitting too many models
- Looking at too many quantities of interest
- Fishing expeditions - testing everything without a priori hypotheses

Easiest fix - multiply your P-values by the number of tests performed

10 tests and a P-value of 0.01, now it's 0.10



"Carlo Emilio Bonferroni" by Unknown - <http://www.analyticquest.com/gallery>
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There's a vast literature on multiple comparison procedures and rules

The Bonferroni correction is simple and robust, though can be quite conservative