

BRAIN IMAGES

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TENSOR MORPHOMETRY

COMPARING SUSAN'S BRAIN TO STANDARD TEMPLATE TO MEASURE BRAIN VOLUME OR DENSITY

Using a technology called tensor morphometry, Dr. Simon and his colleagues at the M.I.N.D. Institute at U.Cal. Davis, <http://cabil.mindinstitute.org> imposed Susan's brain on a standard template designed to represent a "normal" brain.

This technology, not available until recent years, shows what a regular MRI cannot. It gives doctors some idea of the volume of brain matter, a rough corollary for "quality" of brain matter.

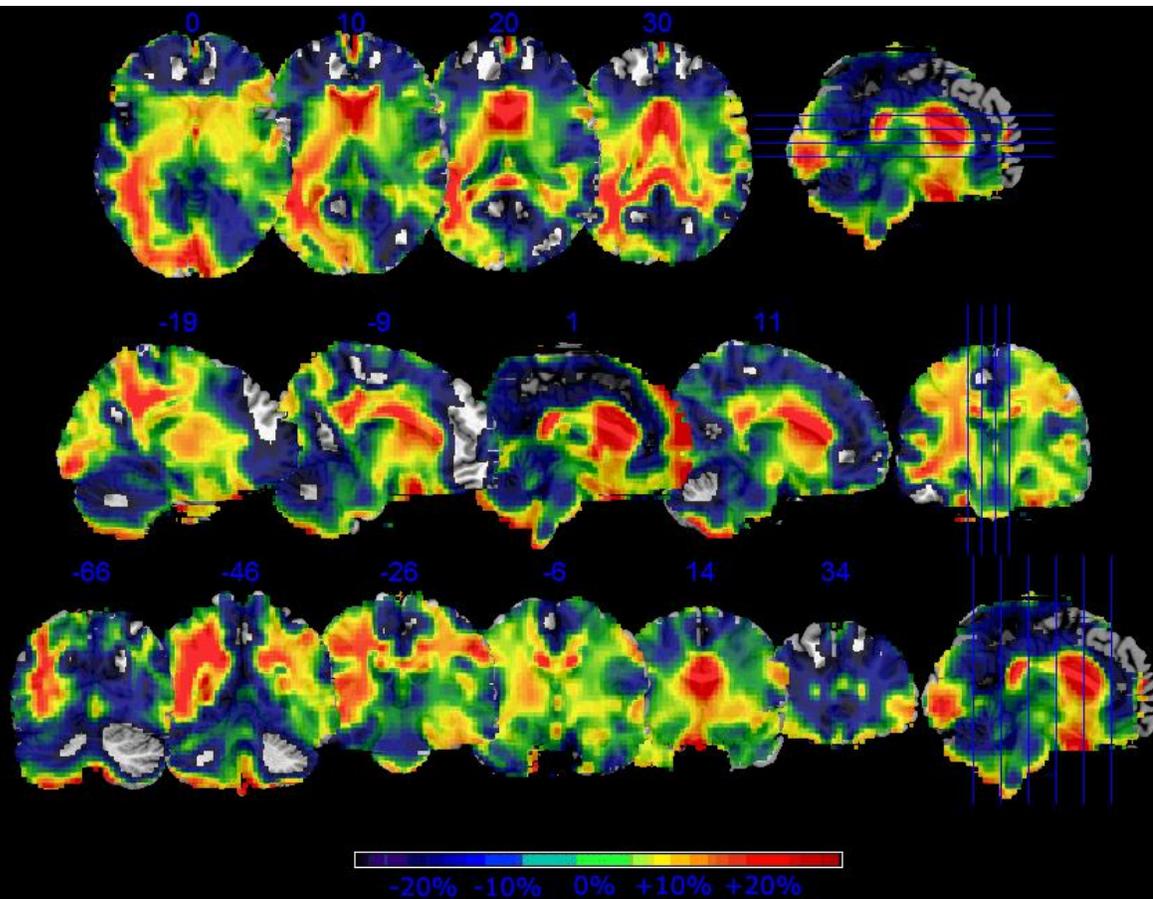
Susan broke the color legend for the template.

The legend did not extend low enough to accommodate the low brain volume they found in so much of Susan's brain. And, it did not extend high enough to accommodate the high brain density in other, albeit a much smaller number, of areas. The dark blue, black and purple in the pictures represent the areas of Susan's brain that are very low density. The deep red areas are a little more ambiguous. In theory they could be bad too (representing fluid or density so thick it is chaotic) but, given that the areas of red are associated with brain activities that mirror Susan's strengths, it is almost surely the case that the red in these images is good brain matter.

The pictures below are reversed, so that left is right and right, left. In each row, the picture on the far right has blue lines running thru it. The blue lines correspond to the "slices" within the brain depicted in that row, giving you some idea of the area within the brain that each slice in the row is picturing.

The color legend at the bottom of the image gives you some idea of how the volume in Susan's brain differs from that of the "normal" brain. As the legend shows, 0 (green) is average density, deep blue is much lower than normal density, purple lower than that and black extremely low. Yellow is higher density or volume. Red is much higher than "normal".

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CABIL_171 Volume Expansion and Deficit