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Paper Pick by Liisa A.M. Galea

This paper by Williams et al. use a large and extensive database ( UK biobank) to examine over 40,000 brain scans across sex and age using corrections for brain size that involved allometry. They find that 409 of 620 measures (surface area, thickness, volumes) showed significant differences between males and females roughly split between males and females in terms of direction (37% larger in males, 30% larger in females). They use allometry as a correction – which involves the non-linear scaling relationship between body size (height and weight) to brain size. Contrary to other claims using much smaller sample sizes, numerous sex differences across many regions were apparent. Why is this work important? It used a large sample size, and appropriate control measures. What can we take away from these results? These results underscore that although numerous areas in the brain may be different between males and females, one sex is not more dominant than the other. Furthermore it should be highlighted that these differences do not make any conclusions that more is “better” for functional outcomes. Indeed, differences in these brain measurements may provide clues as to why there are sex differences in prevalence and manifestation of neuropsychiatry and neurological disorders. More work will need to be done to determine how gender plays a role in these outcomes.