

### Journal One for Scientific Literacy

Out of the two articles chosen, the scientific study was titled Obesity Associated with Increased Brain-Age from Mid-Life and the subject was the intelligence level of overweight people (Ronan, et. al., 2016). The problem or observation that spurred this research was made by researcher Lisa Ronan when she claimed in a news article that being overweight shrinks the brain and consequently makes an obese person dumber than a healthy and fit person (Cerullo, 2016). For this experiment, the scientists hypothesized that Obesity and aging lead to an increase in brain deterioration.

The experiment performed was used to test the claim a news article titled *Scientists Fat People are Stupid* made. In the news article, they claimed that stupid people eat fast food, stupid fat people will get Alzheimer's, and they also suggest losing weight if you do not want to be stupid (Cerullo, 2016). The experiment started with 527 test subjects whose ages ranged from twenty to eighty-seven years old (Ronan, et. al., 2016). The 527 test subjects were participants of a project that was researching how aging affects memory, located at the Cambridge Centre for Aging Neuroscience (Ronan, et. al., 2016). As a way for scientists to see if white matter was related to the age difference between thin and overweight people, the scientists separated the data into an obese group, and a physically fit group (Ronan, et. al., 2016). After splitting the test subjects into two groups, the scientists then found the mean difference for age and brain matter for both categories (Ronan, et. al., 2016). To measure the

amount of white matter in the brain, the scientists used cortical reconstruction methods which involve taking MRI images of the brain to avoid invasive procedures (Ronan, et. al., 2016).

After conducting this experiment, the scientists found that the amount of white matter volume found in the subject's brains correlated to their age (Ronan, et. al., 2016). The scientists discovered that white matter volume in the brain is at its peak when one is middle-aged (OBESE BRAIN). White matter volume in the brain then decreases after the peak of one's middle-age years (Ronan, et. al., 2016). While there is a difference in white matter present in the brain during and after middle-aged years, the scientists found that it is a slight and almost insignificant amount (Ronan, et. al., 2016).

After conducting the experiment and analyzing the results, the scientists concluded that obesity does, in fact, increase the rate of brain deterioration (Ronan, et. al., 2016). The initial hypothesis the scientists made was supported by their findings in the MRI scans of the subjects brains. Since scientists discovered through this study that brain deterioration correlated to obesity, the scientists should now conduct a study on whether or not white brain matter can be regained after losing weight. However, the scientist's conclusions do not support the news article. While the scientists found that obese people do have a decrease in white brain matter, that does not make obese people stupid. The news article also suggested that if you eat fast food, then you are stupid, which was not supported in the actual scientific experiment.

After reading both the news article and the scientific experiment, it is clear that the news story was not a representative report of the scientific study. One thing the news article changed was the level of ~~inelegance~~ that is lost when one is obese. In the news article, they state that being obese automatically makes you stupid, and in the scientific study, they discovered and reported that even though the brain is affected by obesity, that does not mean an obese person is classified stupid. The news clearly tried to make their article appear more interesting to the reader, when in fact they ended up making false and exaggerated claims that could offend a lot of people.

#### References

Cerullo, A. (2016, August 11). Scientists: Fat people are stupid. Clapway.  
Retrieved

from <http://clapway.com/2016/08/11/scientists-fat-people-stupid/>

Ronan, L., Alexander-Bloch, A.F, Wagstyl, K., Farooqi, S., Brayne, C., Tyler,  
L.K, Cam-CAN,

& Fletcher, P.C. (2016). Obesity associated with increased brain-age  
from mid-life. *Neurobiology of Aging*, 47, 63-70. doi:  
10.1016/j.neurobiolaging.2016.07.010.