

An brain and small lesions in the brain



An investigation shows that damage to regions of the brain with high density will create higher shortages but damage to other locations of the brain will create restricted shortages. Hubs are the center of networks that indicate points of importance for network function but research cannot locate where hubs are. The geography of the brain is known for being able to locate damage of the brain and small lesions in the brain can have a large damage to the brain which wouldn't be expected.

Sometimes there are explanations of cognitive and behavioral consequences following circumscribed lesions which could be an organization of functions of the brain. A view of hubs emphasizes the number of connections between regions but another view is that regions apart of the DMN, which is default mode network, would have ratings that are higher on measures of important networks. The number of connections is measured by degree which may not indicate the importance of network function.

It is predicted that lesions of brain regions which show activity with brain systems would produce large and many effects on the brain. The cortex is split into different systems based on activity from the fMRI. There are two predictions and the first one is that lesions which are located in densities which are higher will affect processing and will produce impairment, but the second prediction is that lesions located in areas with lower density scores will have less repercussion. An study took place to look at how hub is defined and find the outcomes of cognition and behavior in 30 patients. A study took place with 30 patients, 19 with focal lesions to six target and 11 with focal lesions to two control areas, and the prediction of this study was that the brain regions that were damaged would create more impairment in the mind.

The results of this investigation were that the group with the control regions was larger than the target group, but the sizes were not very different.

Neuropsychological reports were reviewed after the study by psychologists and they rated the patient's degree of impairment having to do with cognition and behavior.

Results of the impairment ratings showed that all nine domains were present in patients with target lesions, but only seven of the nine domains were present in the patients that had lesions to target locations. Studies have shown that the average domain of a target lesion producing impairment is 6.89 but the average domain of control lesions producing impairment is 2.64. Follow-up analysis's were performed and the result of them was that no evidence was found that the main finding was accounted for by other factors other than the location of a lesion. It is important to figure out if the lesioned tissue had properties needed to detach the target and control locations so the lesion doesn't go past the target and control regions.

Lesion masks were used to remove the properties of tissues which resulted in measures of the degree being less than expectations. When lesion sampling, idealized and observed measures did not effect the predicted outcome, but instead, participation was the best predictor. Severe and large cognitive impairment was created when there was damage to target locations. Patients have different degrees of impairment and recover differently. Communication between functional systems can be affected by focal regions which are centered on high brain regions. Control lesions tend to affect less systems than target lesions would. Support was found that

when systems were affected by lesions, only some systems in the control regions were affected.

Degree does not identify regions of importance even though networks say that regions of the control group have a higher degree. Language impairment was common in the target group even though many target group patients had normal language. This study shows the differences in the effects of groups and the location of lesions which can help scientists figure out more about the brain and how it functions so they can use the knowledge to find out more about the brain.