

Brain Network Dysfunction and Post-Stroke Delirium and Spatial Neglect, an FMRI study

Fast Takes – Episode 30

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- JOAN BANKS-SMITH: 00:08 [music] I'm Joan Banks Smith for Kessler Foundation's Fast Takes, research that changes lives. In this episode, Dr. Olga Boukrina, research scientist in our Center for Stroke Rehabilitation Research, talks about her peer reviewed article, "Brain Network Dysfunction and Post-Stroke Delirium and Spatial Neglect, an FMRI study" published on October 8th, 2021 in the journal American Heart Association Stroke. Funding source was the American Heart Association and in-kind Support provided from the National Institute on Aging. Dr. Boukrina, can you share with us the main takeaways of this publication?
- OLGA BOUKRINA: 00:47 Neurologic deficits remain one of the most devastating consequences of stroke, and for example, a condition called delirium, which is an acute reduction in cognitive function, can hinder stroke recovery, and it contributes to long term cognitive decline. And so in this publication, we explored the occurrence of delirium after right hemisphere stroke. It seems that it is more common after right brain stroke. And the same way that our brains are left dominant for language, they are right dominant for certain functions of attention. And attention is what's impaired in this condition. We also consider it another condition called spatial neglect in predicting the development of delirium, and spatial neglect is a right brain disorder of spatial processing, where people fail to notice and act in the left side of space. So we we studied these two conditions among right hemisphere stroke patients using functional neuro imaging, and we studied what brain networks are impaired in those two conditions.
- BANKS-SMITH: 01:54 What is the impact and next implications of this publication to the field?
- BOUKRINA: 01:59 What we found was very interesting in that the right brain dominant attention and arousal networks were impaired in both of those conditions and that occurrence of spatial neglect, in particular, the functional deficits that result from spatial neglect contributed to the presence of delirium symptoms. The consequences of that, we hope, is that clinicians will become more aware of the company-occurrence of these two disorders together, so they become more alerted to patients who are particularly at risk, and also that we can use this knowledge in order to begin to develop new treatments that are informed by these neuroscience discoveries.
- BANKS-SMITH: 02:45 Dr. Boukrina, thank you so much for taking the time to talk to us about your peer reviewed article.
- BOUKRINA: 02:50 Thank you.

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BANKS-SMITH: 02:51

To learn more about Dr. Boukrina and her peer reviewed article, links are in the program notes.

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