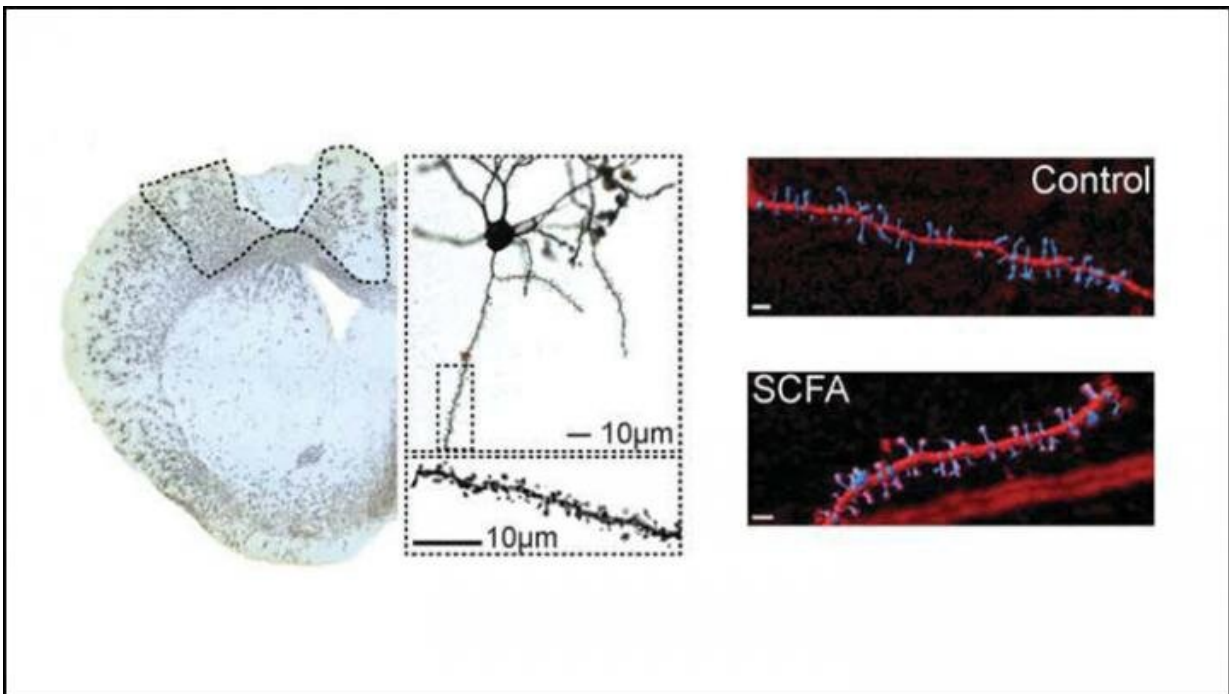


Harnessing the microbiome to improve stroke recovery

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Post-stroke neuronal plasticity is altered by short-chain fatty acid treatment.
Credit: Sadler et al., *JNeurosci* 2019

Supplementing the body's short chain fatty acids can improve stroke recovery, according to research in mice recently published in *JNeurosci*. Short chain fatty acid supplementation may be a non-invasive addition to stroke rehabilitation therapies.

The gut microbiome influences brain health, including how the brain recovers from stroke. Short chain fatty acids, a fermentation product from the bacteria in our guts, are a key component of gut health but their role in [stroke recovery](#) has not been explored.

Sadler et al. added short chain fatty acids to the drinking water of mice for four weeks before inducing a stroke. The mice that drank the fatty acid water experienced a better stroke recovery compared to the control mice, including reduced motor impairment and increased spine growth on dendrites—a crucial memory structure. Additionally, the fatty acid-supplemented mice expressed more genes related to microglia, the brain's immune cells. Microglia activity could be responsible for increasing [dendritic spines](#) and improving stroke outcome. This relationship indicates short chain [fatty acids](#) may serve as messengers in the gut-brain connection by influencing how the brain responds to injury.

More information: Rebecca Sadler et al, Short-chain fatty acids improve post-stroke recovery via immunological mechanisms, *The Journal of Neuroscience* (2019). [DOI: 10.1523/JNEUROSCI.1359-19.2019](#)

Provided by Society for Neuroscience

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