

Novel Stroke Therapeutics: Unraveling Stroke Pathophysiology and Its Impact on Clinical Treatments.

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Public Summary:

Stroke is one of the leading causes of death and disability in the world. Over the past few decades our understanding of the effects of stroke has increased, but greater insight is required to advance the field of stroke recovery. Clinical treatments have improved in the immediate time window after stroke, but long-term treatments remain limited. Complex neural circuits damaged by stroke make restoration of function after stroke difficult. New therapeutic approaches, including cell transplantation or stimulation, focus on reestablishing these circuits through multiple mechanisms to help grow new neurons. Other research targets intact neuronal networks that can compensate for damaged regions. This review highlights several important mechanisms of stroke injury and describes emerging therapies aimed at improving outcomes for stroke patients.

Scientific Abstract:

Stroke remains a leading cause of death and disability in the world. Over the past few decades our understanding of the pathophysiology of stroke has increased, but greater insight is required to advance the field of stroke recovery. Clinical treatments have improved in the acute time window, but long-term therapeutics remain limited. Complex neural circuits damaged by ischemia make restoration of function after stroke difficult. New therapeutic approaches, including cell transplantation or stimulation, focus on reestablishing these circuits through multiple mechanisms to improve circuit plasticity and remodeling. Other research targets intact networks to compensate for damaged regions. This review highlights several important mechanisms of stroke injury and describes emerging therapies aimed at improving clinical outcomes.

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