

## ***ESSR Journal Club***

**Covered Article:** “Novel Strategies for Healthy Brain Aging”

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- 1) Why are each of the hallmarks of brain aging specific to the brain and not to other tissues?
- 2) Why is dysregulation of energy metabolism considered to be an underlying contributor to all hallmarks of brain aging?
- 3) Explain some of the reasons why calcium dysregulation is a particular issue in neurons, and explain the current evidence that indicates how aerobic exercise may mitigate this problem.
- 4) What part(s) of the brain can generate new neurons during the adult lifespan? How does exercise influence this process? To what extent does neurogenesis seem to be involved in the protective effects produced by exercise and anti-brain aging compounds?
- 5) Of the six compounds reported to improve peripheral health and lifespan in the National Institute on Aging’s Intervention Testing Program (ITP), which offers the most protection for brain health during aging? How similar are the mechanisms of action for these compounds?
- 6) How may calorie restriction and intermittent fasting be similar to exercise in promoting brain health during aging?
- 7) How effective would the combination of exercise, nutritional modifications, and anti-aging compounds be for treating or preventing brain aging and neurodegeneration? What are potential limitations of this approach?
- 8) Beyond those suggested in this review, what other combination strategies (interventions combining lifestyle interventions or pharmacological agents) may protect against brain aging?