



Discovery Science Emerging Scholars Lecture

“NAD⁺ Flux is Maintained in Aged Mice”



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NAD⁺ is an essential coenzyme found in all living cells. NAD⁺ concentrations decline during aging, but whether this reflects impaired production or accelerated consumption remains unclear. Here we employed isotope tracing and mass spectrometry to probe NAD⁺ metabolism across tissues in aged mice. In 25-month-old mice, we observe modest tissue NAD⁺ depletion without significant changes in circulating NAD⁺ precursors. Isotope tracing showed unimpaired synthesis of circulating nicotinamide from tryptophan, and maintained flux of circulating nicotinamide into tissue NAD⁺ pools. Although absolute NAD⁺ biosynthetic flux was maintained in most tissues of aged mice, fractional tissue NAD⁺ labeling from infused labeled nicotinamide was modestly accelerated. Long-term calorie restriction partially mitigated age-associated NAD⁺ decline despite decreasing NAD⁺ synthesis. Thus, age-related decline in NAD⁺ is driven by increased NAD⁺ consumer activity rather than impaired production.

Thursday
October 29, 2020
9:30 am

Zoom

This lecture series features the most promising young scientists who are making notable discoveries as postdoctoral fellows or early career faculty.

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