

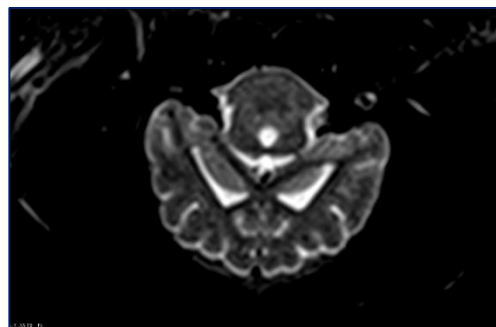
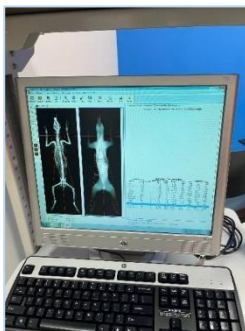


**Kriya Dunlap, PhD, Associate Professor of Biochemistry, and Research Project Leader, CNSM/IAB UAF. *Vitamin D and healthy aging, the sled dog sentinel for the circumpolar north.***

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The sled dog model of brain aging is being recognized as a valuable research tool for advancing treatments to address cognitive disorders such as Alzheimer's disease. With shorter lifespans and parallel biochemical pathways, dogs have become an important biomedical research model for both Alzheimer's disease and insulin signaling. The volume and morphology in brain gray and white matter in canines are being assessed in this research using the HaMR Core's magnetic resonance imaging (MRI) instrument in young and old dogs before and after being fed a dietary supplementation of wild Alaska salmon. Research shows a strong connection between cognitive function, insulin resistance, and age. This project seeks to assess the connection between vitamin D and certain aspects of aging, including cognitive functioning, and whether Alaska salmon can improve markers of metabolic health in the sled dog model. Research has shown that vitamin D deficiency is higher in persons with type 2 diabetes, a condition more common among elderly patients and those with Alzheimer's disease. Moreover, Alzheimer's disease is often referred to as type 3 diabetes. Sled dogs are used in this research because they are part of the traditional subsistence lifestyle and are an important human health model in the circumpolar north. Dr. Dunlap, formerly a TRiM Pilot Project PI, is a recent recipient of an NIH National Institute on Aging R03 grant.

This study also found differences in the amount of vitamin D levels across various species of salmon fish. While the literature reports significant variation in the higher vitamin D content of wild-caught salmon compared to farm-raised salmon, there is little written about the varying vitamin D levels between species of wild salmon. In preparing for this experiment, the Dunlap lab discovered that sockeye salmon taken from the Copper River with the skin on has three times the amount of vitamin D in comparison to chum salmon from the Yukon River.



Canine research being conducted by Dr. Kriya Dunlap uses MRI and iDXA imaging to note changes in brain morphology and volume, as well as body composition before and after being fed a diet of wild Alaskan salmon. *Photos courtesy of Kriya Dunlap, PhD and Carl Murphy, PhD.*