Aging enhances the calcium sensitivity of central neurons of the mouse as an adaptive response to reduced free intracellular calcium

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Age-related changes in Ca(2+)-homeostasis have been investigated in mechanically dissociated neurons from young and aged mice. In aged animals, basal intracellular calcium ([Ca2+]i) was significantly reduced and depolarization (KCl)-induced rise in [Ca2+]i was lower, probably as a result of increased activation of Ca(2+)-dependent mechanisms terminating Ca2+ influx. Additionally, depolarization-induced inositol-phosphate (IP) accumulation in aged animals was found to be significantly increased. Both findings suggest that Ca(2+)-dependent intracellular processes become more sensitive to Ca2+ in aged animals due to decreased Ca2+ availability.

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