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Elicitation of a pungent sensation does not implicate memory modulation in adolescents aged 14-16.

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Pungent sensation induced by allyl isothiocyanate which is a functional ingredient in a Japanese horseradish called wasabi involves the activation of transient receptor potential ankyrin 1 (TRPA1). It has been suggested that TRPA1 is associated with cognitive impairment in Alzheimer's disease and neuroprotection on dentate gyrus granule cells. As our previous studies focus on daily-life strategies such as physical exercise and sleep for memory enhancement in adolescents, we further investigate whether elicitation of a pungent sensation would modulate memory recall. In the present study, children aged 14-16 spend 1 minute to orally taste wasabi to acquire a pungent sense, followed by an immediate 5-minute memory recall test displaying ten random combinations of three to four English alphabets plus one to two Arabic numbers in each attempt. Our results showed that the pungent sensation induced by wasabi showed no significant modulation on memory recall in the adolescents. This implicates that immediate elicitation of a pungent sensation in which TRPA1 may be involved does not help memory recall in adolescents.