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Development of a Healthy Food Knowledge Activity to assess nutrition knowledge in young children

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Background – Knowledge developed early in life tends to persist throughout life, therefore nutrition knowledge developed by young children may contribute to their ability to make healthy dietary choices later in life and in turn reduce their risk for developing obesity. However, methods commonly used to measure knowledge in pre-adolescents such as questionnaires and interviews are not appropriate for younger children.
Objective – To develop a reliable tool for assessing nutrition knowledge in 5-6 year old children using pictures, which have been shown in previous studies to maintain children's interest and motivation and are appropriate for their level of cognitive development.
Design – A Healthy Food Knowledge Activity (HFKA) was designed, using 30 photos of foods derived from each of the food groups in the Australian Healthy Eating Guidelines with varying levels of difficulty, providing a total score out of 30. The activity was piloted on 13 children on two occasions one week apart to assess test-retest reliability and was then administered to 192 children.
Outcomes – Test-retest reliability was good (r=.774, p=.002). A normal distribution curve was shown with the administration of the test (M=23.03, SD=3.796) with skewness (.175) and kurtosis (.349) standard errors within acceptable limits.
Conclusion – This study indicates that it is possible for children as young as 5 to distinguish, with some degree of insight, between healthy versus unhealthy food. The HFKA can be used to investigate young children's nutrition knowledge and identify contributing factors in order to improve their knowledge.

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The effect of coenzyme Q10 supplementation on antioxidant status, oxidative damage and gene expression in skeletal muscle of aged guinea pigs

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Background – Coenzyme Q10 (CoQ10) is an antioxidant, is a component of the mitochondrial electron transport chain, and has been recognised for its anti-aging properties. Little work has been carried out to determine its effect in aged skeletal muscle.
Objective – To investigate the effect of CoQ10 on antioxidant status, oxidative damage, and gene expression of mitochondrial electron transport chain proteins in aged skeletal muscle.
Design – Aged guinea pigs were randomly assigned to either a control or a CoQ10 (10 mg/kg body weight/day) treated group for 6 weeks. Muscle antioxidant status was determined by measuring CoQ10, total glutathione, and catalase and glutathione peroxidase activities. Muscle oxidative damage was determined by measurement of malondialdehyde and DNA abasic sites. The gene expression of cytochrome *c* oxidase subunits III and VIa were also determined in muscle. To make comparisons between muscle and the circulation, plasma CoQ10 levels and DNA abasic sites in white blood cells were measured.
Outcome – CoQ10 supplementation had no significant effect on any of the muscle markers (p>0.05). However, CoQ10 intake significantly elevated CoQ10 levels in the plasma ($p<0.05$), and significantly decreased DNA abasic sites in white blood cells ($p<0.05$).
Conclusion – CoQ10 may not be an effective dietary supplement for increasing antioxidant capacity, decreasing oxidative damage, and altering gene expression in aged skeletal muscle.