

Consumer Acceptability of Dehydrated Potato Chips Fortified with Various Animal Proteins

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Background/Objective: Sufficient protein is necessary for development of muscle mass with increased needs during growth, injury/illness, and increased activity. This study evaluated consumer acceptability of dehydrated parmesan-flavored potato chips after partial substitution of potato with either canned tuna or canned chicken breast.

Methods: Consumers (N=52) of animal protein, including tuna and chicken, evaluated chips using a hedonic scale (1=dislike extremely; 3=neutral; 5=like extremely) for appearance, smell, texture, flavor, aftertaste, and overall acceptability). Nutritional compositions of chips were determined using the USDA Food Data Central.

Results: Overall acceptability of control parmesan potato chips was neutral (mean=3.0±1.0) while those of tuna and chicken parmesan chips were liked (means=3.2±1.0; 3.5±1.0; respectively). Unlike chicken chips, smell, flavor, and aftertaste were slightly less than neutral for tuna chips. However, the textures of tuna and chicken chips were liked significantly more than control ($p < 0.001$ for both). Analysis of the nutritional composition of chips indicated that, while a 28-gram serving of control parmesan potato chips is a good source of protein (11.5% of 2,000 Kcal Dietary Reference Intake (DRI)), addition of tuna or chicken resulted in chips classified as excellent sources of protein (30.6% and 27.8% DRI, respectively).

Conclusions: Positive overall acceptability ratings for protein-fortified chips show that individuals needing additional dietary protein could benefit from consumption of either tuna or chicken chips. Future studies may address the addition of ingredients, including spices, to minimize less than neutral ratings for smell, flavor, and aftertaste in tuna-based chips. This study is relevant for dietitians recommending protein-rich foods to clients.

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