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Zinc Residues in Caribou: A Dilemma Presented to the Selawick, AK, Community: Community Decisions About Risk and Benefit

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Background and Objectives: Zinc residues were repeatedly found in caribou of herds migrating near Selawick, Alaska—an Inupiat Eskimo community. The consequences of ending caribou consumption to avoid zinc exposure could cause cultural upheaval, food insecurity, and nutritional deficiencies. Most Western science risk assessment approaches are poor aids to community leaders facing such choices for their people. The objective was to introduce new LifeLine risk assessment tools and assess how they performed in expanding community capacity and how they fit into the overall needs of the decision-makers.

Methods: Selawick community leaders and an advisor worked with LifeLine to create realistic dietary profiles, including caribou consumption by age and season, which were applied with zinc residue data to Customized Dietary Assessment Software[®] yielding community-specific risk estimates and inherent variability. Selawick's advisor interpreted results to community members. Leaders considered this information with their existing cultural parameters for decision-making. Together, we evaluated the contribution of the new methodological approaches and tools toward building community capacity and sensitivity to this example of disproportionate exposure and potential health impact.

Results: Risk assessments were deemed relevant to the community and reflected variables due to personal preference, seasonality, and other factors. Zinc exposure from caribou presented less problems than consequences of ending the hunt and food source. With the aid of technical advisors, LifeLine tools aided the decision-makers in three of four criteria.

Conclusions: New software and methodological approaches can expand community capacity in health and policy decision-making. Nutritional profiling capacity and community training are critical next steps.