

Announcing the release of two new tools for incorporating unique diets into exposure and risk assessments, and the Compendium of Alaska Subsistence/Traditional Dietary Files

Developed by The LifeLine Group, Inc. and funded by the US Environmental Protection Agency

The new exposure and risk assessment tools described here address two issues of major concern in dietary risk assessment. The Dietary Record Generator™ (DRG) provides a mechanism for updating existing survey databases to reflect changes in food consumption, as well as the ability to generate food consumption databases for many groups including Tribes, other ethnic and cultural groups, or people with unique or atypical diets. The LifeLine Customized Dietary Assessment Software™ (CDAS) can then be used to assess dietary exposure and risks in any of these diets, or it can be used to blend these unique diets with standard commercial diets as represented by the US Department of Agriculture's Continuing Survey of Food Intake by Individuals (CSFII) in whatever proportions are appropriate.

Need for New Exposure and Risk Analysis Capabilities

Food items on the usual menu for some subpopulations are not included in any commercial dietary survey, such as the US Department of Agriculture's Continuing Survey of Food Intake by Individuals (CSFII), but may be very important for accurate and representative exposure and risk assessments. Often, chemical residues measured in these foods have been cited as the initiator for concern about the safety of these diets.

A **unique diet** could be any diet that is not the type represented in the CSFII, such as vegetarian diets, cultural or ethnic diets, low-carbohydrate diets, diets high in any specific food of interest or high in fortified foods.

The software packages and Compendium are free of charge and available to the public, with user manuals and tutorials provided for the programs. The software, Compendium, and supporting material can be downloaded from The LifeLine Group's website:

<http://www.thelifelinegroup.org>

LifeLine Dietary Record Generator™ (DRG), v.1.0.1

Capturing Information on Unique Diets, Current Trends

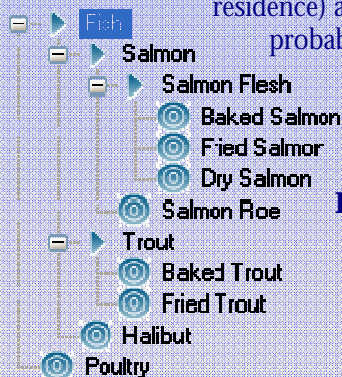
The DRG™ is a stand-alone software tool that can capture information about food and dietary habits from a wide array of sources and transform it into a comprehensive database of simulated dietary intake files. The resulting databases can then be used as if they were generated from a conventional survey such as the US Department of Agriculture's Continuing Survey of Food Intakes for Individuals (CSFII).

> The DRG™ provides the opportunity to upgrade or amend existing dietary databases as better information becomes available, or as food availability and habits change.

> The DRG™ also allows the use of dietary information relevant to unique population groups.

DRG™ files can then be imported into the LifeLine Customized Dietary Assessment Software™ (CDAS) for exposure and risk assessment purposes.

Person-based: Because each person has unique characteristics (age, place of residence) a dietary record is generated based upon probabilities that a food is eaten by a person in a specific age group and region.



Seasonal variability of dietary patterns is captured.

Four levels of hierarchical detail in the food list can accommodate different forms of similar food, preparation methods, and preservation methods, all of which may affect concentrations of chemicals in foods.

Extensive referencing capabilities for annotating and documenting sources

About the Tools

Before 2002, exposure and risk assessment software such as LifeLine™ focused primarily on the general U.S. population as described in conventional databases such as CSFII. However, these are often not representative of Tribal communities following traditional lifestyles, with dietary habits and activities such as hunting and fishing for foods not available from commercial sources, working with traditional materials in making artisan goods, and moving entire communities on a seasonal basis. This became the impetus for the Tribal LifeLine Project, an EPA initiative to enhance existing exposure and risk assessment capabilities to more accurately characterize such unique lifestyles and dietary patterns. The resulting suite of tools is flexible and adaptable, able to capture such information for groups such as Tribes, as well as update available information for the general population as dietary habits and food availability changes.

LifeLine Customized Dietary Assessment Software™ (CDAS), v.1.0.3

Exposure and Risk Assessment for Unique Diets

CDAS™ calculates exposure and risk from chemicals in the diet, and introduces many novel capabilities that enable the assessor to consider key realities in the way people eat:

“Menu blending” of diets: Some populations consume both commercial foods as represented by the CSFII database, and unique or atypical foods that can be captured using the DRG™. The degree of this blending may be age- or season-dependent; and may reflect generational preferences, availability, or economics - the availability of the various food items in the community or family pantry. The “menu blending” feature of CDAS™ allows the assessor to use a unique diet defined using the DRG™, or use a diet wholly or partially based on conventional commercial diets defined by the CSFII.

Seasonal differences: The assessor may define seasons in which the dietary profile is different, food sources are different, or proportions between the dietary profiles are different.

Mobility of people: In some seasons, people may change their location or choose to eat food items not typically in their normal diet. CDAS™ can account for annual migrations of some communities to fish camps or hunting camps where menus will be focused on non-commercial foods, as well as for the time when those harvested foods are consumed at home.

Availability of foods: The dietary assessment also considers seasonal variability in dietary habits, food availability, and different food sources with their inherent contaminants.

Define age groups: The widely varying eating habits of different age groups can also be accounted for.

CDAS™ runs an exposure and risk analysis using dietary data captured with the DRG™ and/or from CSFII, as well as user-entered chemical information, and produces customized graphs and tables, as well as a summary report in a standardized format.

Compendium of Alaska Subsistence/Traditional Dietary Files

The Compendium is a collection of five distinct dietary profiles seen in Alaska and captured through use of the Dietary Record Generator™ software. The profiles represent the unique diets of Alaska Native populations consuming traditional and subsistence diets.

Five major ecological/cultural zones: Subarctic Interior, Arctic/Subarctic Coast, Aleutian Pacific, Southeast Coast, & Urban/Urban Periphery

Includes unique foods and food forms not captured in databases representing the commercial diet, such as:

- > sea mammals like whale and seal, varieties of fish not seen in commercial diets, caribou, wild birds and their eggs
- > food forms such as liver and head of salmon, often boiled in soups
- > preparation methods such as salmon not only in cooked forms, but also in raw or dried forms

Extensive referencing documents sources, annotates use of data

Expert-reviewed: Created with the collaboration and insight of many Alaskan experts

Source-rich: Contains information derived from dietary surveys, harvest estimates, numerous scholarly papers, and personal experiences of members of the LifeLine™ staff and others willing to share their experiences

Easily updated as more current information becomes available