

## **DISTRIBUTION OF LIGNANS IN DIFFERENT FOOD CATEGORIES**

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**Objective:** The objective is to describe the distribution of lignans in foods in different food categories across the food supply. Lignans are a class of phenolic compounds being studied for potential human health benefits with respect to cardiovascular diseases, hypertension, diabetes, metabolic syndrome, obesity, and cancer.

**Materials and Methods:** In 2019, lignan values (total lignans and four sub-types) were assigned to all foods in the University of Minnesota Nutrition Coordinating Center (NCC) Food and Nutrient Database (0% missing). To describe the distribution of lignans in the over 18,000 foods in the NCC Database the mean, minimum and maximum amounts of lignans in foods in various food categories were determined.

**Results:** Most foods in the NCC Database (85.5%) contain lignans and all of the food categories in the Database include foods that contain lignans. Lignan values range widely within most categories, and those with the highest mean content of lignans include grains (275 mcg/serving; range 0-67,059 mcg/serving); fats, oils and nuts (mean 173 mcg/serving; range 0-106,123 mcg/serving); and commercial entrees (mean 95 mcg/serving; range 0-6,545 mcg/serving). The high variability within categories appears to be attributable to the following seeds that are high in lignans and used as ingredients in a variety of commercial food products: flaxseed (106,123 mcg/serving), chia seeds (9,325 mcg/serving), psyllium seeds (8,619 mcg/serving), and sesame seeds (2,879 mcg/serving). Food products that contain these seeds tend to be notably higher in lignans than products that do not. For example, 26% of baby foods in the fruits and fruit products category contain more than 100 mcg of lignans per 100g due to the presence of chia seeds in these products.

**Significance:** Lignans are found in foods in all food categories, with content varying widely within the categories. Studies aiming to quantify intake of lignans may need to rely on dietary assessment methods that capture a high level of food detail, such as a brand of ready-to-eat cereal.