



# Food Consumption Score (FCS)

## Overview

The Food Consumption Score (FCS) is an index that was developed by the World Food Programme (WFP) in 1996. The FCS aggregates household-level data on the diversity and frequency of food groups consumed over the previous seven days, which is then weighted according to the relative nutritional value of the consumed food groups. For instance, food groups containing nutritionally dense foods, such as animal products, are given greater weight than those containing less nutritionally dense foods, such as tubers. Based on this score, a household's food consumption can be further classified into one of three categories: poor, borderline, or acceptable. The food consumption score is a proxy indicator of household caloric availability. Validation studies have demonstrated that the FCS and the [Household Dietary Diversity Score](#) [1] (HDDS) are both associated with caloric intake, as well as with each other ( [Coates et al., 2007](#) [2]; [Weismann et al., 2009](#) [3]). While the FCS has been validated against quantity of caloric intake, it has not been validated against adequacy of macronutrients or micronutrients ([Leroy et al., 2015](#) [4]).

## Method of Construction

A brief questionnaire is used to ask respondents about the frequency of their household's consumption of eight different food groups over the previous seven days. To calculate the FCS from these results, the consumption frequencies are summed and multiplied by the standardized food group weight (see the food groups and corresponding weights below). Households can then be further classified as having "poor," "borderline," or "acceptable" food consumption by applying the WFP's recommended cut-offs to the food consumption score.

Food Group	Weight
Main staples	2
Pulses	3
Vegetables	1
Fruit	1
Meat/Fish	4
Milk	4
Sugar	0.5
Oil	0.5

Steps:

1. Group food items in the specified food groups (condiments not included)
2. Sum all the consumption frequencies of food items within the same group
3. Multiply the value of each food group by its weight (see table)
4. Sum the weighted food group scores to obtain FCS
5. Determine the household's food consumption status based on the following thresholds: 0-21: Poor; 21.5-35: Borderline; >35: Acceptable.

For more in-depth information on calculation of FCS, see the technical document provided by the WFP ([2008](#) [5]).

## Uses

This indicator is useful for categorizing and tracking households' food security across time, specifically as a proxy for the quantity dimension (i.e. caloric sufficiency) of food security, for which this indicator has been validated. The FCS captures information about *usual* household diet, since it asks respondents to recall what they consumed over the past seven days. The FCS can be used in a range of ways, including for program monitoring and evaluation, and population-level targeting. Since it is a standardized measure, it can also be useful in comparing households in different locations, as well as tracking cyclical changes in household diet if collected repeatedly across seasons or years. The WFP uses the FCS as part of its Comprehensive Food Security & Vulnerability Analysis ([CFSVA](#) [6]) tool to assess food security and vulnerability in crisis-prone populations.

The FCS and [HDDS](#) [1] are highly correlated and can be used interchangeably as a measure of household-level diet diversity and as a validated proxy for energy sufficiency in most contexts ([Maxwell et al., 2013](#) [7]); however, neither of these indicators has been validated as a proxy for micronutrient adequacy. Therefore, before they are used to proxy nutrient adequacy they require further validation ([Leroy et al., 2015](#) [4]). Since the FCS and [HDDS](#) [1] provide very similar information, the selection of one over the other can often be driven by the need for comparability with other surveys or by institutional preference. In other words, if an organization or individual is interested in comparing their results to those of a WFP survey, it makes sense to collect the FCS, while a comparison with other surveys may be more appropriately based on the [HDDS](#) [1], if the [HDDS](#) [1] had been used previously.

## Strengths and Weaknesses

The FCS indicator captures information about *usual* household diet, as it incorporates consumption frequency over a seven-day period. This is different from the [HDDS](#), [1] which only gathers information about the previous day of consumption ([Kennedy et al., 2010](#) [8]). Both the FCS and the HDDS were designed as potentially useful indicators to capture quantity (energy) and quality (nutrient adequacy); however, neither has been validated against gold standard measures of micronutrient adequacy and, as such, should only be used to as a proxy for energy sufficiency (i.e. quantity dimension). By applying standard nutritional value weights to the food groups in the index, the WFP intends for the score to be a more accurate reflection of the calorie content of the diet pattern than an index where all food groups are equally weighted. That said, validation research by [Weismann et al. \(2009\)](#) [3], suggests that these weights do not usefully increase the association of the FCS index with caloric intake over an un-weighted version of the index, and the weights themselves are not based on a clearly defined nutritional metric.

The FCS and [HDDS](#) [1] need to undergo some adaptation to the context in which they will be used in order for enumerators to be able to list contextually appropriate examples of foods that belong to the food groups in the questionnaire. For both the FCS and [HDDS](#) [1], one challenge is how to capture, and whether to exclude, small amounts of food consumed as seasonings or condiments. For both indicators, research has shown that the ability to accurately predict caloric adequacy is greatly increased by ensuring items consumed in small amounts are excluded so as not to overstate the nutritionally relevant diversity of a household's diet ([Lonvon & Mathiassen, 2014](#) [9]).

Additionally, as household-level measures, neither the FCS nor [HDDS](#) [1] are sensitive to intra-household inequities in food consumption, and therefore should not be used for interventions specifically targeting individuals, such as nutritionally vulnerable women or children. (Please see the [Minimum Dietary Diversity for Women](#) [10] (MDD-W) and [Minimum Dietary Diversity \(MDD\)](#) [11] for children 6-23 months indicators for alternative individual-level measures.

## Data Source

In order to construct this indicator, household data must be obtained using the [WFP's standard food consumption score questionnaire](#) [12] (see page 16). In some cases it may be possible to use secondary data from a seven-day

food frequency questionnaire or the consumption module of a [Household Consumption and Expenditure Survey](#) [13] (HCES) provided that: 1) the recall is seven days, 2) the frequency of consumption is collected, and 3) the food items can be mapped to the WFP's standard eight food groups (see table above). Additionally, WFP standardized food group weights must be used. More details can be found in the technical guidelines from the [WFP](#) [14] (2008) [15] and FCS data for select countries can be found on the [Vulnerability Analysis and Mapping Databank](#) [16].

## Links to guidelines

- [World Food Programme, \(2008\). "Food consumption analysis: Calculation and use of the food consumption score in food security analysis."](#) [5]

## Links to validation studies

- [Baumann et al., \(2013\). "Validity of food consumption indicators in the Lao context: Moving toward cross-cultural standardization."](#) [17]
- [Leroy et al., \(2015\). "Measuring the food access dimension of food security: A critical review and mapping of indicators."](#) [4]
- [Wiesmann et al., \(2009\). "Validation of the World Food Programme's food consumption score and alternative indicators of household food security."](#) [3]
- [Coates et al., \(2007\). "Diet diversity study."](#) [2]

## Links to illustrative analyses

- [Tiwari et al., \(2013\) "Shorter, cheaper, quicker, better: Linking measures of household food security to nutritional outcomes in Bangladesh, Nepal, Pakistan, Uganda, and Tanzania."](#) [18]
- [WFP, \(2016\). "Comprehensive food security and vulnerability analysis \(CFSVA\): The Gambia."](#) [19]

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### Food Security Dimensions

- [Quantity](#) [21]

### Data Collection Levels

- [Household](#) [22]

## Data Sources and Methods

- [World Food Programme \(WFP\) Vulnerability Analysis and Mapping \(VAM\)](#)
- [Food Frequency Questionnaire \(FFQ\)](#)
- [Household Consumption and Expenditure Surveys \(HCES\)](#)
- [Dietary Diversity](#)

## Requires Food Composition Database

- [No](#) [23]

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