May 20, 2019

Dear Baby ConnectoMe Project Team,

Thank you for using the Diet and Physical Activity Core for your diet data entry needs!

Enclosed you will find your data set from UNC data, for the food records received in September, October and November 2018 for UMN and for the rood records received in October 2018 for UNC. The purpose of this document is to provide an explanation of: 1) the files you have received, and 2) the tools and methods the Core used to enter your data. This dataset includes data from 17 mother records and 113 child records are included, for 130 records total. Please see Record List Reports for Child and Mother for list of participant IDs included in the current dataset. Please note, this is a stand-alone dataset and has not been concatenated with previously sent datasets.

More records expected in subsequent batches of data, with the next batch of data expected in July 2019. All data for the BCP was entered into NDSR 2017. Should you have any questions about data entry, please contact Core Manager, Joy Black ([joy\_black@unc.edu](mailto:joy_black@unc.edu?subject=BCP%20Data%20Question)).

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## Diet Data

1. Nutrition Data System for Research (NDSR) Version 2017 was used to enter diet recalls for this project. The output files described below include the names and description of each file. The output file format (tab-delimited) allows the data to be imported into most statistical analysis programs.
2. To facilitate analysis, NDSR generates nutrient calculations at several levels including at the component/ingredient level (File 01), food level (File 02), meal level (File 03) and daily total dietary intakes (File 04). Please find descriptions for the files at each level below:
   1. Error Log File (UMNUNCMom00, UMNUNCChild00) - Identifies incomplete records not included in the output. There should not be any data in this file, the CORE will not send over incomplete records.
   2. Component/Ingredient File (UMNUNCMom01, UMNUNCChild01) – Output at the ingredient level; if a food is a recipe or formula in the NDSR database the ingredients are listed here. If a food is not a recipe or formula in the NDSR database, the associated whole food is listed here.
   3. Food File (UMNUNCMom02, UMNUNCChild02) – Output at the whole food level; this file can be used to analyze nutrients in foods at the whole-food and multi-component level. If a food is a recipe or formula in the NCC Food and Nutrient Database, a single line will be reported for the food. Food additions are listed separately from main components. If the Food ID is Type 1 (assembled food or recipe) there will be no nutrient values listed for the whole food. However, the components/ ingredients of an assembled food or recipe will be listed and will have nutrient values listed.
   4. Meal File (UMNUNCMom03, UMNUNCChild03) – Output at the meal eating occasion; this file contains information for each eating occasion and the attributes of each meal. Nutrients listed in this file represent the nutrient totals for each eating occasion. Additional non-nutrient variables of interest are described below:
      1. Meal time: 24 hour HH:MM
      2. Meal name: 1 = breakfast, 2 = brunch, 3 = lunch, 4 = snack, 5 = dinner/supper, 6 = other, 7 = school lunch and 8 = beverage (just a drink)
      3. Meal location: 1 = home, 2 = work, 3 = school, 4 = day care, 6 = deli/take-out/store, 7 = restaurant/cafeteria/fast food, 10 = friend’s home, 11 = community meal program, 12 = party/reception/sporting event, 13 = other, 14 = traveling (car, airport, train, bus, etc)
   5. Intake Properties File (UMNUNCMom04, UMNUNCChild04) – Output at the totals for the day; this file contains the project information, database version, daily nutrient totals per record, and NDSR header and trailer tab information. Additional non-nutrient variables of interest are described below:
      1. Record type: 0 = recall, 1 = record, 2 = record-assisted recall
      2. Day of intake: 0 = Sunday, 1 = Monday, 2 = Tuesday, 3 = Wednesday, 4 = Thursday, 5 = Friday, 6 = Saturday
      3. Visit number: 1 = first, 2 = second
      4. Intake amount: 0 = close to the amount that you usually eat, 1 = a lot more than usually eat, 2 = a lot less than usually eat
      5. Intake reliability: 0 = close to the amount that you usually eat, 1 = unreliable because the participant was unable to recall one or more meals, 2 = unreliable for other reasons
   6. Food Group Serving Counts (UMNUNCMom07, UMNUNCChild07, UMNUNCMom08, UMNUNCChild08, UMNUNCMom09 UMNUNCChild09)- The NCC Food Group Serving Count System is available to allow investigators to easily estimate intake of food groups. Using this system, foods in NDSR are assigned to 168 subgroups that fit within 9 major food categories. It is specifically designed to offer a high level of flexibility to investigate different research questions as related to food group and dietary pattern analysis. NDSR generates Food Group Serving Count output files (files 07-09) to include Food Group Serving Counts Count calculations per food reported (File 07), per meal or eating occasion (File 08), and per day for intake records (File 09). Serving sizes have been assigned to each food based on the recommendations made by the 2000 Dietary Guidelines for Americans when available. For foods not included in these recommendations, Food and Drug Administration (FDA) serving sizes have been used.
      1. Food Group Serving Counts File (07) – Output at the serving count for whole food
      2. Food Group Serving Counts File (08) – Output at the serving count for the meal/eating occasion
      3. Food Group Serving Counts File (09) – Output at the serving count for total intake

\*Please see [*Appendix 10 – Food Group Serving Counts*](https://drive.google.com/file/d/0B7tgPhfpOAbTckpBYjlxQUFkRjQ/view) (included with zip files) for more detailed descriptions as well as examples of food servings and groupings.

* 1. DSAM Files (UMNUNCMom14, UMNUNCChild14, UMNUNCMom15, UMNUNCChild15) - Ingredient information and nutrient calculations generated by NDSR on data given during the DSAM (Dietary Supplement Assessment Module) portion of the diet recall database are included. Outputs are generated for supplements at the 24 hour intake level as well as the 30 day intake level.
     1. DSAM 24-hour supplement intake (14) – output at the 24-hour level for dietary supplements
     2. DSAM 30-day supplement intake (15) – output at the averaged 30-day level for dietary supplements

1. The tables below provide an overview of energy intake as well as certain macronutrients that may be of interest to the BCP study (data generated from Intake Properties, File 04).

Mother Records

Only data with dates of intake from July 10th 2018 through October 4th 2018 are included in this data set. The following table is a summary of total energy and select nutrients for this data set.

This includes data for 17 Mother participants (17 records).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Total Kcal (g) | Total Fat (g) | Total Carbohydrate (g) | Total Protein (g) | Total Dietary Fiber (g) |
| 1935 ± 628 | 83 ± 33 | 215 ± 82 | 79 ± 33 | 20 ± 8 |

Daily total mean intake (+/- standard deviation).

Child Records

Only data with dates of intake from April 15th 2018 through October 25th 2018 are included in this data set. The following table is a summary of total energy and select nutrients for this data set.

This includes data for 67 Child participants (117 records).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Energy (kcal) | Total Fat (g) | Total Carbohydrate (g) | Total Protein (g) | Total Dietary Fiber (g) |
| 915 ± 510 | 36 ± 21 | 117 ± 69 | 34 ± 23 | 9 ± 6 |

Daily total mean intake (+/- standard deviation).

The NCC NDSR 2017 Manual can be accessed via this [link](https://drive.google.com/file/d/0B7tgPhfpOAbTZUloa0J5Y1VKb2c/view) and contains detailed information in regards to data files received. All descriptions of output files were obtained from the NCC 2017 Manual.

## Methods

1. As described in the contract, the core worked to enter 24-hour dietary food records as provided to the Core from the BCP staff. Hard copies of food records were given to the Core and entered by Core staff into NDSR 2017.
2. The Core maintained a shared worksheet with BCP staff where data entry questions and possible solutions were posted and then answered by the BCP staff. Core staff were instructed to post data entry questions and possible solutions for any part of the food record or data entry process that was in question. BCP staff answered/approved the questions/solutions via the shared document and Core staff then updated each food record accordingly.

## Diet data quality assurance

1. For quality assurance we employed a three layer method for cleaning the diet data.
   1. The first layer begins immediately following the data entry. The interviewer reviews the entire recall, resolves any errors or unknown foods and corrects all meal and food notes.
   2. The second layer of cleaning occurs once all project data has been entered and includes a check of a random 10% of all records. If any data is found to be questionable at this time, the data is checked against the food record and a decision on how to handle the food or meal in question is made by the QA Project Leader.
   3. The third layer includes running outputs and scanning and resolving any outliers. For foods that fall beyond outlier cutoffs at the food and daily level, further investigation by QA research staff is required. QA staff review the food and or record in NDSR and make one of the following decisions (See section 2 in Quality Assurance for percent of records cleaned):
      1. If food amount entered conflicts with food record notes, food amount will be change to reflect match note in the food record.
      2. If food amount matches note made by the interviewer in food record, no change is made.
      3. If daily records outside cutoffs have supporting recall header or food record notes, no changes are made.
      4. If daily records outside cutoffs do not have supporting recall header or food details, another recall from that participant will be reviewed to determine if there is similar intake. If no other recall is available, interviewer will be consulted and QA project leader will make final decision to modify record or not.

For BCP data the following cutoffs were used when scanning the output files:

* + 1. Mother Cutoffs:
       1. Single food items greater than 400 Kcal, 25 g of fat, or 500g.
       2. Daily totals less than 1307 kcal (daily mean intake plus one standard deviation).
       3. Daily totals greater than 2563 Kcal (daily mean intake plus one standard deviation).
    2. Child Cutoffs:
       1. Single food items greater than 200 Kcal, 10 g of fat, or 200g.
       2. Daily totals less than 405 kcal (daily mean intake minus one standard deviation).
       3. Daily totals greater than 1426 Kcal (daily mean intake plus one standard deviation).

1. For the current BCP Mother data 297 single foods were reviewed:

* 18 were found to be above the cutoff of 500 grams, of these 0 were modified.
* 17 were found to be above the cutoff of 400kcal, of these 0 were modified.
* 13 were found to be above the cutoff of 25g fat, of these 0 were modified.

1. For the current BCP Child data 1855 single foods were reviewed:

* 74 were found to be above the cutoff of 200 grams, of these 0 were modified.
* 69 were found to be above the cutoff of 200kcal, of these 0 were modified.
* 71 were found to be above the cutoff of 10g fat, of these 0 were modified.

1. For the current BCP Mother data, 17 daily records were reviewed. All records found to be one standard deviation above or below the mean kcal were reviewed.

* 3 records were found to be above the 2563 kcal cutoff, no records were modified.
* 3 records were found to be below the 1307 kcal cutoff, no records were modified.

1. For the current BCP Child data, 113 daily records were reviewed. All records found to be one standard deviation above or below the mean kcal were reviewed.

* 18 records were found to be above the 1426 kcal cutoff, 1 record was modified.
* 12 records were found to be below the 405 kcal cutoff, no records were modified.

1. All DSAM records were checked at both the 24-hour level and 30-day level for accurateness: times taken (occurrences), total taken (amount), and, taken for (duration).
2. For the current BCP Mother data 16 supplements were reported at the 24-hour level and 16 supplements were reported at the 30-day level.
   1. No errors were found at the 24-hour level for the 24 reported supplements.
   2. No errors were found at the 30-day level for the 24 reported supplements.
3. For the current BCP Child data 21 supplements were reported at the 24-hour level and 21 supplements were reported at the 30-day level.
   1. No errors were found at the 24-hour level for the 24 reported supplements.
   2. No errors were found at the 30-day level for the 24 reported supplements.

## Analysis

1. NDSR provides some [SAS files](http://www.ncc.umn.edu/healthy-eating-index-hei/) to assist with analyzing your data. Please notify Joy Black ([joy\_black@unc.edu](mailto:joy_black@unc.edu)) if you would like to have access to the SAS program files.
2. Should you need further help with analyzing your data, please contact NORC Director:

Kim Truesdale, PhD

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(919) 966-2327

## To cite

1. *In order to maintain the overall Nutrition Obesity Research Center funding, it is very important that you please cite our grant in any published papers.* To assist with this goal, please use the following options:
   1. The UNC-CH, NORC – Diet and Physical Activity Core with a grant from the National Institute of Health (DK56350).
   2. Funding: The Diet and Physical Activity Core of the Nutrition Obesity Research Center at UNC; Grant Number: DK56350
   3. Funding: National Institutes of Health (DK56350)
   4. **X** study was partially funded by UNC Nutrition Obesity Research Center at UNC; grant DK56350
   5. Grant support: DK56350
2. When writing your methods section or anywhere you feel the need to recognize the software used, we encourage you to use either statement:
   1. Dietary intake data were collected and analyzed using Nutrition   
           Data System for Research software version \_\_\_\_, (date) developed   
           by the Nutrition Coordinating Center (NCC), University of   
           Minnesota, Minneapolis, MN.

OR if multiple versions were used -

* 1. To reflect the marketplace throughout the study, dietary intake   
          data were collected and analyzed using Nutrition Data System for   
          Research software version \_\_\_\_ and \_\_\_\_  developed by the   
          Nutrition Coordinating Center (NCC), University of Minnesota,   
          Minneapolis, MN. Final calculations were completed using NDSR   
          version \_\_\_\_ (date). The NDSR time-related database updates   
          analytic data while maintaining nutrient profiles true to the   
          version used for data collection.