

```

/*
PURPOSE:          To demonstrate computation of DASH component scores and total score.
Higher scores
                    indicate closer conformance to a popular interpretation of
the DASH diet (Fung 2008).

                    Please refer to corresponding ReadMe file.
*/

```

```

* (1) Construct DASH components based on WHI FFQ data (MPEDs or nutrients);
*       Assumes inData1 contains all necessary FFQ variables;
DATA inData2;
  SET inData1;

  * Fruit;
  DASH1 = F_TOTAL ;

  * Vegetables;
  DASH2 = (V_TOTAL - V_POTATO) ;

  * Nuts;
  DASH3 = SUM(M_SOYESM, M_NUTSD, LEGUMES*(1/0.25)) ;

  * Whole grains;
  DASH4 = G_WHL;

  * Low fat dairy;
  * Algorithm for construct based on
https://www.whi.org/researchers/data/Documents/SAS%20Code%20for%20computing%20DASH%20dairy.pdf ;
  * Low-fat Milk Beverages usually (yes/no);
  if MILKFAT in (2,3,4) then lfdairy1 = 1; else lfdairy1 = 0;
  * Low-fat milk on cereal (all the time, half the time, never).
  Participant could mark one or two types of milk used on cereal.;
  if (MLK2 = 1 or MLK1 = 1 or MLKSKIM = 1) and
NMISS(MLKCRM,MLKWHOL,MLKEVAP,MLKSOY,MLKNDCRM) = 5 then lfdairy2 = 1;
  else if (MLK2 = 1 or MLK1 = 1 or MLKSKIM = 1) and
NMISS(MLKCRM,MLKWHOL,MLKEVAP,MLKSOY,MLKNDCRM) < 5 then lfdairy2 = 0.5;
  else lfdairy2 = 0;
  * Low-fat milk in coffee (all the time, half the time, never).
  Participant could mark one or two types of milk/creamer used in coffee or tea.;
  if (MLKC2 = 1 or MLKC1 = 1 or MLKCSKIM = 1) and
NMISS(MLKCCRM,MLKCWHOL,MLKCEVAP,MLKCSOY,MLKCNDRCR) = 5 then lfdairy3 = 1;
  else if (MLKC2 = 1 or MLKC1 = 1 or MLKCSKIM = 1) and
NMISS(MLKCCRM,MLKCWHOL,MLKCEVAP,MLKCSOY,MLKCNDRCR) < 5 then lfdairy3 = 0.5;
  else lfdairy3 = 0;
  * Compute low fat dairy group: low-fat milk (total cup-servings from beverages, on
cereal, or in coffee/tea) + low-fat cottage cheese + non-fat cheese +reduced-fat
cheese + non-fat

```

```

    yogurt + low-fat or non-fat frozen desserts ;
    DASH5 = lfdairy1* MLKDRNK + (1/2)*lfdairy2* MLKCERL + (1/16)*lfdairy3* CREAM +
          LFCOTCH + NFCHEES + LFCHEES + NFYOGUR + LFDESST;

* Sodium;
DASH6 = f60sodum;

* Red/processed meat;
DASH7 = M_MEAT + M_FRANK + M_ORGAN;

* Sweetened beverages;
DASH8 = (POP*1.5) + (KOOLAID*0.75);
RUN;

*****
*****;
* (2) Compute quintile cutpoints at enrollment of study cohort;
*   NOTE: Study cohort (e.g., WHI OS) will depend on research objectives. ;
proc univariate data=inData2 ;
  WHERE f60vy EQ 0 ;
  var DASH1 DASH2 DASH3 DASH4 DASH5 DASH6 DASH7 DASH8;
  output out=temp pctlpts=20 40 60 80 pctlpre=DASH1_ DASH2_ DASH3_ DASH4_ DASH5_
DASH6_ DASH7_ DASH8_ ;
run;
PROC TRANSPOSE DATA = temp OUT = temp2 name=cutpoint prefix=P; RUN;
data _null_;
  set temp2;
  call symputx(cutpoint,p1);
run;
%put &DASH1_20 &DASH1_40 &DASH1_60 &DASH1_80 &DASH6_20 &DASH6_40 &DASH6_60 &DASH6_80
;

*****
*****;
* (3) Code DASH dichotomous components;
data outData;
  set inData2;

  * Fruit;
  IF . < DASH1 < &DASH1_20 THEN DASH1_FRUIT =
1;
  ELSE IF &DASH1_20 <= DASH1 < &DASH1_40 THEN DASH1_FRUIT = 2;
  ELSE IF &DASH1_40 <= DASH1 < &DASH1_60 THEN DASH1_FRUIT = 3;
  ELSE IF &DASH1_60 <= DASH1 < &DASH1_80 THEN DASH1_FRUIT = 4;
  ELSE IF &DASH1_80 <= DASH1 THEN DASH1_FRUIT =
5;
  ELSE;

  * Vegetables;

```

```

IF . < DASH2 < &DASH2_20 THEN DASH2_VEG = 1;
ELSE IF &DASH2_20 <= DASH2 < &DASH2_40 THEN DASH2_VEG = 2;
ELSE IF &DASH2_40 <= DASH2 < &DASH2_60 THEN DASH2_VEG = 3;
ELSE IF &DASH2_60 <= DASH2 < &DASH2_80 THEN DASH2_VEG = 4;
ELSE IF &DASH2_80 <= DASH2 THEN DASH2_VEG = 5;
ELSE;

* Nuts;
IF . < DASH3 < &DASH3_20 THEN DASH3_NUT = 1;
ELSE IF &DASH3_20 <= DASH3 < &DASH3_40 THEN DASH3_NUT = 2;
ELSE IF &DASH3_40 <= DASH3 < &DASH3_60 THEN DASH3_NUT = 3;
ELSE IF &DASH3_60 <= DASH3 < &DASH3_80 THEN DASH3_NUT = 4;
ELSE IF &DASH3_80 <= DASH3 THEN DASH3_NUT = 5;
ELSE;

* Whole grains;
IF . < DASH4 < &DASH4_20 THEN DASH4_WGRAINS =
1;
ELSE IF &DASH4_20 <= DASH4 < &DASH4_40 THEN DASH4_WGRAINS = 2;
ELSE IF &DASH4_40 <= DASH4 < &DASH4_60 THEN DASH4_WGRAINS = 3;
ELSE IF &DASH4_60 <= DASH4 < &DASH4_80 THEN DASH4_WGRAINS = 4;
ELSE IF &DASH4_80 <= DASH4 THEN DASH4_WGRAINS =
5;
ELSE;

* Low fat dairy;
IF . < DASH5 < &DASH5_20 THEN DASH5_LFDAIRY =
1;
ELSE IF &DASH5_20 <= DASH5 < &DASH5_40 THEN DASH5_LFDAIRY = 2;
ELSE IF &DASH5_40 <= DASH5 < &DASH5_60 THEN DASH5_LFDAIRY = 3;
ELSE IF &DASH5_60 <= DASH5 < &DASH5_80 THEN DASH5_LFDAIRY = 4;
ELSE IF &DASH5_80 <= DASH5 THEN DASH5_LFDAIRY =
5;
ELSE;

* Sodium;
IF . < DASH6 < &DASH6_20 THEN DASH6_SODIUM =
5;
ELSE IF &DASH6_20 <= DASH6 < &DASH6_40 THEN DASH6_SODIUM = 4;
ELSE IF &DASH6_40 <= DASH6 < &DASH6_60 THEN DASH6_SODIUM = 3;
ELSE IF &DASH6_60 <= DASH6 < &DASH6_80 THEN DASH6_SODIUM = 2;
ELSE IF &DASH6_80 <= DASH6 THEN DASH6_SODIUM =
1;
ELSE;

* Red meat;
IF . < DASH7 < &DASH7_20 THEN DASH7_REDMEAT =
5;
ELSE IF &DASH7_20 <= DASH7 < &DASH7_40 THEN DASH7_REDMEAT = 4;
ELSE IF &DASH7_40 <= DASH7 < &DASH7_60 THEN DASH7_REDMEAT = 3;

```

```

        ELSE IF &DASH7_60 <= DASH7 < &DASH7_80          THEN DASH7_REDMEAT = 2;
        ELSE IF &DASH7_80 <= DASH7                        THEN DASH7_REDMEAT =
1;
    ELSE;

    * Sweet beverages;
    * NOTE: 20 & 40%-ile both equal zero in full cohort (OS + CT);
    IF DASH8 EQ &DASH8_20                                  THEN
DASH8_SWEETB = 5;
        ELSE IF &DASH8_40 < DASH8 < &DASH8_60          THEN DASH8_SWEETB = 3;
        ELSE IF &DASH8_60 <= DASH8 < &DASH8_80        THEN DASH8_SWEETB = 2;
        ELSE IF &DASH8_80 <= DASH8                      THEN DASH8_SWEETB =
1;
    ELSE;

    * Compute DASH total score;
    DASH_TOTAL_SCORE = DASH1_FRUIT + DASH2_VEG + DASH3_NUT + DASH4_WGRAINS +
DASH5_LFDAIRY +
                        DASH6_SODIUM + DASH7_REDMEAT + DASH8_SWEETB;

    LABEL DASH_TOTAL_SCORE          = 'Total DASH score'
          DASH1_FRUIT                = 'DASH component 1 fruits'
          DASH2_VEG                  = 'DASH component 2 vegetables'
          DASH3_NUT                  = 'DASH component 3 nuts'
          DASH4_WGRAINS              = 'DASH component 4 whole grains'
          DASH5_LFDAIRY              = 'DASH component 5 low fat dairy'
          DASH6_SODIUM               = 'DASH component 6 sodium'
          DASH7_REDMEAT              = 'DASH component 7 red meat'
          DASH8_SWEETB               = 'DASH component 8 sweetened beverages';

    RUN;

```