

## **Derived Variables–Nutritional Risk (NUR)**

### **(Tracking and Comprehensive Assessments)**

Nutritional risk is measured in the CLSA using AB SCREEN™ II (Abbreviated Seniors in the Community Risk Evaluation for Eating and Nutrition II) (1). This tool consists of 8 questions asking about eating habits on a typical day. The CLSA modified the administration of two items on the AB SCREEN™ II; the questions about weight change and meal preparation are asked in multiple parts.

There are two derived variables (DVs) in the NUR module: the AB SCREEN™II nutritional risk score, and an indicator of high nutritional risk. These are both determined using the scoring guide provided with the AB SCREEN™ II tool.

For the purposes of the CLSA, when there are missing items, the available partial information is used to determine whether a participant is at high nutritional risk or not, if it is feasible to do so. To do this, we consider the possible values of the missing items and determine if the current classification could be altered if those missing values were known. If it could not, then the classification of nutritional risk is made. If it could be altered, the classification of nutritional risk is set to missing.

These DVs are created for participants in both the Tracking and Comprehensive assessments, who have completed the Maintaining Contact Questionnaire (MCQ). Since the MCQ was conducted over the phone for both the Tracking and Comprehensive participants, there is no differentiation in the variable names, which end in ‘MCQ’ for both groups.

- (1) Keller HH, Goy R, Kane SL. Validity and reliability of SCREEN II (Seniors in the community: risk evaluation for eating and nutrition, Version II). *Eur J Clin Nutr.* 2005 Oct; 59(10):1149-57.

**Conditions of Use:** Users of the AB SCREEN™ II data must include the following statement in all publications: **“The AB SCREEN™ II assessment tool is owned by Dr. Heather Keller. Use of the AB SCREEN™ II assessment tool was made under license from the University of Guelph.”**

#### **1) The AB SCREEN™ II Nutritional Risk Score -Temporary Variable**

**Derived Variable Name:** NUR\_TDSCR\_MCQ

**Description:** This variable calculates the overall AB SCREEN™ II nutritional risk score by summing up the scores of the individual items. It ignores missing items and cannot be interpreted as is. This variable is not included in the CLSA dataset.

**Based on:** NUR\_GLSWT\_MCQ, NUR\_WTGL\_MCQ, NUR\_SKPMLS\_MCQ, NUR\_APPTT\_MCQ, NUR\_SWLLFD\_MCQ, NUR\_FRTVEG\_MCQ, NUR\_DRKFLD\_MCQ, NUR\_MLSMN\_MCQ, NUR\_MLPREP\_MCQ, NUR\_MLPREPOT\_MCQ, NUR\_CKMEALS\_MCQ

**Temporary Reformat:** In order to calculate the overall ABSCREEN™ II score, we must first assign the correct score to each individual item, as indicated in the scoring guide. These temporary reformatted variables are called NUR\_TWC\_MCQ, NUR\_TSKPMLS\_MCQ, NUR\_TAPPTT\_MCQ, NUR\_TSWLLFD\_MCQ, NUR\_TFRTVEG\_MCQ, NUR\_TDRKFLD\_MCQ, NUR\_TMLSMN\_MCQ, and NUR\_TMP\_MCQ. NUR\_TWC\_MCQ represents the score regarding weight change, and NUR\_TMP\_MCQ represents the score regarding meal preparation.

Value	Condition(s)
NUR_TWC_MCQ = 8	NUR_GLSWT_MCQ=3 or NUR_WTGL_MCQ = 4
NUR_TWC_MCQ = 4	NUR_WTGL_MCQ = 3
NUR_TWC_MCQ = 2	NUR_WTGL_MCQ = 2
NUR_TWC_MCQ = 0	All other combinations of NUR_GLSWT_MCQ and NUT_WTGL_MCQ
NUR_TSKPMLS_MCQ = 8	NUR_SKPMLS_MCQ = (4, 5)
NUR_TSKPMLS_MCQ = 4	NUR_SKPMLS_MCQ = 3
NUR_TSKPMLS_MCQ = 2	NUR_SKPMLS_MCQ = 2
NUR_TSKPMLS_MCQ = 0	NUR_SKPMLS_MCQ = (1, 8, 9, -8)
NUR_TAPPTT_MCQ = 8	NUR_APPTT_MCQ = 1
NUR_TAPPTT_MCQ = 6	NUR_APPTT_MCQ = 2
NUR_TAPPTT_MCQ = 4	NUR_APPTT_MCQ = 3
NUR_TAPPTT_MCQ = 0	NUR_APPTT_MCQ =(4, 8, 9, -8)
NUR_TSWLLFD_MCQ = 8	NUR_SWLLFD_MCQ = 4
NUR_TSWLLFD_MCQ = 6	NUR_SWLLFD_MCQ = 3
NUR_TSWLLFD_MCQ = 2	NUR_SWLLFD_MCQ = 2



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NUR_TSWLLFD_MCQ = 0	NUR_SWLLFD_MCQ = (1, 8, 9, -8)
NUR_TFRTVEG_MCQ = 4	NUR_FRTVEG_MCQ = (1, 2, 3)
NUR_TFRTVEG_MCQ = 3	NUR_FRTVEG_MCQ = 4
NUR_TFRTVEG_MCQ = 2	NUR_FRTVEG_MCQ = 5
NUR_TFRTVEG_MCQ = 1	NUR_FRTVEG_MCQ = 6
NUR_TFRTVEG_MCQ = 0	NUR_FRTVEG_MCQ = (7,8, 9, -8)
NUR_TDRKFLD_MCQ = 4	NUR_DRKFLD_MCQ = 1
NUR_TDRKFLD_MCQ = 3	NUR_DRKFLD_MCQ = 2
NUR_TDRKFLD_MCQ = 2	NUR_DRKFLD_MCQ = 3
NUR_TDRKFLD_MCQ = 1	NUR_DRKFLD_MCQ = 4
NUR_TDRKFLD_MCQ = 0	NUR_DRKFLD_MCQ = (5,8, 9, -8)
NUR_TMLSMN_MCQ = 4	NUR_MLSMN_MCQ = 1
NUR_TMLSMN_MCQ = 3	NUR_MLSMN_MCQ = 2
NUR_TMLSMN_MCQ = 2	NUR_MLSMN_MCQ = 3
NUR_TMLSMN_MCQ = 0	NUR_MLSMN_MCQ = (4, 5, 8, 9, -8)
NUR_TMP_MCQ = 4	NUR_MLPREP_MCQ = 1 or NUR_MLPREPOT_MCQ = 1
NUR_TMP_MCQ = 2	NUR_MLPREP_MCQ = 2
NUR_TMP_MCQ = 0	NUR_MLPREP_MCQ =(3, 8, 9, -8) or NUR_MLPREPOT_MCQ = (2, 8, 9, -8)

**Derived Variable Specifications:**

Value	Description	Notes
NUR_TWC_MCQ+ NUR_TSKPMLS_MCQ+ NUR_TAPPTT_MCQ + NUR_TSWLLFD_MCQ+ NUR_TFRTVEG_MCQ+ NUR_TDRKFLD_MCQ+ NUR_TMLSMN_MCQ + NUR_TMP_MCQ	AB SCREEN™ II Nutritional risk score	(min:0 ; max: 48)

**2) Maximum Possible Score of Missing Items on the AB SCREEN™ II - Temporary Variable**

**Variable Name:** NUR\_MXSCRMIS\_MCQ

**Description:** This variable calculates the maximum possible total score of the missing items on the AB SCREEN™ II, and is not included in the CLSA dataset.

**Based on:** NUR\_GLSWT\_MCQ, NUR\_WTGL\_MCQ, NUR\_SKPMLS\_MCQ, NUR\_APPTT\_MCQ, NUR\_SWLLFD\_MCQ, NUR\_FRTVEG\_MCQ, NUR\_DRKFLD\_MCQ, NUR\_MLSMN\_MCQ, NUR\_MLPREP\_MCQ, NUR\_MLPREPOT\_MCQ, ADM\_COMPLETE\_MCQ, NUR\_CKMEALS\_MCQ

**Temporary Indicator Variables:** In order to calculate the maximum possible total score of the missing items on the AB SCREEN™ II, we first create 8 temporary indicator variables, NUR\_IMWC\_MCQ, NUR\_IMSKPMLS\_MCQ, NUR\_IMAPPTT\_MCQ, NUR\_IMSWLLFD\_MCQ, NUR\_IMFRTVEG\_MCQ, NUR\_IMDRKFLD\_MCQ, NUR\_IMMLSMN\_MCQ, and NUR\_IMMP\_MCQ, which indicate if a response is missing for each of the 8 items in the tool. NUR\_IMWC\_MCQ indicates if the weight change item is missing, and NUR\_IMMP\_MCQ if the meal preparation item is missing. These indicator variables are not included in the CLSA dataset.

Value	Condition(s)	Description
NUR_IMWC_MCQ = 1	ADM_COMPLETE_MCQ=1 and  (NUR_GLSWT_MCQ = (8, 9, -8) or(NUR_GLSWT_MCQ≠ 3 and NUR_WTGL_MCQ = (8, 9, -8))	Missing value
NUR_IMWC_MCQ = 0	ADM_COMPLETE_MCQ=1 and  ((NUR_GLSWT_MCQ =( 1, 2) and NUR_WTGL_MCQ ≠ (8, 9, -8)  or  (NUR_GLSWT_MCQ =3 ))	Not missing value
NUR_IMSKPMLS_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_SKPMLS_MCQ = (8, 9, -8)	Missing value
NUR_IMSKPMLS_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_SKPMLS_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMAPPTT_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_APPTT_MCQ = (8, 9, -8)	Missing value
NUR_IMAPPTT_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_APPTT_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMSWLLFD_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_SWLLFD_MCQ = (8, 9, -8)	Missing value
NUR_IMSWLLFD_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_SWLLFD_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMFRTVEG_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_FRTVEG_MCQ = (8, 9, -8)	Missing value
NUR_IMFRTVEG_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_FRTVEG_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMDRKFLD_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_DRKFLD_MCQ = (8, 9, -8)	Missing value
NUR_IMDRKFLD_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_DRKFLD_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMMLSMN_MCQ = 1	ADM_COMPLETE_MCQ=1 and NUR_MLSMN_MCQ = (8, 9, -8)	Missing value
NUR_IMMLSMN_MCQ = 0	ADM_COMPLETE_MCQ=1 and NUR_MLSMN_MCQ ≠ (8, 9, -8)	Not missing value
NUR_IMMP_MCQ = 1	ADM_COMPLETE_MCQ=1 and ((NUR_CKMEALS_MCQ = -8or (NUR_CKMEALS_MCQ = 1and NUR_MLPREP_MCQ = (8, 9, -8)) or (NUR_CKMEALS_MCQ = (2, 8, 9) and NUR_MLPREPOT_MCQ = (8, 9, -8)))	Missing value
NUR_IMMP_MCQ = 0	ADM_COMPLETE_MCQ=1 and ((NUR_CKMEALS_MCQ = 1andNUR_MLPREP_MCQ ≠ (8, 9, -8)) or (NUR_CKMEALS_MCQ = (2, 8, 9) and NUR_MLPREPOT_MCQ ≠ (8, 9, -8)))	Not missing value

**Variable Specifications:**

Value	Description	Notes
8*NUR_IMWC_MCQ + 8*NUR_IMSKPMLS_MCQ + 8*NUR_IMAPPTT_MCQ + 8*NUR_IMSWLLFD_MCQ + 4*NUR_IMFRTVEG_MCQ + 4*NUR_IMDRKFLD_MCQ + 4*NUR_IMMLSMN_MCQ + 4*NUR_IMMP_MCQ	Maximum possible score of the missing items on AB SCREEN™ II	(min: 0; max: 48)

**3) High Nutritional Risk Indicator**

**Derived Variable Name:** NUR\_DHNR\_MCQ

**Description:** This variable is an indicator of nutritional risk. The AB SCREEN™ II high nutritional risk score cut-off value of less than 38 was provided by the authors of the AB SCREEN™ II tool (1). The maximum possible score of the missing items is also considered in making this classification.

This DV is similar to the variable “NURDHNR” in Statistics Canada’s Canadian Community Health Survey (CCHS) – Healthy Aging.

**Based on:** NUR\_TDSCR\_MCQ, NUR\_MXSCRMIS\_MCQ

**Derived Variable Specifications:**

Value	Condition(s)	Description
Blank	ADM_COMPLETE_MCQ=0	DV not created for participants who did not complete MCQ
0	ADM_COMPLETE_MCQ=1 and NUR_TDSCR_MCQ ≥ 38	Not at high nutritional risk
1	ADM_COMPLETE_MCQ=1 and (NUR_TDSCR_MCQ+NUR_MXSCRMIS_MCQ)<38	High nutritional risk
9	ADM_COMPLETE_MCQ=1 and NUR_TDSCR_MCQ < 38 and (NUR_TDSCR_MCQ+ NUR_MXSCRMIS_MCQ) ≥ 38	Inconclusive due to missing values

#### 4) The AB SCREEN™ II Nutritional Risk Score

**Derived Variable Name:** NUR\_DSCR\_MCQ

**Description:** This variable calculates the overall AB SCREEN™ II nutritional risk score by summing up the scores of the individual items (1). If there are any missing items, the score is missing. However, we distinguish between participants with missing items who have provided sufficient information to obtain a conclusive nutritional risk classification, and those who have not.

This DV is similar to the variable “NURDSCR” in Statistics Canada’s Canadian Community Health Survey (CCHS) – Healthy Aging.

**Based on:** NUR\_TDSCR\_MCQ, NUR\_MXSCRMIS\_MCQ, NUR\_DHNR\_MCQ

##### Derived Variable Specifications:

Value	Condition(s)	Description	Notes
NUR_TDSCR_MCQ	NUR_MXSCRMIS_MCQ =0	AB SCREEN™ II nutritional risk score	(min: 0; max: 48)
99	NUR_MXSCRMIS_MCQ > 0 and NUR_DHNR_MCQ =9	At least one missing item and inconclusive high nutritional risk classification	
-88	NUR_MXSCRMIS_MCQ > 0 and NUR_DHNR_MCQ≠9	At least one missing item but conclusive high nutritional risk classification	