Dataset Integrity Check for PROBE Total Bilirubin (ChiLDReN)

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Contents

1 Standard Disclaimer

The intent of this DSIC is to provide confidence that the data distributed by the NIDDK repository is a true copy of the study data. Our intent is not to assess the integrity of the statistical analyses reported by study investigators. As with all statistical analyses of complex datasets, complete replication of a set of statistical results should not be expected in secondary analysis. This occurs for a number of reasons including differences in the handling of missing data, restrictions on cases included in samples for a particular analysis, software coding used to define complex variables, etc. Experience suggests that most discrepancies can ordinarily be resolved by consultation with the study data coordinating center (DCC), however this process is labor-intensive for both DCC and Repository staff. It is thus not our policy to resolve every discrepancy that is observed in an integrity check. Specifically, we do not attempt to resolve minor or inconsequential discrepancies with published results or discrepancies that involve complex analyses, unless NIDDK Repository staff suspect that the observed discrepancy suggests that the dataset may have been corrupted in storage, transmission, or processing by repository staff. We do, however, document in footnotes to the integrity check those instances in which our secondary analyses produced results that were not fully consistent with those reported in the target publication.

2 Study Background

This is a multi-center project to establish a prospective database of clinical information and a repository of blood and tissue samples from children with diagnoses of neonatal liver diseases, such as biliary atresia and neonatal hepatitis, in order to perform research in these liver problems. Children were screened and enrolled at presentation at the participating pediatric liver sites. Subjects diagnosed with biliary atresia were followed intensively for the first year, at 18 months of age, and then annually up to 15 years of age. Other subjects diagnosed with cholestasis were followed on the same schedule; if there was complete (clinical and biochemical) resolution of their underlying liver disease off all therapy, there was one follow up visit within one year (preferably scheduled at the time of the next planned follow up visit or at 12 months of age, whichever was later) for data collection and to obtain blood samples. The development of a serum and tissue bank of specimens from children with various neonatal cholestatic disorders are used for future investigations into the etiology and pathogenesis of hepatobiliary injury in the infant.

3 Archived Datasets

All the SAS data files, as provided by the Data Coordinating Center (DCC), are located in the PROBE folder in the “ChiLDReN_Shneider_PROBE_TotalBilirubin Dataset” data package. For this replication, variables were taken from the “baneuro_raw_14mar19.sas7bdat” dataset.

4 Statistical Methods

Analyses were performed to duplicate results for the data published by James E. Squires et al [1] in Journal of Pediatric Gastroenterology and Nutrition 2020. To verify the integrity of the dataset, descriptive statistics were computed.

5 Results

For Table 1 in the publication [1], **Demographic and medical characteristics for neurocognitive testing participants by age,** Table A lists the variables that were used in the replication and Table B compares the results calculated from the archived data files to the results published in Table 1. The results of the replication are almost an exact match to the published results.

6 Conclusions

The NIDDK repository is confident that the PROBE data files to be distributed are a true copy of the study data.

7 References

[1] James E. Squires, Vicky Lee Ng, Kieran Hawthorne, Lisa L. Henn, Lisa G. Sorensen, Emily M. Fredericks, Estella M. Alonso, Karen F. Murray, Kathleen M. Loomes, Saul J. Karpen, Laurel A. Cavallo, Jean P. Molleston, Jorge A. Bezerra, Philip Rosenthal, Robert H. Squires, Kasper S. Wang, Kathleen B. Schwarz, Ronen Arnon, John C. Magee, and Ronald J. Sokol, for the Childhood Liver Disease Research Network (ChiLDReN). Neurodevelopmental Outcomes in Preschool and School Aged Children With Biliary Atresia and Their Native Liver. Journal of Pediatric Gastroenterology and Nutrition, Jan 2020, Vol. 70: 79–86.

Table A: Variables used to replicate Table 1: Demographic and medical characteristics for neurocognitive testing participants by age

Table Variable	dataset.variable
Age at HPE (months)	baneuro_raw_14mar19.AGE_HPE_M
Age at testing (years)	baneuro_raw_14mar19.AGE_TEST_Y
ALT (U/L)	baneuro_raw_14mar19.ALTUNITSL
Ascites (ever)	baneuro_raw_14mar19.ASCITES
AST (U/L)	baneuro_raw_14mar19.ASTUNITSL
BASM	baneuro_raw_14mar19.BASM
GI bleed (ever)	baneuro_raw_14mar19.BLEED
Cholangitis (ever)	baneuro_raw_14mar19.CHOLANGITIS
Highest Household Education	baneuro_raw_14mar19.DEGREE
GGTP (U/L)	baneuro_raw_14mar19.GGTPUNITSL
Height z-score	baneuro_raw_14mar19.HAZ
Hemoglobin (g/dl)	baneuro_raw_14mar19.HGBGDL
Hispanic ethnicity	baneuro_raw_14mar19.HISPANIC
INR	baneuro_raw_14mar19.INR
Portal hypertension (ever)	baneuro_raw_14mar19.PHT
Platelet count	baneuro_raw_14mar19.PLATELETSCNT
Race	baneuro_raw_14mar19.RACE
Sex	baneuro_raw_14mar19.SEX
Splenomegaly (ever)	baneuro_raw_14mar19.SPLENOMEGALY
Successful HPE	baneuro_raw_14mar19.SUCCESS
Thrombocytopenia (ever)	baneuro_raw_14mar19.THROMBOCYTOPENIA
Total bilirubin (mg/dl)	baneuro_raw_14mar19.TOTALBILIRUBINMGDL
Esophageal or gastric varices (ever)	baneuro_raw_14mar19.VARICES
Weight z-score	baneuro_raw_14mar19.WAZ
WBC count	baneuro_raw_14mar19.WBCCNT

Table B-1 (Age 3): Comparison of values computed in integrity check to reference article Table 1 values

		Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff
		N			Stats			percent/SD/ Q1			Q3		
Demographics													
Female sex		69	69	0	28	28	0	41	41	0			
Race	White	69	69	0	42	42	0	61	61	0			
	Black	69	69	0	7	7	0	10	10	0			
	Other	69	69	0	20	20	0	29	29	0			
Hispanic ethnicity		69	69	0	12	12	0	17	17	0			
Highest Household Education	College degree or more	65	69	-4	37	37	0	57	54	3			
BASM syndrome		69	69	0	3	3	0	4	4	0			
Medical history: Age at HPE (months), mean (SD)		69	69	0	1.9	1.9	0	0.7	0.75	-0.05			
Successful HPE		69	69	0	63	63	0	91	91	0			
Cholangitis		69	69	0	34	34	0	49	49	0			
GI bleed		69	69	0	5	5	0	7	7	0			
Ascites		69	69	0	11	11	0	16	16	0			
Splenomegaly		69	69	0	46	46	0	67	67	0			
Thrombocytopenia		69	69	0	37	37	0	54	54	0			
Esophageal or gastric varices		69	69	0	2	2	0	3	3	0			
Portal hypertension		69	69	0	32	32	0	46	46	0			
Measures taken at testing (þ/- 6 months): Age at testing (years), mean (SD)		69	69	0	3	3	0	0.1	0.1	0			
Weight z-score, mean (SD)		67	67	0	0.33	0.5	-0.17	1.06	1.06	0			
Height z-score, mean (SD)		65	65	0	0	0	0	1.04	1.04	0			
Total bilirubin (mg/dL), median (IQR)		65	65	0	0.6	0.6	0	0.3	0.3	0	1	1	0
INR, median (IQR)		52	52	0	1	1	0	1	1	0	1.1	1.1	0
Hemoglobin (g/dL), median (IQR)		60	60	0	12.6	12.6	0	12	12	0	13.4	13.4	0
Platelet count, median (IQR)		60	60	0	177	177	0	118	117.5	0.5	307	306.5	0.5
GGTP, median (IQR)		56	56	0	117	116.5	0.5	22	22	0	287	287	0
ALT, median (IQR)		65	65	0	79	79	0	35	35	0	156	156	0
AST, median (IQR)		64	64	0	76	76	0	48	47.5	0.5	149	148.5	0.5
WBC count, median (IQR)		61	61	0	6.4	6.4	0	4.9	4.9	0	8	8	0

Table B-2 (Age 4): Comparison of values computed in integrity check to reference article Table 1 values

		Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff
		N			Stats			percent/SD/ Q1			Q3		
Demographics													
Female sex		50	50	0	26	26	0	52	52	0			
Race	White	49	50	-1	33	33	0	67	66	1			
	Black	49	50	-1	3	3	0	6	6	0			
	Other	49	50	-1	13	13	0	27	26	1			
Hispanic ethnicity		50	50	0	11	11	0	22	22	0			
Highest Household Education	College degree or more	49	50	-1	32	32	0	65	64	1			
BASM syndrome		50	50	0	2	2	0	4	4	0			
Medical history: Age at HPE (months), mean (SD)		50	50	0	1.9	1.92	-0.02	0.9	0.86	0.04			
Successful HPE		50	50	0	44	44	0	88	88	0			
Cholangitis		50	50	0	26	26	0	52	52	0			
GI bleed		50	50	0	3	3	0	6	6	0			
Ascites		50	50	0	7	7	0	14	14	0			
Splenomegaly		50	50	0	35	35	0	70	70	0			
Thrombocytopenia		50	50	0	26	26	0	52	52	0			
Esophageal or gastric varices		50	50	0	2	2	0	4	4	0			
Portal hypertension		50	50	0	26	26	0	52	52	0			
Measures taken at testing (þ/- 6 months): Age at testing (years), mean (SD)		50	50	0	4	4.04	-0.04	0.1	0.13	-0.03			
Weight z-score, mean (SD)		49	49	0	0.52	0.52	0	0.91	0.91	0			
Height z-score, mean (SD)		50	50	0	0	0	0	0.99	0.99	0			
Total bilirubin (mg/dL), median (IQR)		46	46	0	0.5	0.5	0	0.3	0.3	0	0.7	0.7	0
INR, median (IQR)		37	37	0	1	1	0	1	1	0	1.1	1.1	0
Hemoglobin (g/dL), median (IQR)		47	47	0	12.7	12.7	0	12.2	12.2	0	13.2	13.2	0
Platelet count, median (IQR)		46	46	0	183	182.5	0.5	127	127	0	298	298	0
GGTP, median (IQR)		40	40	0	72	71.5	0.5	24	23.5	0.5	159	158.5	0.5
ALT, median (IQR)		48	48	0	52	52	0	32	31.5	0.5	126	126	0
AST, median (IQR)		48	48	0	59	59	0	43	43	0	108	107.5	0.5
WBC count, median (IQR)		47	47	0	6.8	6.8	0	4.5	4.5	0	8.5	8.5	0

Table B-3 (Age 5): Comparison of values computed in integrity check to reference article Table 1 values

		Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff
		N			Stats			percent/SD/ Q1			Q3		
Demographics													
Female sex		41	41	0	23	23	0	56	56	0			
Race	White	41	41	0	29	29	0	71	71	0			
	Black	41	41	0	1	1	0	2	2	0			
	Other	41	41	0	11	11	0	27	27	0			
Hispanic ethnicity		41	41	0	9	9	0	22	22	0			
Highest Household Education	College degree or more	39	41	-2	25	25	0	64	61	3			
BASM syndrome		41	41	0	1	1	0	2	2	0			
Medical history: Age at HPE (months), mean (SD)		41	41	0	1.9	1.93	-0.03	0.6	0.63	-0.03			
Successful HPE		41	41	0	39	39	0	95	95	0			
Cholangitis		41	41	0	17	17	0	41	41	0			
GI bleed		41	41	0	4	4	0	10	10	0			
Ascites		41	41	0	5	5	0	12	12	0			
Splenomegaly		41	41	0	27	27	0	66	66	0			
Thrombocytopenia		41	41	0	23	23	0	56	56	0			
Esophageal or gastric varices		41	41	0	4	4	0	10	10	0			
Portal hypertension		41	41	0	20	20	0	49	49	0			
Measures taken at testing (þ/- 6 months): Age at testing (years), mean (SD)		41	41	0	5.1	5.06	0.04	0.1	0.09	0.01			
Weight z-score, mean (SD)		41	41	0	0.48	0.48	0	0.92	0.92	0			
Height z-score, mean (SD)		41	41	0	0.14	0.14	0	0.95	0.95	0			
Total bilirubin (mg/dL), median (IQR)		39	39	0	0.6	0.6	0	0.3	0.3	0	0.7	0.7	0
INR, median (IQR)		32	32	0	1.1	1.1	0	1	1	0	1.1	1.1	0
Hemoglobin (g/dL), median (IQR)		37	37	0	13.2	13.2	0	12.5	12.5	0	14	14	0
Platelet count, median (IQR)		37	37	0	199	199	0	110	110	0	270	270	0
GGTP, median (IQR)		34	34	0	35	35	0	19	19	0	81	81	0
ALT, median (IQR)		39	39	0	40	40	0	24	24	0	73	73	0
AST, median (IQR)		39	39	0	54	54	0	41	41	0	67	67	0
WBC count, median (IQR)		37	37	0	5.7	5.7	0	4.4	4.4	0	7.4	7.4	0

Table B-4 (Age 6): Comparison of values computed in integrity check to reference article Table 1 values

		Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff
		N			Stats			percent/SD/ Q1			Q3		
Demographics													
Female sex		37	37	0	20	20	0	54	54	0			
Race	White	37	37	0	26	26	0	70	70	0			
	Black	37	37	0	0	0	0	0	0	0			
	Other	37	37	0	11	11	0	30	30	0			
Hispanic ethnicity		37	37	0	9	9	0	24	24	0			
Highest Household Education	College degree or more	35	37	-2	23	23	0	66	62	4			
BASM syndrome		37	37	0	1	1	0	3	3	0			
Medical history: Age at HPE (months), mean (SD)		37	37	0	2	1.97	0.03	0.7	0.69	0.01			
Successful HPE		37	37	0	35	35	0	95	95	0			
Cholangitis		37	37	0	19	19	0	51	51	0			
GI bleed		37	37	0	3	3	0	8	8	0			
Ascites		37	37	0	6	6	0	16	16	0			
Splenomegaly		37	37	0	24	24	0	65	65	0			
Thrombocytopenia		37	37	0	22	22	0	59	59	0			
Esophageal or gastric varices		37	37	0	5	5	0	14	14	0			
Portal hypertension		37	37	0	18	18	0	49	49	0			
Measures taken at testing (þ/- 6 months): Age at testing (years), mean (SD)		37	37	0	6.1	6.15	-0.05	0.2	0.22	-0.02			
Weight z-score, mean (SD)		36	36	0	0.38	0.38	0	0.95	0.95	0			
Height z-score, mean (SD)		37	37	0	0.18	0.18	0	1.12	1.12	0			
Total bilirubin (mg/dL), median (IQR)		35	34	1	0.5	0.5	0	0.3	0.3	0	0.9	0.9	0
INR, median (IQR)		29	29	0	1.1	1.1	0	1	1	0	1.1	1.1	0
Hemoglobin (g/dL), median (IQR)		34	34	0	13.1	13.1	0	12.1	12.1	0	13.7	13.7	0
Platelet count, median (IQR)		34	34	0	175	175	0	96	96	0	263	263	0
GGTP, median (IQR)		30	30	0	81	80.5	0.5	41	41	0	143	143	0
ALT, median (IQR)		35	35	0	48	48	0	32	32	0	80	80	0
AST, median (IQR)		35	35	0	56	56	0	45	45	0	86	86	0
WBC count, median (IQR)		34	34	0	5.3	5.3	0	4.4	4.4	0	7.1	7.1	0

Table B-5 (Age 8-12): Comparison of values computed in integrity check to reference article Table 1 values

		Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff	Manuscript	DSIC	Diff
		N			Stats			percent/SD/ Q1			Q3		
Demographics													
Female sex		18	18	0	9	9	0	50	50	0			
Race	White	18	18	0	10	10	0	56	56	0			
	Black	18	18	0	1	1	0	6	6	0			
	Other	18	18	0	7	7	0	39	39	0			
Hispanic ethnicity		18	18	0	2	2	0	11	11	0			
Highest Household Education	College degree or more	18	18	0	13	13	0	72	72	0			
BASM syndrome		18	18	0	2	2	0	11	11	0			
Medical history: Age at HPE (months), mean (SD)		18	18	0	1.9	1.86	0.04	0.5	0.55	-0.05			
Successful HPE		18	18	0	17	17	0	94	94	0			
Cholangitis		18	18	0	9	9	0	50	50	0			
GI bleed		18	18	0	2	2	0	11	11	0			
Ascites		18	18	0	1	1	0	6	6	0			
Splenomegaly		18	18	0	14	14	0	78	78	0			
Thrombocytopenia		18	18	0	11	11	0	61	61	0			
Esophageal or gastric varices		18	18	0	1	1	0	6	6	0			
Portal hypertension		18	18	0	10	10	0	56	56	0			
Measures taken at testing (þ/- 6 months): Age at testing (years), mean (SD)		18	18	0	8.3	8.29	0.01	1	0.97	0.03			
Weight z-score, mean (SD)		18	18	0	0.51	0.51	0	0.9	0.9	0			
Height z-score, mean (SD)		18	18	0	0.02	0.02	0	0.74	0.74	0			
Total bilirubin (mg/dL), median (IQR)		16	16	0	0.8	0.8	0	0.4	0.4	0	0.9	0.9	0
INR, median (IQR)		13	13	0	1.1	1.1	0	1	1	0	1.2	1.2	0
Hemoglobin (g/dL), median (IQR)		16	16	0	13.8	13.8	0	12.7	12.7	0	14.2	14.2	0
Platelet count, median (IQR)		16	16	0	164	164	0	68	68	0	260	260	0
GGTP, median (IQR)		15	15	0	58	58	0	19	19	0	155	155	0
ALT, median (IQR)		16	16	0	38	38	0	28	27.5	0.5	84	83.5	0.5
AST, median (IQR)		16	16	0	49	48.5	0.5	35	35	0	91	91	0
WBC count, median (IQR)		16	16	0	5.6	5.6	0	3.4	3.4	0	6.2	6.2	0

Attachment A: SAS Code

```
options nocenter validvarname=upcase nofmterr macrogen;

title '/prj/niddk/ims_analysis/PROBE/prog_intial_analysis/probe.dsic.20200817.sas';
run;

**********;
* INPUT   ;
**********;
libname dat "/prj/niddk/ims_analysis/PROBE/private_orig_data/Squires_Older BA Neuro Submission/";


**********;
* FORMATS ;
**********;
proc format;
 value val
 .     = "no value"
 other = "   value"
 ;

 value sexf
 1= "Male"
 2= "Female"
 ;

 value racef
 1 = "1 White"
 2 = "2 Black"
 3 = "3 Other"
 ;

 value everf
 1 = "Ever"
 ;

run;


*********;
* MACROS ;
*********;

* produce n and %;
%macro npercent(rownum, var, varf, subset, subsetname);
  proc freq data=analy noprint;
    where &subset = 1;
    tables &var/list missing out=tbl1&subsetname;
    format &var &varf..;
```

```
  run;

  data tbl1&subsetname;
    length _VAR_ covarf $100;
    set tbl1&subsetname;
    retain _NOBS_ 0;

    _VAR_ = "&var";
    covarf = put(&var,&varf..);
    rownum = &rownum;

    _NOBS_ = sum(_NOBS_, count);

    if &var not in(0, .);
  run;

  data prnt&subsetname;
    set prnt&subsetname tbl1&subsetname;
  run;

%mend;


%macro univ(rownum, var, subset, subsetname);

  proc univariate data=analy outtable= univ&subsetname noprint;
    where &subset=1 and &var not in(.,0);
    var &var
       ;
  run;

  data univ&subsetname;
    length _VAR_ covarf $100;
    set univ&subsetname;
        covarf = "&subset";
        rownum = &rownum;
  run;

  data prntuniv&subsetname;
    set prntuniv&subsetname univ&subsetname;
  run;

%mend;



data analy;
  set dat.baneuro_raw_14mar19;
  if age = 3 then age_grp3 = 1;
  else if age = 4 then age_grp4 = 1;
  else if age = 5 then age_grp5 = 1;
```

```
  else if age = 6 then age_grp6 = 1;
  else if age in(8, 10, 12) then age_grp7 = 1;

run;

proc contents data=analy;
run;

proc freq data=analy;
  tables age_grp3*age_grp4*age_grp5*age_grp6*age_grp7*AGE /list missing;
run;

proc freq data=analy;
  where age_grp3=1;
  tables sex race HISPANIC DEGREE BASM SUCCESS CHOLANGITIS BLEED ASCITES SPLENOMEGALY THROMBOCYTOPENIA VARICES PHT/missing;
run;


* med, q1, q3;
data prntunivage_3;
 * length _VAR_ $100;
  set _null_;
run;

%univ(6    , AGE_HPE_M            , age_grp3 , Age_3);
%univ(15   , AGE_TEST_Y                  , age_grp3 , Age_3);
%univ(16   , WAZ                  , age_grp3 , Age_3);
%univ(17   , HAZ                  , age_grp3 , Age_3);
%univ(18   , TOTALBILIRUBINMGDL     , age_grp3 , Age_3);
%univ(19   , INR                  , age_grp3 , Age_3);
%univ(20   , HGBGDL                 , age_grp3 , Age_3);
%univ(21   , PLATELETSCNT         , age_grp3 , Age_3);
%univ(22   , GGTPUNITSL                  , age_grp3 , Age_3);
%univ(23   , ALTUNITSL            , age_grp3 , Age_3);
%univ(24   , ASTUNITSL            , age_grp3 , Age_3);
%univ(25   , WBCCNT               , age_grp3 , Age_3);


data prntunivage_4;
 * length _VAR_ $100;
  set _null_;
run;

%univ(6    , AGE_HPE_M             , age_grp4 , Age_4);
%univ(15   , AGE_TEST_Y                   , age_grp4 , Age_4);
%univ(16   , WAZ                   , age_grp4 , Age_4);
%univ(17   , HAZ                   , age_grp4 , Age_4);
%univ(18   , TOTALBILIRUBINMGDL      , age_grp4 , Age_4);
%univ(19   , INR                   , age_grp4 , Age_4);
%univ(20   , HGBGDL                  , age_grp4 , Age_4);
%univ(21   , PLATELETSCNT          , age_grp4 , Age_4);
```

```
%univ(22   , GGTPUNITSL                  , age_grp4 , Age_4);
%univ(23   , ALTUNITSL            , age_grp4 , Age_4);
%univ(24   , ASTUNITSL            , age_grp4 , Age_4);
%univ(25   , WBCCNT               , age_grp4 , Age_4);


data prntunivage_5;
 * length _VAR_ $100;
  set _null_;
run;

%univ(6    , AGE_HPE_M            , age_grp5 , Age_5);
%univ(15   , AGE_TEST_Y                  , age_grp5 , Age_5);
%univ(16   , WAZ                  , age_grp5 , Age_5);
%univ(17   , HAZ                  , age_grp5 , Age_5);
%univ(18   , TOTALBILIRUBINMGDL     , age_grp5 , Age_5);
%univ(19   , INR                  , age_grp5 , Age_5);
%univ(20   , HGBGDL                 , age_grp5 , Age_5);
%univ(21   , PLATELETSCNT         , age_grp5 , Age_5);
%univ(22   , GGTPUNITSL                  , age_grp5 , Age_5);
%univ(23   , ALTUNITSL            , age_grp5 , Age_5);
%univ(24   , ASTUNITSL            , age_grp5 , Age_5);
%univ(25   , WBCCNT               , age_grp5 , Age_5);


data prntunivage_6;
 * length _VAR_ $100;
  set _null_;
run;

%univ(6    , AGE_HPE_M            , age_grp6 , Age_6);
%univ(15   , AGE_TEST_Y                  , age_grp6 , Age_6);
%univ(16   , WAZ                  , age_grp6 , Age_6);
%univ(17   , HAZ                  , age_grp6 , Age_6);
%univ(18   , TOTALBILIRUBINMGDL     , age_grp6 , Age_6);
%univ(19   , INR                  , age_grp6 , Age_6);
%univ(20   , HGBGDL                 , age_grp6 , Age_6);
%univ(21   , PLATELETSCNT         , age_grp6 , Age_6);
%univ(22   , GGTPUNITSL                  , age_grp6 , Age_6);
%univ(23   , ALTUNITSL            , age_grp6 , Age_6);
%univ(24   , ASTUNITSL            , age_grp6 , Age_6);
%univ(25   , WBCCNT               , age_grp6 , Age_6);


data prntunivage_7;
 * length _VAR_ $100;
  set _null_;
run;

%univ(6    , AGE_HPE_M            , age_grp7 , Age_7);
%univ(15   , AGE_TEST_Y                  , age_grp7 , Age_7);
```

```
%univ(16   , WAZ                   , age_grp7 , Age_7);
%univ(17   , HAZ                   , age_grp7 , Age_7);
%univ(18   , TOTALBILIRUBINMGDL      , age_grp7 , Age_7);
%univ(19   , INR                   , age_grp7 , Age_7);
%univ(20   , HGBGDL                  , age_grp7 , Age_7);
%univ(21   , PLATELETSCNT          , age_grp7 , Age_7);
%univ(22   , GGTPUNITSL                  , age_grp7 , Age_7);
%univ(23   , ALTUNITSL             , age_grp7 , Age_7);
%univ(24   , ASTUNITSL             , age_grp7 , Age_7);
%univ(25   , WBCCNT                , age_grp7 , Age_7);



* n and percent;
data prntage_3;
  set _null_;
run;

%npercent(1,  sex             , sexf    , age_grp3 , Age_3);
%npercent(2,  race            , racef    , age_grp3 , Age_3);
%npercent(3,  hispanic                , everf    , age_grp3 , Age_3);
%npercent(4,  degree          , everf    , age_grp3 , Age_3);
%npercent(5,  basm            , everf    , age_grp3 , Age_3);
%npercent(7,  success         , everf    , age_grp3 , Age_3);
%npercent(8,  cholangitis     , everf    , age_grp3 , Age_3);
%npercent(9,  bleed           , everf    , age_grp3 , Age_3);
%npercent(10, ascites         , everf    , age_grp3 , Age_3);
%npercent(11, splenomegaly    , everf    , age_grp3 , Age_3);
%npercent(12, thrombocytopenia  , everf    , age_grp3 , Age_3);
%npercent(13, varices         , everf    , age_grp3 , Age_3);
%npercent(14, pht             , everf    , age_grp3 , Age_3);


data prntage_4;
  set _null_;
run;

%npercent(1,  sex             , sexf    , age_grp4 , Age_4);
%npercent(2,  race            , racef    , age_grp4 , Age_4);
%npercent(3,  hispanic                , everf    , age_grp4 , Age_4);
%npercent(4,  degree          , everf    , age_grp4 , Age_4);
%npercent(5,  basm            , everf    , age_grp4 , Age_4);
%npercent(7,  success         , everf    , age_grp4 , Age_4);
%npercent(8,  cholangitis     , everf    , age_grp4 , Age_4);
%npercent(9,  bleed           , everf    , age_grp4 , Age_4);
%npercent(10, ascites         , everf    , age_grp4 , Age_4);
%npercent(11, splenomegaly    , everf    , age_grp4 , Age_4);
%npercent(12, thrombocytopenia  , everf    , age_grp4 , Age_4);
%npercent(13, varices         , everf    , age_grp4 , Age_4);
%npercent(14, pht             , everf    , age_grp4 , Age_4);
```

```
data prntage_5;
  set _null_;
run;

%npercent(1,  sex             , sexf    , age_grp5 , Age_5);
%npercent(2,  race            , racef    , age_grp5 , Age_5);
%npercent(3,  hispanic                , everf    , age_grp5 , Age_5);
%npercent(4,  degree          , everf    , age_grp5 , Age_5);
%npercent(5,  basm            , everf    , age_grp5 , Age_5);
%npercent(7,  success         , everf    , age_grp5 , Age_5);
%npercent(8,  cholangitis     , everf    , age_grp5 , Age_5);
%npercent(9,  bleed           , everf    , age_grp5 , Age_5);
%npercent(10, ascites         , everf    , age_grp5 , Age_5);
%npercent(11, splenomegaly    , everf    , age_grp5 , Age_5);
%npercent(12, thrombocytopenia  , everf    , age_grp5 , Age_5);
%npercent(13, varices         , everf    , age_grp5 , Age_5);
%npercent(14, pht             , everf    , age_grp5 , Age_5);


data prntage_6;
  set _null_;
run;

%npercent(1,  sex             , sexf    , age_grp6 , Age_6);
%npercent(2,  race            , racef    , age_grp6 , Age_6);
%npercent(3,  hispanic                , everf    , age_grp6 , Age_6);
%npercent(4,  degree          , everf    , age_grp6 , Age_6);
%npercent(5,  basm            , everf    , age_grp6 , Age_6);
%npercent(7,  success         , everf    , age_grp6 , Age_6);
%npercent(8,  cholangitis     , everf    , age_grp6 , Age_6);
%npercent(9,  bleed           , everf    , age_grp6 , Age_6);
%npercent(10, ascites         , everf    , age_grp6 , Age_6);
%npercent(11, splenomegaly    , everf    , age_grp6 , Age_6);
%npercent(12, thrombocytopenia  , everf    , age_grp6 , Age_6);
%npercent(13, varices         , everf    , age_grp6 , Age_6);
%npercent(14, pht             , everf    , age_grp6 , Age_6);


data prntage_7;
  set _null_;
run;

%npercent(1,  sex             , sexf    , age_grp7 , Age_7);
%npercent(2,  race            , racef    , age_grp7 , Age_7);
%npercent(3,  hispanic                , everf    , age_grp7 , Age_7);
%npercent(4,  degree          , everf    , age_grp7 , Age_7);
%npercent(5,  basm            , everf    , age_grp7 , Age_7);
%npercent(7,  success         , everf    , age_grp7 , Age_7);
%npercent(8,  cholangitis     , everf    , age_grp7 , Age_7);
%npercent(9,  bleed           , everf    , age_grp7 , Age_7);
```

```
%npercent(10, ascites         , everf    , age_grp7 , Age_7);
%npercent(11, splenomegaly    , everf    , age_grp7 , Age_7);
%npercent(12, thrombocytopenia  , everf    , age_grp7 , Age_7);
%npercent(13, varices         , everf    , age_grp7 , Age_7);
%npercent(14, pht             , everf    , age_grp7 , Age_7);



* Table 1;
data table1_age3;
  set prntunivage_3     (in=in1 keep = rownum _var_ covarf _nobs_ _median_ _q1_ _q3_ _min_ _max_ _mean_ _std_)
      prntage_3
  ;
  _median_   = round(_median_, .1 );
  _q1_       = round(_q1_    , .1 );
  _q3_       = round(_q3_    , .1 );
  _min_      = round(_min_   , .1);
  _max_      = round(_max_   , .1);
  _mean_     = round(_mean_  , .01);
  _std_      = round(_std_   , .01);
  percent    = round(percent);

run;

proc sort data=table1_age3;
  by rownum;
run;

proc print data= table1_age3 noobs;
    var rownum _var_  covarf _nobs_  count percent _median_ _q1_ _q3_ /*_min_ _max_*/ _mean_ _std_;
    title3 "Table 1 (Age 3)";
run;


data table1_age4;
  set prntunivage_4     (in=in1 keep = rownum _var_ covarf _nobs_ _median_ _q1_ _q3_ _min_ _max_ _mean_ _std_)
      prntage_4
  ;
  _median_   = round(_median_, .1 );
  _q1_       = round(_q1_    , .1 );
  _q3_       = round(_q3_    , .1 );
  _min_      = round(_min_   , .1);
  _max_      = round(_max_   , .1);
  _mean_     = round(_mean_  , .01);
  _std_      = round(_std_   , .01);
  percent    = round(percent);

run;

proc sort data=table1_age4;
  by rownum;
```

```
run;

proc print data= table1_age4 noobs;
    var rownum _var_  covarf _nobs_  count percent _median_ _q1_ _q3_ /*_min_ _max_*/ _mean_ _std_;
    title3 "Table 1 (Age 4)";
run;


data table1_age5;
  set prntunivage_5     (in=in1 keep = rownum _var_ covarf _nobs_ _median_ _q1_ _q3_ _min_ _max_ _mean_ _std_)
      prntage_5
  ;
  _median_   = round(_median_, .1 );
  _q1_       = round(_q1_    , .1 );
  _q3_       = round(_q3_    , .1 );
  _min_      = round(_min_   , .1);
  _max_      = round(_max_   , .1);
  _mean_     = round(_mean_  , .01);
  _std_      = round(_std_   , .01);
  percent    = round(percent);

run;

proc sort data=table1_age5;
  by rownum;
run;

proc print data= table1_age5 noobs;
    var rownum _var_  covarf _nobs_  count percent _median_ _q1_ _q3_ /*_min_ _max_*/ _mean_ _std_;
    title3 "Table 1 (Age 5)";
run;


data table1_age6;
  set prntunivage_6     (in=in1 keep = rownum _var_ covarf _nobs_ _median_ _q1_ _q3_ _min_ _max_ _mean_ _std_)
      prntage_6
  ;
  _median_   = round(_median_, .1 );
  _q1_       = round(_q1_    , .1 );
  _q3_       = round(_q3_    , .1 );
  _min_      = round(_min_   , .1);
  _max_      = round(_max_   , .1);
  _mean_     = round(_mean_  , .01);
  _std_      = round(_std_   , .01);
  percent    = round(percent);

run;

proc sort data=table1_age6;
  by rownum;
run;
```

```
proc print data= table1_age6 noobs;
    var rownum _var_  covarf _nobs_  count percent _median_ _q1_ _q3_ /*_min_ _max_*/ _mean_ _std_;
    title3 "Table 1 (Age 6)";
run;

data table1_age7;
  set prntunivage_7     (in=in1 keep = rownum _var_ covarf _nobs_ _median_ _q1_ _q3_ _min_ _max_ _mean_ _std_)
      prntage_7
  ;
  _median_   = round(_median_, .1 );
  _q1_       = round(_q1_    , .1 );
  _q3_       = round(_q3_    , .1 );
  _min_      = round(_min_   , .1);
  _max_      = round(_max_   , .1);
  _mean_     = round(_mean_  , .01);
  _std_      = round(_std_   , .01);
  percent    = round(percent);

run;

proc sort data=table1_age7;
  by rownum;
run;

proc print data= table1_age7 noobs;
    var rownum _var_  covarf _nobs_  count percent _median_ _q1_ _q3_ /*_min_ _max_*/ _mean_ _std_;
    title3 "Table 1 (Age 8-12)";
run;
```