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6. Tables 1-4

Table 1

Content Areas of NGHS with List of Forms which Contain that Information

Content Area	Form Numbers
Demographics	02
Anthropometry, maturation, and blood pressure	05, 18, 28
Nutrition	09, Food Record
Physical activity	11,12, 27
Lipids, insulin, glucose, cotinine	08
Medical history, pregnancy, smoking, alcohol use	05, 18, 28
Health beliefs and attitudes	13, 19
Self Perception Profile for Children (Harter)	15
Perceived Stress Scale (Cohen, Kamarck, Mermelstein)	22
Revised Children's Manifest Anxiety Inventory (Reynolds and Richmond)	23
Coping Strategies (Tobin)	24
Eating disorders inventory (Garner, Psychological Assessment Resources)	25
Depression Scale (Center for Epidemiologic Studies)	19 (Years 8, 10)
Dimension of Temperment Scale (Windle and Lerner)	19 (Year 10)
Life events	29

Table 2

NGHS Forms
Revision by Year

Form	10	9	8	7	6	5[1]	4	3	2	1
2 Household Info				4		3		2		0,1
2P Participant Info	3	2	1	0						
5 Examination										0,1
6 Parent History				1						0
6F[2] Parent History						1		0		
6R[3] Parent History						0				
7 Adult Exam				3, 4		2		1		0
9 Nutrition			6	5	4	3	2	1		0
9A Nutrition	1	0								
9B Nutrition	1	0								
10 Nutrition - A[2]				4		3		2		0, 1
11 Phys Act Diary	7		5	4	Form 9	3	3	2	1	0
12 Phys Act Patterns	7	6	5	4	Form 9	3		2		0, 1
13 HBA		4		3		2		1		0
14 HBA - A				1						0
14F[3] HBA						1		0		
14R[4] HBA						0				
15 Harter		4		3		2		1		0
16 FES - A				2, 3		1		0		0[5]
17 Nutrition									0	
18 Examination				7, 8	5, 6	4	3	2	0, 1	
19 HBA	4, 5[6]		3[7]		2		1		0	
22 Stress	2		2(1)[8]		1		0		0	
23 MAS						1		0		
24 Coping	3		3(2)		2		1(0)		0	
25 EDI	4, 5[9]	3		2		1		0		Form 30[10]
26 EDI - Adult				2		1		0		
27 Caltrac						2	B(1)	P, B (1)		
28 Examination	2	1	0							
29 Life Events	1		0							
43 Food Record	6		5	4		3	3	2	1	0
44 Snack vs Meal									0	0

[1]Westat only clinic to do adult forms in Year 5.

[2]Adult Form

[3]First time parent

[4]Returning parent

[5]Berkeley did not use in Year 1.

[6]Includes Dimensions of Temperment, Revised (DOTS) and Center for Epidemiologic Studies Depression Scale (CES-D).

[7]Includes CES-D depression scale.

[8]The number in parentheses is the revision number on both versions of the form. Dates must be used to distinquish revisions.

[9]Westat used the long form. Berkeley and Cincinnati used the short version of the form.

[10]Westat only

Table 3

Study Chronology

Study	Year	Calendar Year	Participant Ages	Mean Ages White	Mean Ages Black
NGHS I	1	1987 - 1988	9 - 10[11]	10.0	10.1
	2	1988 - 1989	10 - 11	11.0	11.1
	3	1989 - 1990	11 - 12	12.0	12.1
	4	1990 - 1991	12 - 13	12.9	13.0
	5	1991 - 1992	13 - 14	14.0	14.1
NGHS II	6	1992 - 1993	14 - 15	15.0	15.1
	7	1993 - 1994	15 - 16	16.0	16.1
NGHS III	8	1994 - 1995	16 - 17	17.0	17.1[12]
	9	1995 - 1996	17 - 18	17.9	18.0
	10	1996 - 1997	18 - 19	19.0	19.2
	11	1997 - 1998	Closeout, Analysis		
	12	1998 - 1999	Analysis		

[11]e.g., 9.000 to 10.999

[12]Mean age for years 8 – 10 includes those seen four months post-partum and thus may include those older than the initial age range.

Table 4

Information Collected in NGHS

Item	Study Year 1	2	3	4	5	6	7	8	9	10
Demographic	X				X[1]		X			X
History										
Medical	X	X	X	X	X	X	X	X	X	X
Smoking/Alcohol	X	X	X	X	X	X	X	X	X	X
Pregnancy						X	X	X	X	X
Oral Contraceptives		X	X	X	X	X	X	X	X	X
Physical Exam										
Height/Weight	X	X	X	X	X	X	X	X	X	X
Skinfold Thickness	X	X	X	X	X	X	X	X	X	X
Circumferences	X	X	X	X	X	X	X	X	X	X
BIA	X	X	X	X	X	X	X	X	X	X
Sexual Maturation	X	X	X	X	X	X				
Blood Pressure	X	X	X	X	X	X	X	X	X	X
Biochemical Determinations										
TC, TG,	X		X		X		X			X
HDL-C, LDL-C	X		X		X		X			X
Apo-A1, Apo-B	X		X		X		X			X
Insulin/Glucose	X						X			X
Cotinine							X			
Dietary Assessment										
Food Record (3 day)	X	X	X	X	X		X	X		X
Nutrition Patterns	X	X	X	X	X	X	X	X	X	X
Physical Activity Assessment										
Diary (3-day)	X	X	X	X	X		X	X		X
Activity Patterns	X		X		X		X	X	X	X
Some Patterns' Ques.						X				
Psychosocial Instruments										
Health Beliefs	X	X	X	X	X	X	X	X	X	X
Self-esteem		X		X		X		X		X
Family Environment	X[2]		X		X[1]		X			
Eating Disorders	X[1]		X		X		X		X	X
Manifest Anxiety			X		X					
Perceived Stress		X		X		X		X		X
Coping Strategies		X		X		X		X		X
Life/Stressful Events								X		X

[1]Westat only
[2]Cincinnati and Westat only

7. Changes in forms and procedures

SOCIO-ECONOMIC AND HOUSEHOLD INFORMATION

Form 02 in Years 1, 3, 5, 7
Form 2P in Years 7, 8, 9, 10

VARIABLE NAME	QUESTION	YEARS ASKED/ CHANGES
race	Which one of the following racial or ethnic grps best describes the child?	Yr 1 only
hisp	Is the child of hispanic origin?	Yr 1 only
	Parent/guardian information:	
f/mrelat[1]	What is your relationship to the girl?	All/+bio.par.Yr 1,7
f/mage, f/mrace, fmhisp	Age, race, hispanic?	Yr 1,7
f/mhtft, f/mhtin, f/mwt	Present height (ft., in.) and weight(lbs.)?	Yr 7
maxeduc	Highest level education completed?	Yr 1,7/+degr.Yr 7
f/mmarry	Martial status? (marr.,div.or sep, widowed,never)	Yr 1, 7
f/mfull, f/mpart, f/mretire, f/mnotwork, f/mkephse, f/mschful, f/mschprt	Work status (full,part, retired, out of work, home, school full time, sch part time)?	Yr 1,7/part+full time,no sch.Yr 7
parents	Number of parents in house	Yr 1, 7
	Household composition:	
a-hsex, a-hage, a-hrelat[2]	Family members by gender, age, relationship	Yr 1 only
npeopl18/npeopl17	Number of people in house over/under 18	Yr 3, 5, 7
ychld, ochld, schld	Number of sibs older, younger, same as girl	Yr 1 only
	Household economics:	
income	Total household income (5 to 75 thou, 11 categ.)	Yr 1, 7
own	Home owned or rented?	Yr 1, 7
rooms	Number of rooms in home?	Yr 1 only
	Natural parents:	
ma/parace, ma/pahisp	Race, Hispanic	Yr 1
(phlth)[3]hrt, bp, hcl, dib	Health problems(heart, BP, cholesterol,diabetes)?	Yr 7 only
(ghlth)hrt, bp, hcl, dib	Grandparent health problem < 60 (as above)?	Yr 7 only

[1]Prefix f = female parent, m = male parent.

[2]Prefix a to h for up to eight family members

[3]Prefix for the following variables

casthma, cdiabet, chibp chichol, chthyr, chrt cwtprob: cwtundr/cwtover chlthprb ccurmeds	**Girl's medical history:** Health problems last 6 yrs (asthma, diabetes, BP, cholest., thyroid, heart)? Weight problem last 6 yrs (under/over)? Regular health care because of problem? Current prescribed medications?	 Yr 7 only Yr 7 only Yr 7 only Yr 7 only
student highgrad conths, coll, getjob, milit, leave, getmarr	**Girl's education:** Student now (hi school, tech., college, indep.)? Highest grade completed (8th to 4 yrs college) Plans for next year (hi sch.,college,tech.,work, military, move)	Yr 7-10/Yr 8+hrs. sch. Yr 8-10 Yr 8-10/Yr 8+ drop sch.,marry
lvself,lvprnt,lvsib,lvhusb, lvfrnd, lvdorm, lvoth nmoves npeopl: npeopl18, npeopl17 nmal18 nmal17 nfem18 nfem17	**Girl's place of residence:** Now living with (self,parent,sib,husband, friend, school) Number of times moved in last 5 yrs. How many people in house by age: ≥18 vs ≤17	 Yr 7, 9, 10 Yr 7, 8 Yr 1, 7,8/Yr7+ gender
finpar finjob finfrnd fingov fingrant finother foodstmp wicprog afdcprog medicaid jobweeks (jobmon)[4]wk mo yr	**Girl's financial support:** Main source (parents, job, friend, public supp, loan) Public support (fd stamps, WIC, AFDC, Medicaid) Job in last yr? How many weeks? Income earned at job? Work history in last yr? (place, type work, # hrs)	 Yr 10 Yr 10 Yr 8, 9, 10 Yr 10 only Yr 9, 10
SSN	Girl's Social Security Number	Yr 10

[4]Prefix for the following variables

Documentation of Changes in NGHS Anthropometric Measurements and Procedures

General Information:

- NGHS I Manual of Operations (MOO) dated 3/88. Revised Chapter F on 3/9/89 for Year 3.
- NGHS II MOO dated 5/93
- NGHS III MOO dated 12/5/95. Revision for this MOO took place at meeting in Cincinnati on 7/7-8/95.
- Maturation Staging data were collected Years 1-6
- Year 1 included no waist circumference, Years 2-5 had minimum and max. below waist circumferences, Years 6-10 had three waist circumferences.
- Years 1-7 included a thigh circumference

Issues:

- When was the heel block added to protocol? It was added to MOO II, but we used it before that time.
- Tape Measure with spring issue. Westat was using this in Year 9, but changed after site visit. A memo dated 12/14/89 from Frank Falkner, discusses advantages of, and how to use the spring.
- Site of suprailiac skinfold needed clarification. Two memos addressed the site: An internal memo dated 10/11/90 from Janet Sandberg, per her discussion with Frank Falkner; and memo dated 6/26/92 from Barb Campaigne ad Frank Falkner addressed to all centers. The memos are consistent regarding the site.

Form Changes:

Year 1 (Form 5)

Form had a page with instructions at the top for indicating that only the Westat (Washington DC) center ask. The question has three-parts and asks about race.

Between Revision 0, 1 Differences:

Q38- 'When did you start having your periods?' Answer space went from m/d/y to just m/y.

Q41- 'Are you currently taking any pills or medicines?' Added phrase, 'not including vitamins'.

Year 2 (Form 18)

Added the waist and maximum below waist circumferences.

Page with Westat center race question (see above) is dropped.

Added Q41- 'Are you taking birth control pills?'.

Changed 1st smoking question (Q42 in Year 1)- 'Have you smoked more than 5 cigarettes in the past week?' to 'Have you smoked any cigarettes in the past year?' plus 'Was it more than 5 cigarettes?' (Q44 and Q45). 'How many cigarettes did you smoke last week?', remained on form in both years (Q43, Q46, respectively).

Between Revision 0, 1 Differences:

Added cover page with space for participant info such as name, Id, date, visit number.

Added additional space for staff Ids.

Year 3 (Form 18, Rev 2)

Dropped MIL Q (Q5 in Year 2)- 'Is MIL 260 or higher, or did participant have pain when MIL was being determined, or were attempts to determine MIL unsatisfactory?'.

Changed the problems during MIL (Q9) from a specify line to four answer categories of: Background noise too loud, Needed reinforcement, K4 indistinguishable from K5, and Other problem (with specify line).

Dropped 'Chest' as possible answer for pulse site (Q10 in Year 2).

Added Notification limits box for elevated blood pressure with 2 week, and 3 month categories. Includes a line for signature of examiner (Q10).

Added > or = to 50 mm box for all skinfolds.

Moved the Examinee's shape pics to last question.

Moved Maturation Staging and BIA to be *after* menstrual history questions.

Year 4 (Form 18, Rev 3)

Notification limits (blood pressure) change for 3 month category: 126/82 to 128/84. These systolic and diastolic values increase as the girls become older.

Year 5 (Form 18, Rev 4)

Notification limits (blood pressure) change to three categories: from '2 weeks, 3 months' *to* 'today, 2 weeks, 3 months'. Additionally the values increase for each category, since girls are older. Thus, information is more conservative for elevated blood pressures.

Year 6 (Form 18)

Notification limits (blood pressure) categories change from 'today: 154/98, 2 weeks: 144/92, 3 months: 130/86 (in Year 5)', to 'today: 154/98, 1 week: 144/92, 2 months: 136/86 (in Year 6)'. Again, information is changed to more conservative limits, and some values increase slightly since girls are older.

Dropped clothing weight.

Added umbilicus waist circumference.

Added 'Check here if unable to measure' for all Skinfolds. Additionally, all the boxes for this and the >than or = to 50 mm changed to lines.

Moved pics of Mother and Father to after menstrual history questions.

Changed the order of questions asking about meds and health to *before* menstrual history.

Added phrase to birth control pill Q-' or have you taken them in the last 4 months?' (Q31).

Added pregnancy Q32- 'Have you ever been pregnant?' and Q33 'Are you pregnant now or have you been pregnant in the last 4 months?'

Added one Maturation Staging Q, Q36- 'Has the girl previously achieved menarche and been classified as Stage 4?'. If Yes, interviewer skips out of doing maturation staging to compete Bioelectrical Impedance.

Dropped cigarette smoking questions from the form (Q34-36, Year 5). These questions changed and were added to Form 9 (Nutrition).

Dropped Examinee's pics (Q4, Year 5).

Between Revision 5, 6 Differences:

Added edit limits for BP and Anthro, based on %iles from NHANES II data.

Added 4th BP measurement space but no text of criteria describing when it is required is on the form.

Added Verification lines (to check off) for BP and Anthro.

Added measurement criteria describing when third Anthro measurements are required.

Year 7 (Form 18)

Edit limits change for BP and Anthro. These increase as the girls age.

Added text about when 4th BP is required.

Reversed the order of health or medical problem follow-up Q. Q28 now asks, 'What is this health or medical problem?'(A) *before the* Q, 'Do you see a doctor or go to a clinic regularly for the health or medical problem?'(B).

Moved pics of Mother and Father to before menstrual history.

Added pregnancy history questions: 'How many times have you been pregnant?' (Q36). 'Have you ever given birth to a baby?' (Q37). 'How many times have you given birth to a baby?' (Q38). 'Please list the birthdates of your children.' (Q39). 'Are you currently nursing or breastfeeding your baby?' (Q40). 'How much weight did you gain during your last pregnancy?'. 'What was your maximum weight during your last pregnancy?' (Q41, 41A).

Changed Q- 'Are you pregnant now or have you been pregnant in the last 4 months?' (Q34, Year 6) *to* 'Are you pregnant now?' (Q42). This change is due to the addition of the more detailed pregnancy questions added (see above).

Dropped Maturation Staging.

Between Revision 7, 8 Differences:

Added a separate line for second Examiner to sign and put ID.

Year 8 (Form 28, Rev 0)

Dropped infant cuff as a size option.

Edit limits for BP and Anthro changed. Increase as girls age.

Added smoking Q2A- 'Have you smoked a cigarette in the past 30 minutes?'. This is asked before taking blood pressure measurement.

Dropped thigh circumference.

Changed Q27 wording from- 'Do you have a health or medical problem?' *to* 'Do you have a health or medical *condition?'*

Added Q32A- ' Are you taking depo-Provera (the shot) or Norplant?'

Added 2 more pregnancy history Qs- 'Was the delivery of each baby within the period of two weeks before or after the due date?' (Q38) and 'What was the birthweight of each child?' (Q39).

Year 9 (Form 28, Rev 1)

Edit limits for BP ad Anthro changed. Increase as girls age.

Notification limits are moved to back of page 1 and no longer in a box. No changes in the values or categories.

Separated text for Examiner's signature of BP notification from Box area; made it a stand alone question.

Dropped pics of Mother and Father.

Separated depo-Provera and Norplant question into two questions: Now reads: 'Are you taking depo-Provera (the shot)?' (Q32) *and* 'Do you have a Norplant implant?' (Q33).

Changed the order of the pregnancy history questions.

Reworded question- 'Was the delivery of each baby within the period of two weeks before or after the due date?' (Q38, Year 8) *to* 'Was the delivery of each baby early (that is, more than 14 days before the due date)?' (Q39).

Added blanks for a 4th child each on question that asks about the participants' children. Up to this year only three blanks were provided.

Added one three-part question- 'Did the doctor/nurse/clinic recommend a weight gain during your last pregnancy?', 'How much weight did they recommend that you gain?', and a box to 'Check off they did not recommend a specific amount of weight gain' (Q44, 44A, 44B).

Year 10 (Form 28, Rev 2)

Edit limits changed for BP and Anthro. Increase as girls age.

Notification limits for BP changed and categories changed: Now 4 categories; immediately, one week, one month, two months. Again, these are more conservative.

Added 2 more lines to check for Skinfolds: If Model II used, and if > than or = to 65 mm.

Dropped Q (Q28, Year 9)- 'Have you started having your periods?'.

Added a two-part Q- 'When did your last period begin?', 'On average, how long is it from the first day of one menstrual period until the first day of your next menstrual period?', 'In the past year, what is the longest length of time you did not have any menstrual periods? Do not include times when you were pregnant' (Q28, 28A, 28B).

Added an other specify line for birth control pill question, if Yes. (Q29A)

Clinical Measures: through the past darkly

Clinical measures started as Form 05 was changed to Form 18 on 2/88, and became Form 28 on 4/94 To help evaluate question drift (much more serious condition than continental drift, if you catch my drifty), I've used the following designations:

VISIT	YEAR	FORM & REVISION #	GENERATION OF FORM
1	3/87	form 05	[1]
	7/87	form 05, rev 1	[2]
2	2/88	form 18, rev 0	[3]
	7/88	form 18, rev 1	[4]
3	1/89	form 18, rev 2	[5]
4	12/89	form 18, rev 3	[6]
5	10/90	form 18, rev 4	[7]
6	1/92	form 18, rev 5	[8]
	9/92	form 18, rev 6	[9]
7	1/93	form 18, rev 7	[10]
	5/93	form 18, rev 8	[11]
8	4/94	form 28, rev 0	[12]
9	1/95	form 28, rev 1	[13]
10	2/96	form 28, rev 2	[14]

Has any other form undergone 13 changes? in 9 years?
As of generation 13, location of visit was listed on the form.

Blood pressure

1. Mid-arm circumference, for cuff sizing, was measured for the first six months. Because we used the cuff limits to assess this anyway, that step was eliminated.

2. Three blood pressures were determined through generation 8, and the four blood pressure measures were used from generation 9 through generation x.

3. Notification limits were included in the form as of generation 5, and edit limits were implemented (with verified blood pressure) were used beginning with generation 10.

4. Signature of participant if notification limits were exceeded was included in generation 13.

5. Asking if cigarette was smoked with 30 minutes was elicited and recorded beginning with generation 12.

6. There were open-ended responses for "*any problems or special occurrences while determining MIL or taking BP*" for first four generations, and with generation five, three specific problems (background noise, needed reinforcement, K4 indistinguishable from K5) with "other problem" were used.

Maturation

1. During year one, the figures demonstrating PH were listed only for PH1, PH3, and PH5; thereafter, there were drawings for all five stages.

Menarche and menses

1. *"Have you started having periods?"* was used through generation 13.

2. *"When did you start having periods?"* was used through generation 13.

3. *"When did your last period begin?"* was used for all generations.

4. *"Has the girl previously achieved menarche and been classified as stage 4?"* was used in generation 8 and 9.

5. Generation 14 added:

   "On average, how long is it from the first day of one menstrual period until the first day of your next menstrual period?"

   "In the past year, what is the longest length of time you did not have any menstrual periods? Do not include times when you were pregnant."

6. We inquired about menarche and menses, but not mensa.

General health

1. Every generation inquired about:
   Do you have any health or medical problem?

   Do you see a doctor or go to clinic regularly for this health/medical problem?

   What is this health or medical problem?

   What is this thing called love? By the way, after working on this for 20 hours, if you don't like the jokes, read each line of 14 forms yourself. If you maintain your sanity, you and I clearly have little in common.

2. Even worse, I'm not sure anybody will be using any of this information, although it might be useful to look at incidence and prevalence of chronic medical problems.

3. First generation asked *"Are you currently taking any pills or medicines?"* This was changed to *"Are you currently taking any pills or medicines, not including vitamins?"*

Reproductive issues

1. We inquired about contraceptives beginning with generation 3.

2. We asked *"Are you taking birth control pills?"* generations 3-7. Beginning generation 8, *"Are you taking birth control pills now or have you taken them in the last four months?"*

3. We extended this to *"Are you taking Depo-Provera (the shot) or Norplant?"* in generation 12, which was switched with generation 13 to *"Are you taking Depo-Provera (the shot)?"* and *"Do you have a Norplant?"*

4. *"Have you ever been pregnant?"* was asked beginning generation 8.

5. With generation 10, we began asking "How many times have you been pregnant?"; also
   "Have you ever given birth to a baby?"
   "ow many times have you given birth to a baby?"
   "Please give the birthdates of your child(ren)" mm/dd/yy x3; x4 starting gen 13.
   "Are you currently nursing or breast feeding your baby?"
   "How much weight did you gain during your last pregnancy?"

With generation 10, we changed *"Are you pregnant now or have you been pregnant in the last 4 months"* (recorded from generation 8) to *"Are you pregnant now?"*

6. With generation 12, we added *"Was the delivery of each baby within the period of 2 weeks before or after the due date?"* x3; this was changed with generation 13 to *"Was the delivery of each baby early (that is, more than 14 days before due date)?"* x4.

7. With generation 12 we also added *"What was the birthweight of each child?"* x3; x4 generation 13.

8. With generation 13, we added *"Did your doctor/nurse/clinic recommend weight gain during your last pregnancy?"*; if yes, *"How much weight did they recommend that you gain?"*; *"Check if they did not recommend specific amount of weight gain"*.

Tobacco

YEAR	FORM & REVISION #	GENERATION OF FORM
3/87	form 05	[1]
7/87	form 05, rev 1	[2]
2/88	form 18, rev 0	[3]
7/88	form 18, rev 1	[4]
1/89	form 18, rev 2	[5]
12/89	form 18, rev 3	[6]
10/90	form 18, rev 4	[7]
4/92	form 09, rev 4	[8]
1/93	form 09, rev 5	[9]
4/94	form 09, rev 6	[10]
1/95	form 9A, rev 0	[11]
1/95	form 9B, rev 0	[12]

1. With generation 1 (and 2), *"Have you smoked more than 5 cigarettes in the past year"* and *"If yes, how many cigarettes did you smoke last week?"*

2. With generation 3, the exam form asked *"Have you smoked any cigarettes in the past year"*, *"Was it more than 5 cigarettes?"*, and *"How many cigarettes did you smoke last week?"*, through generation 7.

3. Beginning with form 09, rev 4, 4/92, we modified our cigarette smoking questions:

   - *"How old were you when you smoked a cigarette for the first time? ☐ I have never smoked a whole cigarette; ☐ less than 9 years old; ☐ 9 or 10 years old; ☐ 11 or 12 years old; ☐ 13 or 14 years old; ☐ 15 years old."*

   - "How much do you smoke cigarettes? ☐ *I've never smoked;* ☐ *I've smoked once or twice;* ☐ *I've smoked a few times;* ☐ *I smoke occasionally but less tan once a month;;* ☐ *I smoke weekly but not every day;* ☐ *I smoke every day or nearly every day."*

   - *"How old were you when you first started smoking cigarettes regularly? (Nearly every day for 30 days): ☐ I have never smoked cigarettes regularly; ☐ less than 9 years old; ☐ 9 or 10 years old; ☐ 11 or 12 years old; ☐ 13 or 14 years old; ☐ 15 years old."*

- *"During the past 30 days, on how many days did you smoke cigarettes? ☐ None; ☐ 1 or 2 days; ☐ 3 to 5 days; ☐ 6 to 9 days; ☐ 10 to 19 days; ☐ 20 to 29 days;* ☐ all 30 days."

- *"During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day? ☐ I did not smoke cigarettes during the past 30 days; ☐ less than 1 cigarette per day; ☐ 2 to 5 cigarettes per day; ☐ 6 to 10 cigarettes per day; ☐ 11 to 20 cigarettes per day; ☐ more than 20 cigarettes per day."*

5. On form 9A, rev 0, 1/95, we added to the lose weight/ keep from gaining weight questions:

   - *"During the past 30 days which of the following did you do to lose weight or to keep from gaining weight?...J. I smoked to lose weight or keep from gaining weight.☐"*

6. On form 9B, rev 0, 1/95, when quantitating how much was smoked, an additional response was *"I've smoked in the past but not now."*

7. On form 9B, rev 0, 1/95, we added *"Do you believe smoking helps people keep their weight down?"*

Alcohol

YEAR	FORM & REVISION #	GENERATION OF FORM
3/87	form 09, rev 0	[1]
2/88	form 17, rev 0	[2]
1/89	form 09, rev 1	[3]
12/89	form 09, rev 2	[4]
10/90	form 09, rev 3	[5]
4/92	form 09, rev 4	[6]
1/93	form 09, rev 5	[7]
4/94	form 09, rev 6	[8]
1/95	form 9B, rev 0	[9]

1. On form 09, rev 0, 3/87 (Nutrition form) we asked *"People often drink liquor at religious services. Not counting that, in the past month ow many glasses of alcoholic beverages, such as beer, wine, or whiskey, have you had? Write the number of glasses here: ____; if none, write "0". If Catholic, you should list anything more than a sip." Question was asked "I drink beer, wine, or other drinks with liquor...a) never or almost never; b) sometimes; c) usually or always" on form 09, rev 0, 3/87 (again); form 17, rev 0, 2/88; form 09, rev 1, 1/89; form 09, rev 2, 12/89; form 09, rev 3, 10/90.*

2. In form 09, rev 4, 4/92, we assured participants of confidentiality, and excluded drinking a few sips of wine for religious purposes. We then asked:

   - *"During the past 30 days, on how many days did you have at least one drink of alcohol? ☐ I have never had a drink of alcohol or only had a few sips; none; ☐ 1 or 2 days; ☐ 3 to 5 days; ☐ 6 to 9 days; ☐ 10 to 19 days; ☐ 20 to 29 days; ☐ all 30 days."*

   - *"On the days when you do drink; how many drinks do you usually have? (If you do not drink write "0" on the line)."*

3. In form 09, rev 6, 4/94, we added:

   - *"During the past 30 days, on how many days did you have four or more drinks of alcohol in a row, that is, within a couple of hours? ☐ 0 days; ☐ 1 day; 2 days; ☐ 3-5 days; ☐ 6-9 days; ☐ 10 or more days."*

4. In form 9B, rev 0, 1/95, we modified the alcohol question to define a 'drink' by specific type of alcohol and volume.

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 1-5	Year 6	Year 7	Years 8-10	VARIABLE NAME
ON SCHOOL DAYS: Do you USUALLY eat breakfast? Do you USUALLY eat a morning snack?	ON WEEKDAYS: Same as Yrs 1-5 Dropped	On WEEKDAYS, do you USUALLY eat: Breakfast Dropped	Same as Year 7 Same Dropped	 BREAKFST MORNSNK
Do you USUALLY eat lunch?	Same as Yrs 1-5	Lunch	Same as Year 7	LUNCH
Do you USUALLY eat a snack after school?	Do you USUALLY eat an afternoon snack? If YES, do you usually eat it while watching TV?	Afternoon snack Dropped	Same as Year 7 Dropped	AFTSNK AFTSNKTV
Do you USUALLY eat dinner/supper?	Same as Yrs 1-5 If YES, Do you usually eat it at home? Do you usually eat it while watching TV? Do you usually eat it by yourself? Do you usually eat it with a parent or other adult?	Dinner/supper If YES, do you USUALLY eat dinner/supper: At home Watching TV By yourself With a parent or adult With someone else	Same as Year 7 Dropped	DINNER DINHM DINTV DINSLF DINADLT DINWHM
Do you USUALLY eat an evening snack?	Same as Yrs 1-5 If YES, do you usually eat it while watching TV?	Evening snack Dropped	Same as Year 7 Dropped	EVNSNK EVNSNKTV

GROWTH AND HEALTH STUDY
NUTRITION FORM

Year 1, 2	Years 3-5	Years 2, 6-10	VARIABLE NAME
When you eat with other people, do you usually finish first, last, or about the same time? First Last Same time	When you eat with your family, do you usually finish first, last or about the same time? First Last Same time When you eat with your friends, do you usually finish first, last or about the same time? First Last Same time	Not used	FINSH FRNFINSH
Year 1	**Years 2-5**	**Years 6-10**	
How often do you eat food from a place like McDonald's, Kentucky Fried Chicken, Pizza Hut, Burger King, or some other fast food restaurant? Never or less than once a week 1 to 3 times a week 4 to 7 times a week 8 or more times a week	Same as Year 1 Never Less than once a week Same as Yr 1 Same as Yr 1 Same as Yr 1	Same as Year 1 Same as Yrs 2-5 Once a week 2 to 3 times a week 4 to 5 times a week 6 to 7 times a week More than 7 times a week	YR 1 FSTFOOD4 YR 2-5 FSTFOOD5 YR 6-10 FSTFOOD7

Year 1	Years 2-10	VARIABLE NAME
How often do you eat a meal at someone else's house? Never or less than once a week 1 to 3 times a week 4 to 7 times a week 8 or more times a week	Not used	EATOUT

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 1 and 5	Years 2-4, 6-9	Year 10
Who fixes the food you eat <u>most</u> of the time? If you live in more than one place, think of where you live <u>most</u> of the time, and then who fixes the food you eat <u>most</u> of the time. Mother — <u>PREPAR (YR.1)</u> Father — FIXMOSTA (YR.5) Sister or brother — FIXMOSTB Grandparent — FIXMOSTC Me — FIXMOSTD Other person — FIXMOSTE FIXMOSTF	Not used	Who usually prepares the meals you eat?

	Do not eat this meal	Parent or guardian	Self	Husband, partner, or roommate	Eat out or in a cafeteria	Other	If other, (specify)
Breakfast BRKRMK							
Lunch LNCHRMK							
Dinner DINRMK							

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 1 and 5	Years 2-4, 6-10	VARIABLE NAME
Who decides what you eat for dinner most of time? Mother Father Sister or brother Grandparent Me Other person	Not used	PLANS (YR.1) DECMOSTA (YR.5) DECMOSTB DECMOSTC DECMOSTD DECMOSTE DECMOSTF
Years 1, 3-5	Years 2, 6-10	
When dinner is served do you usually help yourself or is your plate made up for you by someone else? I help myself Plate is made up for me	Not used	FIXPLT

How well do these statements describe you? Put a mark in the box that *best* describes how often this happens.	Years 1-10 [The word "best" underlined in year 1 only.	VARIABLE NAME
I take vitamins	Years 1-5	VITAMINS
When I am bored I eat more	Years 1-7, 9	BOREDMR
I sneak food when no one is looking	Years 1-7, 9	SECRET
I am physically active	Year 1	PHYSACT
I am physically active, that means I get lots of exercise	Years 2-10	PHYSACT
My parents tell me that I should gain weight	Years 1-6	GAINWT
My parents try to get me to eat less food	Years 1-6	EATLESS
I eat while I watch TV	Years 1-7, 9	EATTV
When I watch TV, I snack	Years 7-8, 10	TVSNK
I drink beer, wine, or other drinks with liquor	Years 1-5	DRINK
I eat with my parent(s)	Years 1-3	WFAMLY
I eat dinner or supper with my parent(s)	Years 4-5	WFAMLY
I eat vegetables	Years 1-5	VEGGIE
My parent(s) buy the snacks I like	Years 1-5	PARSNACK
I am on a diet to lose weight	Years 1-2	DIETLOS
I diet to lose weight	Years 3-10	DIETLOS
I eat between meals even when I am not hungry	Years 1-7, 9	NOTHUNGY
I bring a lunch from home to eat at school	Years 1-5	CRRYLNCH
My parents tell me that I should lose weight	Years 1-6	LOSWT
When I do something well I give myself a food treat	Years 1-7, 9	REWARD
When I am sad I eat more	Years 1-7, 9	SADMR
I help choose the food my family buys	Years 1-6	BUYFMLY

GROWTH AND HEALTH STUDY
NUTRITION FORM

I eat while I do my homework	Years 1-7	HOMEWRK
I eat the school lunch	Years 1-5	SCHLNCH
I get very hungry	Years 1-5	VRHUNGY
I buy snack food	Years 1-5	SNKFOOD1
When I am happy I eat more	Years 1-7, 9	HAPPYMR
I fix my own food	Years 1-3	FIXOWN
I prepare my own food	Years 4-6	FIXOWN
I eat alone	Years 1-5	ALONE
I eat big helpings of food	Years 1-7, 9	BHELPS
I eat with friends	Year 1	FRIENDS
When my friends and I get together, I usually have something to eat	Years 2-6	FRIENDS
When I am worried I eat more	Years 1-7, 9	WORRYMR
My parents tell me that I can't eat certain foods for snacks	Years 1-3	CERTFOOD
My parents tell me that I can't eat certain foods or snacks	Years 4-5	CERTFOOD
I eat what my parents tell me to eat	Years 1-6	ASTOLD
I eat food in my bedroom	Years 1-7, 9	BEDRM
I wish I weighed less	Years 1-7, 9	WGHLES
My parent(s) nag me about the kinds of food I eat	Years 1-6	NAG
I skip lunch	Years 1-5	SKIPLNCH
I eat when I am mad	Years 1-5	MAD2
I have to finish all the food on my plate	Years 1-5	FNSHPLT1
I can eat as much as I want at meals	Years 1-6	ALLWNT
I wish I weighed more	Years 1-7, 9	WGHMOR
I eat when I go out to movies or go to watch a sporting event	Years 1-5	SPORTEAT
I eat desserts after meals	Years 1-5	DESSERT
I eat desserts with or after meals	Years 6-7	DESSERT
When I am mad I get something to eat	Years 4-5	MAD1
When I am happy I eat less	Years 4-7, 9	HAPPYLS
When I am worried I eat less	Years 4-7, 9	WORRYLS
When I am sad I eat less	Years 4-7, 9	SADLS
I can buy snacks whenever I want	Years 4-6	SNKFOOD2
I eat all the food on my plate	Years 4-6	FNSHPLT2
When I am bored I eat less	Years 4-7, 9	BOREDLS

GROWTH AND HEALTH STUDY
NUTRITION FORM

I eat more when I am mad[1]	Years 6-7, 9	MADMR
I eat less when I am mad	Years 6-7, 9	MADLS
I am a picky eater	Years 6, 8-10	PICKEAT
When I am stressed I eat more	Years 8-10	STRSDMR
I eat a healthy diet	Years 8-10	HLTHDIET
I eat too much	Year 10	ETTOMCH
I eat too little	Year 10	ETTOLTL
I eat too many snacks	Year 10	ETTOSNK
I eat too little variety	Year 10	ETTOVRTY
I eat the wrong kinds of food	Year 10	ETWRGFD

Years 1-2	Years 3-5	Year 6	VARIABLE NAME
When you have snacks, what are the three snacks you have most often? (Write the names of the snacks on the lines below.) (Year 1 is alphabetical, other years are numeric codes.)	Instruction and emphasis changed: When you have snacks, what are the THREE SNACKS YOU HAVE MOST OFTEN? (Remember to put what you have most often in the first space.)	If you eat while watching television, what three foods do you eat most often? (List what you eat most often when you watch TV on the first line.)	YR 1- SNK1DESC SNK2DESC SNK3DESC YR 2-5 SNACK1-3 YR 6- SNKTV1 SNKTV2 SNKTV3
Have you ever stopped eating for more than a day except for days when you were sick?	Have you ever stopped eating for more than a day? (Do not include days when you were sick.)		STOPEAT

Year 1	Year 3	Years 4-5	Year 6	VARIABLE NAME
Within the last year, have any of these people been on a diet for more than a week? (Please mark one answer box for each line.)				
A friend of yours	Same as Year 1	Same as Year 1	A best friend of yours	YR 1 - DFRIEND YR 6 - DBFRND
	Any other child you know		Any other friends	YR 3 - DCHILD YR 6 - DFRND
One of your parents	Either of your parents	Same as Year 3	Your mother	YR 1-5 DPARENT YR 6 - DMOM
A brother	Same as Year 1	Same as Year 1		DBRO
A sister	Same as Year 1	Same as Year 1	A sister of yours	DSIS
Any other relative	Same as Year 1	Same as Year 1	Same as Year 1	DRELAT
	Any other adult you know	Same as Year 3		DADULT

[1]On analysis files prior to 1998, this variable was MAD2.

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 1-5, 10	Year 5	VARIABLE NAME
If a person is fat, what do you think are the reasons?		
They don't exercise enough		NOEXCISE
They have big bones		BIGBONE
They have a gland problem or something is wrong with their body		GLAND
They eat the wrong foods		WRFOOD
They don't control themselves		NOCNTL
They eat a lot of snacks		SNACKLOT
They eat a lot		EATALOT
It is natural for them to be fat		NATURAL
	Do you think there are any other reasons why a person is fat?	OTHFAT
	If Yes what are the reasons?	FATRMK

Year 3	Years 4-5	VARIABLE NAME _
Are most of the meals in your house specially prepared because someone is on a "special diet"?	Are most of the meals in your house cooked differently because: (Answer each part.)	YR 3 - SPDIET
	A. 1. Someone has high blood pressure or a blood pressure problem?	BLDPRES
	2. Someone has a heart problem?	HRTPROB
	3. Someone has diabetes or high blood sugar?	DIABET
	4. Someone has high cholesterol or high blood fat?	HICHOL
	5. Someone is a vegetarian?	VEGTARN
	6. Someone has some other health problem or reason?	OTHPROB
	(What is the other health problem or reason?) _____	REMARK
If YES, do you eat the same food at these meals as the person who is on the special diet?	B. Do you also eat the differently cooked food at these meals?	ETSPDIET

Is lunch served at your school?	Years 4-5	SCHLUNCH
Is breakfast served at your school?	Years 4-5	SCHBRKF
If YES, do you eat the school breakfast?		EATSCH

GROWTH AND HEALTH STUDY
NUTRITION FORM

Does your school sell snacks or have vending machines for selling snacks? If YES, do you buy them? Is there any place near your home or school that sells snacks? If YES, do you buy them?	Years 4-5	SCHSNACK BUYSCHSK NEARSNK BUYNRSNK
The following questions are about the types of food you normally eat. When you eat chicken it is usually (check only one box): Fried Baked Broiled or barbecued Stewed Other (specify) _____ Don't eat chicken	Year 6	EATCHK EATCHKRM
Do you usually eat the skin on chicken? Yes No Don't eat chicken Do you usually eat the fat on meat? Yes No Don't eat meat	Years 6, 8, 10	CHKSKN EATFAT
At home, do you usually add butter or margarine to your food after it has been prepared? Butter Margarine Other (specify) _____ What type of milk do you usually drink at home? Skim, Non fat, or 1/2% Low fat (!%-2%) Whole Other (specify) _____ Don't drink milk	Year 6	EATGRS EATGRSRM TYPMLK TYPMLKRM
How do you think of yourself? (Mark one box only.) Very underweight Slightly underweight About the right weight Slight overweight Very overweight At the present time are you: (Mark one box only.) Trying to gain weight Trying to lose weight Trying to stay the same weight Not trying to do anything about your weight?	Years 6, 8-10	SELFWT PRSNTWT

Year 6	Years 7, 9-10	Year 8	
How often have you gone on a diet the last year? By "diet" we mean changing the way you eat so that you can lose weight. Never 1-4 times 5-10 times More than 10 times I am always dieting	During the last year how often have you gone on a diet to lose weight? Same as Year 6 Same as Year 6 Same as Year 6 Same as Year 6 Same as Year 6	Have you ever dieted? Same as Years 7, 9-10 Same as Year 6 Same as Year 6 Same as Year 6 Same as Year 6	(YR 6) FRQDT (YR 7,9-10) FRQDT (YR 8) EVERDIET

GROWTH AND HEALTH STUDY
NUTRITION FORM

Year 6	Years 8	Year 9-10	VARIABLE NAME
Have you ever lost 5 or more pounds on a weight loss diet?	Have you ever lost five pounds on a weight loss diet?	Have you every lost five pounds or more on a weight loss diet?	DT5

Did you ever use any of the following to lose weight? (You may check more than one answer.)	Year 6	
I have never tried to lose weight or keep from gaining weight		LSNOTRY
I dieted		LSDIET
I did not eat at all for one or more days		LSNOEAT
I exercised		LSEXER
I made myself throw up		LSVOMIT
I took diet pills		LSPILL
I used laxatives, ipecac, or diuretics		LSLAX
I used diet drinks such as Slim Fast		LSDRNK
I used some other method (specify) _____		LSOTHR LSRMK

Year 6	Years 7-8	Year 9	Year 10	VARIABLE NAME
During the past 30 days, which of the following did you do to lose weight or to keep from gaining weight? (You may check more than one answer.)				
I did not try to lose weight or keep from gaining weight	Same as Year 6	Same as Year 6	Same as Year 6	LSMNOTRY
I dieted	Same as Year 6	Same as Year 6	Same as Year 6	LSMDIET
I did not eat at all for one or more days	Same as Year 6	Same as Year 6	Same as Year 6	LSMNOEAT
		I skipped meals	Same as Year 9	LSMSKIP
I exercised	I exercised to lose weight or keep from gaining weight	Same as Years 7-8	Same as Years 7-8	LSMEXER
I made myself throw up	Same as Year 6	Same as Year 6	Same as Year 6	LSMVOMIT
I took diet pills	Same as Year 6	Same as Year 6	Same as Year 6	LSMPILL
I used laxatives, ipecac, or diuretics	Same as Year 6	Same as Year 6	Same as Year 6	LSMLAX
I used diet drinks such as Slim Fast	Same as Year 6	Same as Year 6	Same as Year 6	LSMDRNK
		I smoked to lose weight or keep from gaining weight	Same as Year 9	LSMSMOK
			I ate only 1 or 2 foods for several days at a time	LSM12FD
I used some other method (specify)	Same as Year 6	Same as Year 6	Same as Year 6	LSMOTHR LSMRMK

GROWTH AND HEALTH STUDY
NUTRITION FORM

Year 6	Years 7-10
The next two questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes. (Remember, all information that you give us is confidential and will NOT be shared with parents, guardians, teachers, or friends.)	The next three questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religiou purposes.

Year 1	VARIABLE NAME
People often drink liquor at religious services. Not counting that, in the past month how many glasses of alcoholic beverages, such as beer, wine or whiskey, have you had? Write the number of glasses here: ..... _____ Number of alcoholic beverages	AMTDRK

Year 6	Years 7-8	Years 9-10	VARIABLE NAME
During the past 30 days, on how many days did you have at least one drink of alcohol?	Same as Year 6	Same as Years 7-8	ALCHLFRQ
I have never had a drink of alcohol or only had a few sips	Dropped this choice		
None	Same as Year 6		
1 or 2 days	Same as Year 6		
3 to 5 days	Same as Year 6		
6 to 9 days	Same as Year 6		
10 to 19 days	Same as Year 6		
20 to 29 days	Same as Year 6		
All 30 days	Same as Year 6		
On the days when you do drink, how many drinks do you usually have? (If you do not drink write "0" on the line.)	During the past 30 days, on the days when you did drink, how many drinks did you usually have? (If you did not drink write "0" on the line.)	Same as Years 7-8 (One drink means: 12 oz. of beer, ale or malt liquor 12 oz. of wine cooler 8 oz. of a mixed drink such as gin and juice, 7&7, or Brass Monkey, etc. 6 oz. of wine 1½ oz. or a shot of vodka, tequila, Jack Daniels, etc. (**For example,** a 40 oz. bottle of beer would count as 3 drinks.) Write the number of drinks here. If you did not drink, write "0" on the line.	ALCHLNUM

GROWTH AND HEALTH STUDY
NUTRITION FORM

During the past 30 days, on how many days did you have at least one drink of alcohol? None 1 or 2 days 3 to 5 days 6 to 9 days 10 to 19 days 20 to 29 days All 30 days	Years 7, 9	ALCHLFRQ
During the **past 30 days**, on how many days did you have **four or more drinks** of alcohol in a row, that is, within a couple of hours? 0 days 1 day 2 days 3-5 days 6-9 days 10 or more days	Years 8-10	DRNK4ROW
Year 6	Year 7-8	VARIABLE NAME
The next five questions ask about cigarette smoking. (Remember, all information that you give us is confidential and will NOT be shared with parents, guardians, teachers, or friends.)	The next three questions ask about smoking.	
How old were you when you smoked a cigarette for the first time? I have never smoked a whole cigarette Less than 9 years old 9 or 10 years old 11 or 12 years old 13 or 14 years old 15 years old	Year 6	SMKAGE
Years 6-8	Years 9-10	
How much do you smoke cigarettes? I've never smoked I've smoked once or twice I've smoked a few times I smoke occasionally but less than once a month I smoke weekly but not every day I smoke every day or nearly every day	Same as Years 6-8 I've smoked in the past but do not smoke now	SMKAMT
How old were you when you first started smoking cigarettes regularly? (Nearly every day for 30 days.) I have never smoked cigarettes regularly Less than 9 years old 9 or 10 years old 11 or 12 years old 13 or 14 years old 15 years old	Year 6	SMK30AGE

GROWTH AND HEALTH STUDY
NUTRITION FORM

Year 6	Years 7-10	VARIABLE NAM
During the past 30 days, on how many days did you smoke cigarettes? None 1 or 2 days 3 to 5 days 6 to 9 days 10 to 19 days 20 to 29 days All 30 days	I did not smoke cigarettes during the past 30 days Same as Year 6	SMK30DAY
During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day? I did not smoke cigarettes during the past 30 days Less than 1 cigarette per day 1 cigarette per day 2 to 5 cigarettes per day 6 to 10 cigarettes per day 11 to 20 cigarettes per day More than 20 cigarettes per day	During the past 30 days, on the days you smoked, about how many cigarettes did you usually smoke per day? (Write "0" if you did not smoke during the last 30 days.)..___ ___	YR 6 SMK30AM YR 7-10 NCIGDA
Do you believe smoking helps people keep their weight down?	Years 9-10	SMKLOWT
During the **past 3 months**, how satisfied have you felt with your weight?	Years 8-10	SATWT
During the **past 3 months**, how important was your weight to how you felt about yourself?	Years 8-10	IMPWTFEL
Year 8	Years 9-10	
Would you say that you: (Mark one box only.) Eat less food than most girls your age? Eat about as much food as most girls your age? Eat more food than most girls your age?	Same as Year 8 except "young women" substituted for "girls."	EATAGE
Would you say that you: (Mark one box only.) Eat less junk food than most girls your age? Eat about as much junk food as most girls your age? Eat more junk food than most girls your age?	Same as Year 8 except "young women" substituted for "girls."	JNKAGE

GROWTH AND HEALTH STUDY
NUTRITION FORM

Year 8	Years 9-10	VARIABLE NAM
During the **past 3 months** have you eaten unusually large amounts of food at one time and felt that you were unable to stop eating once you started? If yes, how often have you done this in the **past 3 months**? I have not done this at all in the past 3 months Rarely (once or twice in the past 3 months) Sometimes (3 to 11 times in the past 3 months) Often (12 to 23 times in the past 3 months) Regularly (24 times or more in the past 3 months)	During the **past 12 months** have you eaten unusually large amounts of food at one time <u>and felt that you were unable to stop eating</u> once you started? How often have you done this in the **past 12 months**? I have not done this at all in the past 12 months Rarely (one to four times in the past 12 months) Sometimes (once a month or less) Often (once a week or less) Regularly (twice a week or more)	NSTP3MO NSTP3FQ not asked yr 9,10 (because of skip)
During the **past 12 months** have you eaten unusually large amounts of food at one time and felt you were unable to stop eating once you started? If yes, how often have you done this in the **past 12 months**? I have not done this at all in the past 12 months Rarely (one to four times in the past 12 months) Sometimes (once a month or less) Often (once a week or less) Regularly (twice a week or more)	How often have you done this in the **past 3 months**? I have not done this at all in the past 3 months Rarely (once or twice in the past 3 months) Sometimes (3 to 11 times in the past 3 months) Often (12 to 23 times in the past 3 months) Regularly (24 times or more in the past 3 months) The two questions from Year 8 were combined and the time periods were reversed in Years 9 and 10.	NSTP12MO NSTP12FQ

nstp3mo = NO
skip nstp3fq

nstp12mo = NO
skip nstp12fq

nstp12mo = NO
skip nstp12fq
nstp3fq

(Can create nstp3mo from other responses)

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 8-10	VARIABLE NAME
Lots of people talk about nutrition these days. We are trying to learn what people your age believe about the foods they eat. Please answer the following:	
I don't need to worry about what I eat:	
if I drink enough milk	IFMILK
if I maintain my weight	IFWT
if I take vitamins regularly	IFVITMN
if I eat a low-fat diet	IFLOFAT
I would eat fast food more often:	
if I had more money	FFMONEY
if it were more nutritious	FFNUTR
if it contained less fat	FFLSFAT
if it had fewer calories	FFLOCAL
if there were more fast food restaurants near where I live	FFMRRST
It is important for me to choose foods that:	
are low in sugar	CHLOSUG
are low in fat	CHLOFAT
are low in calories	CHLOCAL
include plenty of breads, cereals, pasta and rice	CHGRN
include plenty of fruits and vegetables	CHFRUIT
include a variety of foods	CHVARTY
include plenty of milk and cheese	CHDAIRY
include plenty of meat, fish and chicken	CHMEAT
Do you read the nutrition information on food labels?	READNUTR
If YES, how often do you do the following?	
When I read the information on nutrition labels I find it confusing	NTRCONFS
I read the nutrition labels on snack foods	NTRSNAK
I read the nutrition labels for calorie information	NTRCAL
I read the nutrition labels for information on the amount of fat	NTRFAT
I use the information on nutrition labels to help me choose the foods I eat	NTRCHOS

GROWTH AND HEALTH STUDY
NUTRITION FORM

Years 9-10

Put a check in the box that best describes how often you usually eat the following foods:

	Never eat this food 1	Eat less than once a week 2	Eat 1-3 times a week 3	Eat 4-6 times a week 4	Eat once a day 5	Eat 2 times a day 6	Eat 3 or more times a day 7	
A. French fries or other fried potatoes								FFRDA FFRDB
B. Potatoes - not fried								POTA POTB
C. Salad								SALADA SALADB
D. Vegetables - not salad								VEGA VEGB
E. Fruit Juice								FJUICA FJUICB
F. Fruit								FRUITA FRUITB

Please check the oil, fat, or salad dressing you add most often to the following foods:

	Never eat this food 1	Vegetable Oil 2	Olive Oil 3	Margarine 4	Diet Margarine 5	Butter 6	Mayonnaise 7	Diet or Light Mayonnaise 8	Regular Salad Dressing 9	Low Calorie Salad Dressing 10	Fat Free or No Fat Salad Dressing 11	Sour Cream 12	Diet Sour Cream 13	Fat or Salad Dressing never used 14	
A. Salad															SALADNA SALADNB
B. Vegetables															VEGNA VEGNB
C. Potatoes															POTANA POTANB
D. Bread and rolls															BREADA BREADB

Year 9: Not used

Year 9: Diet Salad Dressing

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 01

YEAR 01	NGHS1	NGHS2	NGHS3
Format:			
In person, telephone, mailed, or other	In person	In person	In person
Presenter	Nutritionists	Certified Nutritionists	General Interviewers, Certified Nutritionists
Presentation Time	Approx. 1 hour	1 hour	1- 1 ¼ hours
Audience	Usually 10-16, sometimes fewer	Usually 10-20	Individual and small groups (5-10 girls)
Location(s)	Schools	Schools	Participant homes, Clinics
Materials:			
Used Outline/Script	Yes	Yes	Yes (updated)
Props, etc.	Measuring cups and spoons, ruler, cereal, and sugar props, watch, flip chart	Measuring cups and spoons, ruler, watch, sponge props, shapes	Measuring cups and spoons, ruler, cereal, sugar and sponge props, watch, flip chart
Other written materials	Measuring exercise page	Measuring exercise page	Measuring Exercise Page (updated)
Special Features:			
Demo Measuring	Yes	Yes	Yes
Measuring Exercise	Yes	Yes	Yes
Other	Booklet instructions included in diary with age appropriate pictures	Booklet instructions included in diary with age appropriate pictures	Booklet instructions included in diary with age appropriate pictures
Other Comments F.D.[1]	Sample meal recorded on super enlarged diary page (20"x36" approx.)	Sample meal recorded on enlarged diary page	Sample meal recorded on enlarged diary page
Other Comments A.D.[2]	None	None	None
Other General Comments	None		Moved from home visit model to clinic model

[1] Food Diary
[2] Activity Diary

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 02

YEAR 02	**NGHS1**	**NGHS2**	**NGHS3**
Format:			
In person, telephone, mailed, or other	In person	In person	In person
Presenter	Certified Nutritionist	Certified Nutritionist	Certified Nutritionist and assistant
Presentation Time	Approx. 1 hour	1 hour	1 hour
Audience	Usually 8-14 girls, sometimes fewer	Approximately 10-20	Individual and groups (5-15 girls)
Location(s)	Schools	Schools	Participant homes, Clinics
Materials:			
Used Outline/Script	Yes	Yes	Yes (updated)
Props, etc.	Measuring cups and spoons, ruler, watch, enlarged F.D. and A.D. pages, flip chart	Measuring cups and spoons, ruler, watch, enlarged food and activity diary pages	Measuring cups and spoons, ruler, watch, enlarged F.D. and A.D. pages, enlarged ruler drawing
Other written materials	Measuring exercise page	Measuring exercise and Did You Remember To Tell Us Handout	• Measuring Exercise Page (updated) • Handout: Did You Remember To Tell Us
Special Features:			
Demo Measuring	Yes	Yes	Yes
Measuring Exercise	Yes	Yes	Yes
Other	Assistant was used with larger groups	Sometimes used two presenters	Assistant was used with larger groups
Other Comments F.D.	Sample meal recorded on enlarged diary page Practice recording exercise New ruler with fraction markings introduced	Sample meal recorded on enlarged diary page Practice recording exercise New ruler with fractions introduced	• Sample meal recorded on enlarged diary page • Practice recording exercise • New ruler with fraction markings introduced
Other Comments A.D.	Practice recording exercise	Practice recording exercise	Practice recording exercise
Other General Comments	Emphasis on filling out forms	Emphasis on filling out forms	Emphasis on filling out forms

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 03

YEAR 03	NGHS1	NGHS2	NGHS3
Format:			
In person, telephone, mailed, or other	In person	In person	In person
Presenter	Certified Nutritionists	Certified Nutritionists	Certified Nutritionists
Presentation Time	45 mins	45 mins	45 mins
Audience	Usually 8-12 girls, sometimes fewer	Approximately 10-20	Individual and small groups (5-10 girls)
Location(s)	Schools	Schools	Participant homes, Clinics
Materials:			
Used Outline/Script	Yes	Yes	Yes (updated)
Props, etc.	Measuring cups and spoons, ruler, sponge props, watch, flip chart	Measuring cups and spoons, ruler, watch, sponge props, shapes	Measuring cups and spoons, ruler, sponge props, watch, flip chart
Other written materials		Measuring exercise Page Crossword Puzzle	1. Measuring Exercise Page (updated) 2. Crossword Puzzle Page
Special Features:			
Demo Measuring	Yes	No	No
Measuring Exercise	Yes	Yes	Yes, but only 2 shapes
Other	Practice recording on enlarged A.D.	Crossword puzzle Practice recording for activity diary	• Crossword Puzzle given to take home • Practice exercise for A.D.
Other Comments F.D.	Booklet instructions with Why, When and What format New "Drinks" page added to diary	Booklet instructions with Why, When, and What format New drinks page added to diary	• Booklet instructions with Why, When and What format • New "Drinks" page added to diary
Other Comments A.D.	Introduced Caltrac	Introduced Caltrac	Introduced Caltrac
Other General Comments	More emphasis on A.D. than in Y1 or Y2	More emphasis on A.D. than in Yr. 1 or Yr. 2	More emphasis on A.D. than in Y1 and Y2

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 04

YEAR 04	NGHS1	NGHS2	NGHS3
Format:			
In person, telephone, mailed, or other	In person	In person	In person
Presenter	Certified Nutritionists	Certified Nutritionists	Certified Nutritionists
Presentation Time	40 minutes	30-45 min.	30-45 mins
Audience	Usually 8-12 girls, sometimes fewer	Approximately 10-20	Individual and small groups (5-10 girls)
Location(s)	Schools	Schools	Participant homes, Clinics
Materials:			
Used Outline/Script	Yes (updated)	Yes	Yes
Props, etc.	Measuring cups and spoons, ruler, watch	Measuring cups and spoons, ruler, watch	Measuring cups and spoons, ruler, watch
Other written materials	1. Updated Diary Instructions 2. Caltrac cards	Updated diary instructions Caltrac cards	1. Review Questions and Crazy Quips 2. Study Information card added to Caltrac pouch
Special Features:			
Demo Measuring	No	No	No
Measuring Exercise	No	No	No
Other	Group discussion	Answered questions	Independent exercise then group review
Other Comments F.D.	None	None	None
Other Comments A.D.	Caltrac review	Caltrac review	Caltrac review
Other General Comments	Abbreviated instructions	Abbreviated instructions	Abbreviated instructions

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 05

YEAR 05	NGHS1	NGHS2	NGHS3
Format:			
In person, telephone, mailed, or other	Video instructions and in person	In person	Video Instructions and in person
Presenter	Certified Nutritionists	Certified Nutritionists	General Interviewers, Certified Nutritionists
Presentation Time	30-40 mins.	30 mins.	30 mins.
Audience	Usually 8-12 girls, sometimes fewer	Approximately 10-20	Individual and small groups (5-10 girls)
Location(s)	Mostly schools, some homes and clinics	Schools	Participant homes, Clinics
Materials:			
Used Outline/Script	Yes, for home visit instructions	Yes	Yes, for home visit instructions
Props, etc.	Video	Measuring cups and spoons	Video
Other written materials	NGHS Rhyme	None	None
Special Features:			
Demo Measuring	On video	No	On video
Measuring Exercise	No	No	No
Other	Review session after video showing	No	Review session after video showing
Other Comments F.D.	Vitamin/Mineral stickers issued	Vitamin /Mineral stickers used	Vitamin/Mineral stickers issued
Other Comments A.D.	Caltrac included	Caltrac included	Caltrac included
Other General Comments	In response to participant boredom in year 4, Berkeley made a video with study participants and shared it with other centers	None	Westat made a video with study participants, included some footage from Berkeley's video

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 07

YEAR 07	**NGHS1**	**NGHS2**	**NGHS3**
Format:			
In person, telephone, mailed, or other	Primarily in person	Mailed and telephone	In person and telephone
Presenter	Certified Instructor	Certified Nutritionist	Certified Nutritionists
Presentation Time	10 mins.	10 mins.	10 mins.
Audience	Small group (2-5) or individual	Individual	Individual
Location(s)	Home or clinic	Home	Clinics for in person, home for telephone
Materials:			
Used Outline/Script	Yes	Yes	Yes (updated)
Props, etc.	None	None	None
Other written materials	Call record for recording contact attempts and outcome	Call record for recording contact attempts and outcome	Call record for recording contact attempts and outcome
Special Features:			
Demo Measuring	No	No	No
Measuring Exercise	No	No	No
Other	none	None	None
Other Comments F.D.	New instructions to skip every other line	New instructions to skip every other line	New instructions to skip every other line
Other Comments A.D.	No Caltrac	No Caltrac	No Caltrac
Other General Comments	Instructions provided brief review of diary Instructor is trained and monitored	Instructions provided brief review of diary Instructor is trained	• Instructions provided brief review of diary • Instructor is trained and monitored

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 08

YEAR 08	**NGHS1**	**NGHS2**	**NGHS3**
Format:			
In person, telephone, mailed, or other	Primarily in person	Mailed and telephone	In person and telephone
Presenter	Certified Instructor	Certified Nutritionist	Certified Nutritionists
Presentation Time	10 mins.	10 mins.	10 mins.
Audience	Small group (2-5) or individual	Individual	Individual
Location(s)	Clinic or home	Home	Clinics for in person, home for telephone
Materials:			
Used Outline/Script	Yes	Yes	Yes
Props, etc.	None	None	None
Other written materials	Call record for recording contact attempts and outcome	Call record for recording contact attempts and outcome	Call record for recording contact attempts and outcome
Special Features:			
Demo Measuring	No	No	No
Measuring Exercise	No	No	No
Other	None	None	None
Other Comments F.D.	None	None	None
Other Comments A.D.	No Caltrac	No Caltrac	No Caltrac
Other General Comments	Instructor is trained and monitored	Instructor is trained Travel visits begin	• Instruction outcomes reported • Instructor is trained and monitored

NGHS
CENTER DIFFERENCES
DIARY INSTRUCTIONS
YEAR 10

YEAR 10	**NGHS1**	**NGHS2**	**NGHS3**
Format:			
In person, telephone, mailed, or other	Primarily by telephone	Mailed and telephone	In person and telephone
Presenter	Certified Instructors	Certified instructors	Certified Nutritionists
Presentation Time	10 mins.	5 mins.	10 mins.
Audience	Individual	Individual	Individual
Location(s)	Home	Home	Clinics for in person Home for telephone
Materials:			
Used Outline/Script	Yes	Yes	Yes
Props, etc.	None	None	None
Other written materials	1. Separate instruction sheet included in mailing 2. Call record for recording contact attempts and outcome	Instructions included in diary Call record for recording contact attempts and outcome	1. Separate Instruction Sheet included in mailing 2. Call record for recording contact attempts and outcome
Special Features:			
Demo Measuring	No	No	No
Measuring Exercise	No	No	No
Other	None	None	None
Other Comments F.D.	None	None	None
Other Comments A.D.	No Caltrac	No Caltrac	No Caltrac
Other General Comments	Instructor is trained and monitored	Instructor is trained Travel visits Some telephone retrievals	• Instruction outcomes reported • Instructor is trained and monitored

Summary of "Major" Structural Changes in PA Diary (Form 11) and the methods to address these changes in the longitudinal data file

1) Yr 1 to Yr 2: Pictures of 24 activities were changed to 9 activity groups based on intensity.

Action:

The 24 activities from Year 1 were rearranged, analogous to the activities subsumed in the 9 groupings for Year 2.

We truncated the total maximum duration of activities within each grouping to 45 minutes, to be in line with later years. (See attached memo)

2) Yr 1 to Yr 2: Number of "Parts of the Day" changed from 4 to 3.
Yr 2 to Yr 3: Number of "Parts of the Day" changed from 3 to 5.
Yr 3 to Yr 10: Number of "Parts of the Day" were changed back to 3.

Action:

We did not modify the scoring program for the change from Year 1 to Year 2.

For the Year 3 change, we summed the 2 morning categories and also the 2 afternoon categories to yield the same structure as Yrs 2, 4-5, 7-8, 10.

Because we summed the morning and afternoon categories, the total maximum duration of activity was truncated to 45 minutes to be in line with the other years (same situation as Yr 1).

3) Yr 7 to Yr 8, 10: Number of "Time Intervals" changed from 3 to 4.

Action:

The time interval "over 60 minutes" was added to the diary for Years 8 and 10. In order to be in line with the other diary years, all records reporting "over 60 minutes" were credited with 45 minutes of activity.

4) Yr 1 to Yr 2: Number of blank spaces to write-in "Other" activities changed from 16 to 4.
Yr 2 to Yr 3: Number of blank spaces to write-in "Other" activities changed from 4 to 3

Action:

No action taken.

5) Yrs 1-4 & Yr 8, 10: Activity groupings were modified to reflect age-appropriateness.

Action:

We assigned a uniform Met value for each activity group across all years. This was done by calculating the average MET for each activity group for all diary years.

6) Yr 2 to Yr 3: One (1) new activity group was added.

Action:

The category "walking" was added. No action taken.

7) Yr 8: Six (6) new activity groups were added.

Action:

We assigned a 0 MET value to the new grouping "standing, cooking, typing, dishwashing, light cleaning, doing laundry". After examining the new activity groups added in Yr 8, this group contained many common ADL's which are routinely excluded from the diary.

8) Yr 10: One (1) new activity group was added.

Action:

No action taken.

The group "standing, cooking, etc..." will be assigned 0 METs for Year 10 as in Year 8.

Summary of "Major" Structural Changes in the Questions that Determine the Total Activity Score for the Patterns Questionnaire (Form 12) and the methods to address these changes in the longitudinal data file

1) Yr 1: Revision 0 was administered to 173 participants. This form varied from Revision 1 in the number of responses for activities performed (4 vs 8) and the manner in which sport activities were ascertained (weekend, before school, after school)

Action:

Ellis Clark reorganized weekend, before and after school sports to fit the format for the time frame for Rev 1. No empirical analysis was done as this number, 173, represents a very small proportion of the entire Year 1 cohort.

2) Yr 1 to Yr 3: The frequency of activities which could be reported was changed from an open-ended choice to a maximum of 3 times/week.

Action:

The Year 1 scoring program was reformatted. Those responding 0 days/week were recoded to 1, those reporting 1-2 days/wk of activity received a 2 and those reporting ≥3 days/wk were coded 3.

3) Yr 7: The number of blank spaces to list activities performed for classes, school sports and summer sports changed from 8 to 5.

Action:

We checked the number of participants that listed >5 classes/lessons, school sports and summer sports for Yrs 1, 3 and 5 and exactly 5 activities per category for Yr 7 to asses the impact of this change.

	No. reporting >5 classes	**No. reporting > 5 school sports**	**No. reporting >5 summer sports**
Yr 1:	2	330	241
Yr 3:	5	101	219
Yr 5:	0	48	125
Yr 7:	3	10	30

4) Yr 9 and Yr 10: Participation in classes/lessons was incorporated in the two questions for sports (Sept-May and June-Aug).

Number of total blank spaces available for responses changed from 15 (3 questions x 5 blanks) to 18 (2 questions x 9 blanks).

Action:

For Year 9, only 2 participants listed >15 activities. No action was taken.

REPORTING OF TV HOURS FOR ALL YEARS OF NGHS

Year	Method of Reporting
1	TV hours USUALLY watched were collected using a listing of specific programs. In addition, the number of hours of TV movies or videos watched in the PAST WEEK was asked (one time only). The total number of hours was entered on the Physical Activity Patterns Form (12). Programs were updated once during the year (probably during the fall). Sixteen Westat participants were give both program listings and simple "hourly estimates" to determine the best method of collection. Apparently the program listings were found to be more accurate at this time. Cincinnati used the second method for a short period of time.
2	TV hours were NOT collected at all in Year 2. No Physical Activity Patterns, Form (12), was collected.
3	TV hours USUALLY watched were collected using a listing of specific programs. Programs were updated once during the year. As in Year 1, the number of hours of TV movies or videos watched in the PAST WEEK was asked. A separate sheet for listing music videos USUALLY watched (MTV, Country, and Video Hits-1) was added at some time during the year at Westat*. Berkeley added the letters "MTV" to existing sentence. The total number of hours was entered on the Physical Activity Patterns Form (12). For TV movies the question was asked two times on two separate pages at Westat. This could possibly cause duplicate answers.
4	TV hours were collected (Westat has all forms) but not entered into the system. No Physical Activity Patterns Form was used.
5	TV hours USUALLY watched were collected using program listings with the separate music video page (MTV, Country, and Video Hits-1) used only at Westat. The TV movies or videos question was asked in two places (PAST week and each of the usual days) at Westat. The total was entered on the Physical Activity Patterns Form (12). Cincinnati added "MTV" to existing sentence asking about other programs watched.
6	Hourly estimates USUALLY watched were reported on the Nutrition Form in year 6. Estimates were broken down into morning, afternoon, and nighttime hours. Participants were asked to estimate the number of hours usually spent watching TV for each time period for each day of the week.
7	Same format as year 6 but asked on Form 12.
8	Same as year 7.
9	Same as year 7.
10	Same as year 7.

* TV shows and TV movies/videos were assigned times in ½ hour increments (movies were 1.5 hrs. and music videos were .5 hrs.).

HEALTH BELIEFS & ATTITUDES
Form 13 in Years 1,3,5,7,9
Form 19 in Years 2,4,6,8,10

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
WEIGHT	How happy or unhappy are you with your present weight?	All years - no change
HEIGHT	How happy or unhappy are you with your present height?	Yrs. 1,2,3,4,5,7,9
BODY	How happy or unhappy are you with the way your body looks?	All years - no change
DADWT	Do you think your father (or male guardian) likes your present weight?	Yrs. 1,3,4,5,6,7
MOMWT	Do you think your mother (or female guardian) likes your present weight?	Yrs. 1,3,4,5,6,7,9
	If a girl your age was thin would she:	
POPULTH	a. Have more friends	Years 1,2,3,4,5,6
LESADLTH	b. Look less grown up	
LSCHRGTH	c. Feel less in charge of thinks	
FELBETTH	d. Feel better about herself	
PRETYTH	e. Be prettier	
MORGRLTH	f. Feel more like a girl	
PUSHEDTH	g. Be less likely to get pushed around	
HLTHTH	h. Be healthier	
BROIMAGE	Please check the box under the figure that most looks like an older brother - nearest your age (if you have one)	Yrs. 1,2,3 ("your"), 4 ("an"), 5 ("your"), 6 ("an)
SISIMAGE	Please check the box under the figure that most looks like an older sister - nearest your age (if you have one)	Yrs. 1,2,3 ("your"), 4 ("an"), 5 ("your"), 6 ("an)
GRLIMAGE	Please check the box under the figure that most looks like your best girlfriend.	Yrs. 1,2,3,4,5,6,7,9
YBRO	Do you have a younger brother?	Yr. 5 only
YBROIMAG	Please check the box under the figure that most looks like your younger brother - nearest your age.	Yr. 5 only
YBROAGE	How old is your younger brother nearest your age? _____ years old.	Yr. 5 only
YSIS	Do you have a younger sister?	Yr. 5 only
YSISIMAG	Please check the box under the figure that most looks like your younger sister - nearest your age.	Yr. 5 only
YSISAGE	How old is your younger sister nearest your age? _____ years old.	Yr. 5 only

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
	Have any of these people ever told you that you are too thin?	Yrs. 1,3,5
DAD2TH	a. Your father?	
MOM2TH	b. Your mother?	
BRO2TH	c. Any brother?	
SIS2TH	d. Any sister?	
BGRL2TH	e. A best girlfriend?	
BBOY2TH	f. The boy you like best?	
GRL2TH	g. Any other girl?	
BOY2TH	h. Any other boy?	
TCH2TH	i. Any teacher?	
	Have any of these people ever told you that you are too fat?	Yrs. 1,3,5
DAD2FAT	a. Your father?	
MOM2FAT	b. Your mother?	
BRO2FAT	c. Any brother?	
SIS2FAT	d. Any sister?	
BGRL2FAT	e. A best girlfriend?	
BBOY2FAT	f. The boy you like best?	
GRL2FAT	g. Any other girl?	
BOY2FAT	h. Any other boy?	
TCH2FAT	i. Any teacher?	
	How important are the following things to you?	Yrs. 1,3,5,7,9
ADLTIMP	a. being grown up...	left out in yr. 9
FRNDIMP	b. having lots of friends...	yr. 9 "lots" chgd. to "many"
PRETIMP	c. looking pretty...	
THINIMP	d. looking thin...	
HLTHIMP	e. being healthy...	
MORGRLIM	f. feeling more like a girl...	yr. 9 "girl" chgd. to "woman"
NOFATIMP	g. not getting fat...	
LOVFAMIM	h. having a loving family	
	If a girl your age was fat would she:	Yrs. 1,2,3,4,5,6
POPULFAT	a. Have more friends	
LSADLFAT	b. Look less grown up	
LSCHRGFT	c. Feel less in charge of things	
FELBETFT	d. Feel better about herself	
PRETYFAT	e. Be prettier	
MORGRLFT	f. Feel more like a girl	
PUSHFAT	g. Be less likely to get pushed around	
HLTHFAT	h. Be healthier	

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
	If a girl your age was big (not older) would she:	Yr. 6 only
POPULBIG	a. Have more friends	
LSADLBIG	b. Look less grown up	
LSCHRGBG	c. Feel less in charge of things	
FELBETBG	d. Feel better about herself	
PRETBIG	e. Be prettier	
MORGRLBG	f. Feel more like a girl	
PUSHBIG	g. Be less likely to get pushed around	
HLTHBIG	h. Be healthier	
	How happy or unhappy are you with these parts of your body?	All years
WAIST	a. Your waist	
SKINCOLR	b. Your skin color	dropped from yrs. 7-10
STOM	c. Your stomach	
ARMS	d. Your arms	
BREAST	e. Your breasts	
HIPS	f. Your hips	
LEGS	g. Your legs	
BEHIND	h. Your behind	
THIGHS	i. Your thighs	asked yrs. 8 & 10 only
IMAGNOW	Right now I look like:	All years. Pictures chgd. to v-neck in Yrs. 7-10. Also left out word "right" in yr. 7 + 9.
IMAGBST	I would like it best if I now looked like:	All years. Pictures chgd. to v-neck in Yrs. 7-10.
IMAGTEEN	When I am a **teenager** in high school, I will probably look like:	Yrs. 1-5. "teenager" chgd. to "senior" in yr. 5. V-neck picture used for all years.
IMAGBTEN	When I am a **teenager** in high school, I would like to look like:	Yrs. 1-5. "teenager" chgd. to "senior" in yr. 5. V-neck picture used all years.
IMAGADLT	When I am grownup, 25-30 yrs. old, I will probably look like:	Yrs. 1,2,3,4,5,6,7,9. Dropped "grown up" in yrs. 5,6,7,9.
IMGBADLT	When I am grownup, 25-30 yrs. old, I would like to look like:	Yrs. 1,2,3,4,5,6,7,9. Dropped "grown up" in yrs. 5,6,7,9.
IMAGBFEM	A woman looks best when she looks like:	Yrs. 1,2,3,4,5,6,7,9. Yrs. 1,2,6,7,9 used round neck, more mature pix. Yrs., 3,4,5, used young girl pix w/round neck.

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
	Do you have any close friends who are:	Yrs. 1,3 and 5
FRWHITE	a. white	
FRBLACK	b. black	
FRHISP	c. Hispanic (for example, Puerto Rican, Mexican-American, Cuban, Latin American)?	
FRASIAN	d. Asian (for example, Chinese, Japanese, East Indian or Pacific Islander)?	
FRAMIND	e. American Indian or Alaskan Native (for example, Eskimo)?	
	In your school (check only one box)	Yrs. 1,3,4,5,6
(F13)SCHRACE	All or most of the kids are black About half the kids are black and half the kids are white	Yrs. 4 & 6 used "students" instead of "kids"
(F19)SCHRAC19	All of most of the kids are white	
	None of these describe my school	"None of these..." added yrs. 3,4,5,6
	Think about your friends. Which of the following statements best describes them (check only one box)?	Yrs. 6,7,8,9,10
FRNDRACE	All of most of my friends are black	
	About half my friends are black and half my friends are white	
	All or most of my friends are white	
	None of the above describe my friends	
LOSWT13	Have you ever tried to lose weight?	Yrs 1,3 (added "in last 2 yrs."), 5 (added "in last 4 yrs.")
GAINWT13	Have you ever tried to gain weight?	Yrs. 1,3 (added "in last 2 yrs."), 5 (added "in last 4 yrs.")
LOSWTNW	Are you trying to lose weight now?	Yrs. 1,2,3,4,5. Yrs. 6,7,9,10 (moved to nutrition form). Wording changed to "At the present time are you trying to lose weight"?
GAINWTNW	Are you trying to gain weight now?	Yrs. 1,2,3,4,5. Yrs. 6,7,9,10 (moved to nutrition form). Wording changed to "At the present time are you trying to gain weight"?
MOMTHFAT	Do you think your mother is very thin; thin; not thin or heavy; heavy; very heavy; or is she pregnant now?	Yrs. 1,3,5. Chgd. in yr. 7 to "How thin or heavy do you think your mother is?
B4PREG	If your mother is now pregnant do you think she was very thin, thin, not thin or heavy, heavy, very heavy; before she became pregnant?	Yrs. 1,3,5
FHELP	In my family we ask each other for help.	Yrs. 1,3,5,7
FDOTHNG	We like to do things with just members of our family.	Yrs. 1,3,5,7

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
FCLOSE	In my family we feel closer to each other than to people outside the family.	Yrs. 1,3,5,7
FSPEND	In my family we like to spend free time with each other.	Yrs. 1,3,5,7
FFEEL	In my family we feel very close to each other.	Yrs. 1,3,5,7
FACTIV	When our family gets together for activities, everybody comes.	Yrs. 1,3,5,7
FTHINK	We can easily think of things to do together as a family.	Yrs. 1,3,5,7
FASK	In my family we ask other family members about our decisions.	Yrs. 1,3,5,7 (used "consult" instead of ask).
FTOGETH	In my family togetherness is very important.	Yrs. 1,3,5,7 (left out "in my")
FAPPROVE	In my family we approve of each others friends.	Asked in Year 7 only
	How important to you are each of the following?	Yrs. 2 and 4
DANCIMP	a. dancing	
MUSICIMP	b. playing a musical instrument	
DRAWIMP	c. painting or drawing	
SKOLIMP	d. doing well in school	
READIMP	e. reading	
PETIMP	f. taking care of a pet	
SPRTIMP	g. being good in sports	
DIETIMP	h. dieting	
BABIMP	i. baby-sitting	
FAMIMP	j. doing family activities	
COKIMP	k. cooking	
LOKIMP	l. keeping yourself looking the way you want	
DATIMP	m. dating	
FRNDIMP	n. making and keeping friends	

VARIABLE NAME	QUESTION	YEARS ASKED/CHANGES
	How good are you at each of the following?	Yrs. 2 and 4
DANCGD	a. dancing	
MUSICGD	b. playing a musical instrument	
DRAWGD	c. painting or drawing	
SKOLGD	d. doing well in school	Yr. 4 chgd. to "doing well in school"
READGD	e. reading	
PETGD	f. taking care of a pet	
SPRTGD	g. being good in sports	
DIETGD	h. dieting	
BABGD	i. baby-sitting	
FAMGD	j. doing family activities	
COKGD	k. cooking	
LOKGD	l. keeping yourself looking the way you want	
DATGD	m. dating	
FRNDGD	n. making and keeping friends	
	How often do you:	Yrs. 7 and 9
DEPRESS	a. get depressed	
ANXIOUS	b. feel anxious	
TRBLUP	c. have trouble getting up in the morning	
CRYING	d. have crying episodes	
IRRITAB	e. feel irritable	
TIRED	f. feel tired	
TRBLSLEP	g. have trouble falling asleep	
ANGRY	h. get angry	
MENLIKE	Young men like young women who look like:	Yrs. 8 and 10 (v-neck pix)

VARIABLE NAME	QUESTION	CES-D YEARS ASKED/CHANGES
	During the past week:	Yrs. 8 and 10
CESD1	I was bothered by things that usually don't bother me.	
CESD2		
CESD3	I felt that I could not shake off the blues even with help from my family or friends.	
CESD4	I felt that I was just as good as other people.	
CESD5	I had trouble keeping my mind on what I was doing.	
CESD6	I felt depressed.	
CESD7	I felt that everything I did was an effort.	
CESD8	I felt hopeful about the future.	
CESD9	I thought my life had been a failure.	
CESD10	I felt fearful.	
CESD11	My sleep was restless.	
CESD12	I was happy.	
CESD13	I talked less than usual.	
CESD14	I felt lonely.	
CESD15	People were unfriendly.	
CESD16	I enjoyed life.	
CESD17	I had crying spells.	
CESD18	I felt sad.	
CESD19	I felt that people disliked me.	
CESD20	I could get "going".	

VARIABLE NAME	QUESTION	DOTS-R ADULT YEARS ASKED/CHANGES
DOTSR1	It takes me a long time to get used to a new thing in the home.	Yr. 10 only ↓
DOTSR2	I can't stay still for long.	
DOTSR3	I laugh and smile at a lot of things.	
DOTSR4	I wake up at different times.	
DOTSR5	Once I am involved in a task, nothing can distract me from it.	
DOTSR6	I persist at a task until it's finished.	
DOTSR7	I move around a lot.	
DOTSR8	I can make myself at home anywhere.	
DOTSR9	I can always be distracted by something else, no matter what I may be doing.	
DOTSR10	I stay with an activity for a long time.	
DOTSR11	If I have to stay in one place for a long time, I get very restless.	
DOTSR12	I usually move toward new objects shown to me.	
DOTSR13	It takes me a long time to adjust to new schedules.	
DOTSR14	I do not laugh or smile at many things.	
DOTSR15	If I am doing one thing, something else occurring won't get me to stop.	
DOTSR16	I eat about the same amount for dinner whether I am home, visiting someone, or traveling.	
DOTSR17	My first reaction is to reject something new or unfamiliar to me.	
DOTSR18	Changes in plans make me restless.	
DOTSR19	I often stay still for long periods of time.	
DOTSR20	Things going on around me can <u>not</u> take me away from home.	
DOTSR21	I take a nap, rest, or break at the same time every day.	
DOTSR22	Once I take something up, I stay with it.	
DOTSR23	Even when I am supposed to be still, I get very fidgety after a few minutes.	
DOTSR24	I am hard to distract.	
DOTSR25	I usually get the same amount of sleep each night.	
DOTSR26	On meeting a new person I tend to move toward him or her.	
DOTSR27	I get hungry about the same time each day.	
DOTSR28	I smile often.	
DOTSR29	I never seem to stop moving.	
DOTSR30	It takes me no time at all to get used to new people.	
DOTSR31	I usually eat the same amount each day.	
DOTSR32	I move a great deal in my sleep.	
DOTSR33	I seem to get sleepy just about the same time every night.	
DOTSR34	I do not find that I laugh often.	
DOTSR35	I move toward new situations.	

VARIABLE NAME	QUESTION	DOTS-R ADULT YEARS ASKED/CHANGES
DOTSR36	When I am away from home, I still wake up at the same time each morning.	Yr. 10 only ↓
DOTSR37	I eat about the same amount of breakfast from day to day.	
DOTSR38	I move a lot in bed.	
DOTSR39	I feel full of pep and energy at the same time each day.	
DOTSR40	I have bowel movements at about the same time each day.	
DOTSR41	No matter when I go to sleep, I wake up at the same time the next morning.	
DOTSR42	In the morning, I am still in the same place as I was when I fell asleep.	
DOTSR43	I eat about the same amount at supper from day to day.	
DOTSR44	When things are out of place, it takes me a long time to get used to it.	
DOTSR45	I wake up at the same time on weekends and holidays as on other days of the week.	
DOTSR46	I don't move around much at all in my sleep.	This Q. was omitted for part of yr. 10
DOTSR47	My appetite seems to stay the same day after day.	
DOTSR48	My mood is generally cheerful.	
DOTSR49	I resist changes in routine.	
DOTSR50	I laugh several times a day.	
DOTSR51	My first response to anything new is to move my head toward it.	
DOTSR52	Generally, I am happy.	
DOTSR53	The number of times I have a bowel movement on any day varies from day to day.	
DOTSR54	I never seem to be in the same place for long.	

Form 15 - WHAT I AM LIKE
Phrasing Comparison
Harter Self-Perception Profile

Scale Variable Name	Scale	Yr. Asked	Quest. #	Harter Phrasing	NGHS Phrasing
BEHCD	Behavioral Conduct	Yr. 5 only	#16	Some teenagers often get in trouble for the things they do BUT other teenagers don't do things that get them in trouble.	Some teenagers often feel guilty about certain things they do BUT other teenagers hardly ever feel guilty about what they do.
CLOSECP	Close Friendship	Yrs. 5 & 9	Y 5 #17 Y 9 #10	Some teenagers do have a close friend they can share secrets with BUT other teenagers do not have a really close friend they can share secrets with.	Some teenagers can be trusted to keep secrets that their friends tell them BUT other teenagers have a hard time keeping secrets that their friends tell them.
SOCCP	Social Acceptance	Yrs. 5,7,9	Y 5 #20 Y 7 #9 Y 9 #13	Some teenagers are kind of hard to like BUT other teenagers are really easy to like.	Some teenagers are very hard to like BUT other teenagers are really easy to like.
BEHCD	Behavioral Conduct	Yr. 5 only	#25	Some teenagers feel really good about the way they act BUT other teenagers don't feel that good about the way they often act.	Some teenagers are usually pleased with the way they act BUT other teenagers are often ashamed of the way they act.
CLOSECP	Close Friendship	Yrs. 5 & 9	Y 5 #26 Y 9 #16	Some teenagers wish they had a really close friend to share things with BUT other teenagers do have a really close friend to share things with.	Some teenagers don't really have a close friend to share things with BUT other teenagers do have a close friend to share things with (also, we didn't underline do).
JOBCP	Job Competence	Yrs. 5 & 9	Y 5 #41 Y 9 #27	Some teenagers feel that they are really able to handle the work on a paying job BUT other teenagers wonder if they are really doing as good a job at work as they should be doing.	Some teenagers feel that it's really important to do the best you can on paying jobs BUT other teenagers feel that getting the job done is what really counts.
INTRLCP	Intimate Relationships	Yr. 9 only	#'s 6, 12, & 24	Some "adults"....	Changed to Some "teenagers"....
PHYAP	Physical Appearance	Yrs. 5,7,9	Y 5 #4 Y 7 #2 Y 9 #2	Some teenagers are not happy with the way they look BUT other teenagers are happy with the way they look.	Same wording but we did not underline not and are.
LOVECP	Romantic Appeal	Yrs. 5, 7	Y 5 #6 Y 7 #3	Some teenagers feel that if they are romantically interested in someone, that person will like them back BUT other teenagers worry that when they like someone romantically, that person won't like them back.	Same wording but we did not underline won't.

JOBCP	Job Competence	Yrs. 5, 9	Y 5 #14 Y 9 #9	Some teenagers feel that they don't have enough skills to do well at a job BUT other teenagers feel that they do have enough skills to do a job well.	Same wording but we did not underline don't and do.
LOVECP	Romantic Appeal	Yrs. 5, 7	Y 5 #15 Y7 #7	Some teenagers are not dating the people they are really attracted to BUT other teenagers are dating those people they are attracted to.	Same wording but we did not underline not and are.
ATHCP	Athletic Competence	Yr. 5 only	Y 5 #39	Some teenagers do not feel that they are very athletic BUT other teenagers feel that they are very athletic.	Same wording but we did not underline are.
LOVECP	Romantic Appeal	Yrs. 5, 7	Y 5 #42 Y 7 #19	Some teenagers usually don't get asked out by people they would like to date BUT other teenagers do get asked out by people they really want to date.	Same wording but we did not underline don't and do.
CLOSECP	Close Friendship	Yrs. 5, 9	Y 5 #44 Y 9 #28	Some teenagers don't have a friend that is close enough to share really personal thoughts with BUT other teenagers do have a close friend that they can share personal thoughts and feelings with.	Same wording but we did not underline don't.

The phrasing of all NGHS questions remained the same throughout all years on this form. These represent the differences in phrasing of these NGHS questions from the original phrasing in the Harter Manual.

Form 15 - WHAT I AM LIKE
Phrasing Comparison
Harter Self-Perception Profile

Scale Variable Name	Scale	YEAR 1	YEAR 3	YEAR 5	YEAR 7	YEAR 9
SCHCP	Scholastic Competence	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked	NOT USED	NOT USED
SOCCP	Social Acceptance	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked*	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked
ATHCP	Athletic Competence	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked	NOT USED	NOT USED
PHYAP	Physical Appearance	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked
BEHCP	Behavioral Conduct	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked*	NOT USED	NOT USED
SELWT	Global Self-Worth	**child** scale used 6 of 6 questions asked	**child** scale used 6 of 6 questions asked	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked
JOBCP	Job Competence	NOT USED	NOT USED	**adolescent** scale used 5 of 5 questions asked*	NOT USED	**adolescent** scale used 5 of 5 questions asked*
LOVECP	Romantic Appeal	NOT USED	NOT USED	**adolescent** scale used 5 of 5 questions asked	**adolescent** scale used 5 of 5 questions asked	NOT USED
CLOSECP	Close Friendship	NOT USED	NOT USED	**adolescent** scale used 5 of 5 questions asked*	NOT USED	**adolescent** scale used 5 of 5 questions asked*
INTRLCP	Intimate Relationships	NOT USED	NOT USED	NOT USED	NOT USED	**adult** scale used 4 of 4 questions asked*
	Importance Ratings	NOT USED	**child** scale used 10 questions asked (2 for each of 5 scales administered)	**adolescent** scale used 16 questions asked (2 for each of 8 scales administered)	**adolescent** scale used 6 questions asked (2 for each of 3 scales administered)	**adolescent** scale used 8 questions asked (2 for each of 4 scales administered) **adult** scale - 1 question asked for intimate **relationships** scale*

*Indicates some changes in phrasing - see Table (Phrasing Comparison)

MY PROBLEMS
FORM 22
YEARS 2, 4, 6, 8, 10

The "My Problems" form was basically the same for all years except for two questions that were added in Years Eight and Ten. They were:

15. I worried that I didn't have enough money for things I needed. **(ITEM 15)**

16. I worried that I will never have enough money for the things I need. **(ITEM 16)**

Comparison of My Problems//Form 22 (Years 2, 4, 6, 8, 10)

Variable Name	Year 2	Year 4	Year 6	Year 8	Year 10
Item 1	I was upset because of something I didn't expect.	same	same	same	same
Item 2	I felt that I could not do something about important things.	same	same	same	same
Item 3	I felt nervous and like everybody was pushing me.	same	same	same	same
Item 4	I was able to solve annoying problems.	same	same	same	same
Item 5	I felt that I was able to handle big changes.	same	same	same	same
Item 6	I felt sure could handle my personal problems.	same	same	same	same
Item 7	I felt that things were going my way.	same	same	same	same
Item 8	I found that I could not handle all the things that I had to do.	same	same	same	same
Item 9	I was able to do something about the things that bothered me.	same	same	same	same
Item 10	I felt that I had finished everything I needed to do.	used "need"	same as Year 2	same as Year 2	same
Item 11	I felt angry when things happened that I couldn't do anything about.	same	same	same	same
Item 12	I found myself thinking about things that I had to get done.	same	same	same	same
Item 13	I was able to do something about the way I spend my time.	same	same	same	same
Item 14	I felt that my problems were becoming so big that I could not handle them.	same	same	same	same
Item 15				I worried that I didn't have enough money for things I needed.	same
Item 16				I worried that I will never have enough money for the things I need.	same

What I Think and Feel/Form 23 (Years 3 and 5)

	Year 3	Year 5	Variable Name
1	I have trouble making up my mind.	same	ITEM1
2	I get nervous when things do not go the right way.	same	ITEM2
3	Others seem to do things easier than I can.	same	ITEM3
4	I like everyone I know.	same	ITEM4
5	Often I have trouble getting my breath.	same	ITEM5
6	I worry a lot of the time.	same	ITEM6
7	I am afraid of a lot of things.	same	ITEM7
8	I am always kind.	same	ITEM8
9	I get mad easily.	same	ITEM9
10	I worry about what my parents will say to me.	same	ITEM10
11	I feel that others do not like the way I do things.	same	ITEM11
12	I always have good manners.	same	ITEM12
13	It is hard for me to get to sleep at night.	same	ITEM13
14	I worry about what other people think about me.	same	ITEM14
15	I feel alone even when there are people with me.	same	ITEM15
16	I am always good.	same	ITEM16
17	Often I feel sick in my stomach.	same	ITEM17
18	My feelings get hurt easily.	same	ITEM18
19	My hands feel sweaty.	same	ITEM19
20	I am always nice to everyone.	same	ITEM20
21	I am tired a lot.	same	ITEM21
22	I worry about what is going to happen.	same	ITEM22
23	Other people are happier than I.	same	ITEM23
24	I tell the truth every single time.	same	ITEM24
25	I have bad dreams.	same	ITEM25
26	My feelings get hurt easily when I am fussed at.	same	ITEM26
27	I feel someone will tell me I do things the wrong way.	same	ITEM27
28	I never get angry.	same	ITEM28
29	I wake up scared some of the time.	same	ITEM29
30	I worry when I go to bed at night.	same	ITEM30
31	It is hard for me to keep my mind on my school work.	same	ITEM31
32	I never say things I shouldn't.	same	ITEM32
33	I wiggle in my seat a lot.	same	ITEM33
34	I am nervous.	same	ITEM34
35	A lot of people are against me.	same	ITEM35
36	I never lie.	same	ITEM36
37	I often worry about something bad happening to me.	same	ITEM37
	Total Anxiety Score		ANXR
	Physiological Anxiety Score		PAR
	Worry/Oversensitivity Score		WOR
	Social Concern/Concentration Score		SCCR
	Lie Scale Score		LIER

HOW I DEAL WITH THINGS
FORM 24
YEARS 2, 4, 6, 8, 10

The "How I Deal With Things" form remained the same for all years except for the wording in the directions. In years 4, 6, 8 and 10 "people your age" was used instead of "other kids".

Comparison of How I Deal With Things/Form 24 (Years 2, 4, 6, 8, 10)

	Year 2			Year 4	Year 6	Year 8	Year 10
directions	"other kids"			"people your age"	"people your age"	"people your age"	"people your age"
variable name							
ITEM 1	I would stand my ground and fight for what I wanted.			same	same	same	same
ITEM 2	I would try to think about something good that might happen. I would try to look on the bright side of things.			same	same	same	same
ITEM 3	I would let out my feelings so that I would feel better.			same	same	same	same
ITEM 4	I would find somebody who would listen to me.			same	same	same	same
ITEM 5	I would go along as if nothing were happening.			same	same	same	same
ITEM 6	I would hope that a miracle would happen.			same	same	same	same
ITEM 7	I would think that I brought the problem on myself.			same	same	same	same
ITEM 8	would spend more time alone.			same	same	same	same
ITEM 9	I would think of what to do and do it.			same	same	same	same
ITEM 10	I would look at things in a different way and try to make the best of what I had.			same	same	same	same
ITEM 11	I would let my feelings out somehow.			same	same	same	same
ITEM 12	I would talk to someone about how I was feeling.			same	same	same	same
ITEM 13	I would try to forget the whole thing.			same	same	same	same
ITEM 14	I would wish that the problem would go away or somehow be over with.			same	same	same	same
ITEM 15	I would blame myself.			same	same	same	same
ITEM 16	I would stay away fro my family and friends.			same	same	same	same
ITEM 17	I would face the problem head on.			same	same	same	same
ITEM 18	I would ask myself if it was really important, and discover that things weren't so bad after all.			same	same	same	same
ITEM 19	I would let my feelings out.			same	same	same	same
ITEM 20	I would talk to someone that I felt very close to.			same	same	same	same
ITEM 21	I wouldn't let it worry me. I would try not to think about it too much.			same	same	same	same
ITEM 22	I wold wish that the problem had never started.			same	same	same	same
ITEM 23	I would blame myself for what happened.			same	same	same	same
ITEM 24	I would try not to be with people.			same	same	same	same
PS1	Problem Solving Score	WT1	Wishful Thinking Score	PFD2	Problem Focused Disengagement Score		
CR1	Cognitive Structure Score	SCRT1	Self Criticism Score	EFD2	Emotion Focused Disengagement Score		
EE1	Express Emotions Score	SW1	Self-withdrawal Score	ENG3	Engagement Score		
SCNT1	Social Contact Score	PFE2	Problem focused Engagement Score	DENG3	Disengagement Score		
PA1	Problem Avoidance Score	EFE2	Emotion Focused Engagement Score				

EVENTS IN THE LAST TWELVE MONTHS
FORM 29
YEARS 8 AND 10

The "Events in the Last Twelve Months" form was the same (Q. 1 - 40) for both years 8 and 10 except that in year ten five questions were added at the end of the form. They were:

1. I lost my job.

2. I was treated differently because of my race.

3. I needed help with my child and couldn't get it.

4. Somebody I know was hit or beaten up by her boyfriend.

5. I was treated differently because of my sex.

MY FEELINGS
EDI
FORM 30 - YEAR 1
FORM 25 - YEARS 3, 5, 7, 9, 10

VARIABLE NAME	SUBSCALES	# OF QUESTIONS	YEAR 1	YEAR 3	YEAR 5	YEAR 7	YEAR 9	YEAR 10
DR4THIN	Drive for Thinness	7 of 7	X (Westat only)	X	X	X	X	X (only Westat used whole form)
BULIM	Bulimia	7 of 7		X	X	X	X	X
BODYDIS	Body Dissatisfaction	9 of 9		X	X	X	X	X
DISTRST	Interpersonal Distrust	7 of 7	X	X	X		X	X
INEFCT	Ineffectiveness	10 of 10	X	X	X		X	X
PERFCT	Perfectionism	6 of 6	X	X	X		X	X
FEARS	Maturity Fears	8 of 8		X (2 extra Q's asked)	X (2 extra Q's asked			X
AWARE	Interoceptive Awareness	10 of 10 3 of 10	X	X	X	X		X
IMPREG	Impulse Regulation	8 of 11 (3 not matched)*					X	
	Dimensions of Temperament Survey (DOTS)						X	

*Three questions did not match up on Impulse Regulation Scale.

IR Scale
1. I have to be careful of my tendency to abuse drugs
2. I feel trapped in relationships
3. I have to be careful of my tendency to abuse alcohol

NGHS Form
1. I take things that don't belong to me
2. I have lots of friends
3. I do things that get me into trouble

*wording different than original on majority of items on various subscales

MARYLAND MEDICAL RESEARCH INSTITUTE

June 7, 1996

MEMORANDUM

TO: Dennis Sprecher, M.D.

FROM: Robert McMahon, Ph.D. RM

SUBJECT: Correlations of Two-Year Changes (Baseline to Visit 3) of LDL-C, TG, and Skinfolds in NGHS Girls

Attached find data on correlations of two-year changes (baseline to visit 3) among LDL-C, TG and skinfolds in NGHS girls. Also attached find Paul Bachorik's comments on the results of the NW Lipid Research reanalysis of NGHS apo A-I data.

A. Correlation of two-year changes

The correlation of two-year changes in LDL-C and TG for girls seen at approximate ages 9-10 versus ages 11-12 was larger in NGHS black participants than in white participants ($p<0.01$). The correlations of two-year changes in LDL-C and sum of skinfolds (SSF) were similar in blacks and in whites. The correlation of changes in TG and SSF was smaller in blacks than in whites, although this difference was not statistically significant ($p=0.10$). Adjustment of the correlation between ΔLDL-C and ΔTG for SSF made little difference in the magnitude of the correlation or the black white difference.

I hope you find these data somewhat helpful in revising the discussion of the longitudinal LDL-ApoB manuscript. As I remarked on the phone, these analyses do not adjust for differences in maturation stage, which was on more advanced in black than white girls at both visits. A fuller analysis might try to take maturational changes into account, as well as looking at two-year changes from visits 3 to 5, or 5 to 7 when the girls go through later stages of maturation. However, that might be a different manuscript (perhaps one that also looked at correlations of LDL-C and TG changes with changes in HDL-C?), and would require more thought.

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B. Paul Bachorik's response

In his memo (attached) responding to the NW Lipid lab repeat apo A-I data, Paul suggests that the Hopkins lab data is supported by the stability of the apo A-I (JH measurement) to HDL ratio from visit 0 to visit 5. While it is true that there is no change in the A-I(JH lab):HDL ratio in the samples we sent to NW Lipid (see Table 1, attached), this is not true in the overall NGHS cohort (see Table 3, attached), for which the Hopkins data suggest a 10% increase in the A-I:HDL ratio from Visits 0 to 5. This leads me to somewhat discount one of Paul's main arguments for trusting the Hopkins A-I measurements. The other argument Paul advances for trusting the Hopkins A-I is the NHANES experience; without more data on when the NHANES samples were run, and how the measurements were validated against NW Lipid measurements, I don't know how to weigh that evidence.

I hope you find all this material helpful. Don't hesitate to contact me if you have questions about any of it.

June 6, 1996

Table 1

Correlations Among Two-year Changes in LDL-C, TG, and Sums of Truncal Skinfolds or Sum of Three Skinfolds: NGHS Baseline Visit to Visit 3
By Race

Measure	Race	ΔTG R	ΔTG P	ΔSSF R	ΔSSF P	ΔTSF R	ΔTSF P
ΔLDL	White (n=561)	-0.18	<0.001	0.13	0.003	0.13	0.003
	Black (n=567)	-0.32	<0.001	0.15	<0.001	0.13	0.002
ΔTG	White	-		0.17	<0.001	0.19	<0.001
	Black	-		0.09	0.03	0.09	0.03
ΔSSF	White	-		-		0.96	<0.001
	Black	-		-		0.96	<0.001

Partial Correlation of Two-Year Changes in LDL and TG
Adjusting for Sum of Skinfolds (SSF)
By Race

Race	Partial Correlation of ΔLDL-C with ΔTG R	P
White (n=561)	-0.20	<0.001
Black (n=567)	-0.34	<0.001

SSF = sum of triceps, subscapular and suprailiac skinfolds
TSF = sum of truncal (subscapular and suprailiac) skinfolds
R = Pearson correlation coefficient
P = test for zero correlation

June 6, 1996

Table 2

Two-Year Changes in LDL-C, TG, Sum of Skinfolds and Truncal Skinfolds, By Race: NGHS Baseline Visit to Visit 3

Measure	Race	N	Mean	S.D.	P-value
ΔLDL-C	White	561	-8.1	20.4	0.92
	Black	567	-8.0	18.8	
ΔTG	White	561	8.5	39.7	0.002
	Black	567	1.4	35.8	
ΔTSF	White	561	3.5	7.5	<0.001
	Black	567	5.6	8.1	
ΔSSF	White	561	3.3	10.4	<0.001
	Black	567	6.7	11.3	

Table A.1

Ratio of Apo A-I (JH Lab) to HDL in 39 Participants With Repeat NW Lab Measurements

Race	N	Visit 0 Mean	S.D.	N	Visit 5 Mean	S.D.	N	Change Mean	S.D.
Overall	39	2.86	0.76	40	2.88	0.31	39	0.03	0.76
White	20	2.81	0.60	20	2.93	0.26	20	0.13	0.58
Black	19	2.92	0.91	20	2.82	0.34	19	-0.08	0.92

Table A.2

Ratio of Apo A-I (NW Lab) to HDL in 39 Participants With Repeat NW Lab Measurements

Race	N	Visit 0 Mean	S.D.	N	Visit 5 Mean	S.D.	N	Change Mean	S.D.
Overall	39	2.51	0.71	40	2.23	0.28	39	-0.27	0.68*
White	20	2.47	0.58	20	2.21	0.25	20	-0.26	0.56*
Black	19	2.54	0.84	20	2.25	0.31	19	-0.28	0.81

* $p<0.05$ for change in ratio between visits.

Table A.3

Ratio of Apo A-I (JHLab) to HDL in All Participants With Repeat JH Lab Measurements At Visits 0 and 5

Race	N	Visit 0 Mean	S.D.	N	Visit 5 Mean	S.D.	N	Change Mean	S.D.
Overall	1117	2.71	0.55	1117	2.97	0.34	1117	0.26	0.55*
White	560	2.69	0.48	560	3.02	0.35	560	0.32	0.47*
Black	557	2.72	0.61	557	2.92	0.32	557	0.21	0.62*

* $p<0.05$ for change in ratio between visits.

SSF = sum of triceps, subscapular and suprailiac skinfolds
TSF = sum of truncal (subscapular and suprailiac) skinfolds
P = t-test for black-white difference in mean two-year change.

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May 22, 1996

Memo:

To: Bob McMahon, Ph.D.
NGHS Coordinating Center

From: Paul S. Bachorik, Ph.D.
NGHS Lipid Laboratory

Re: NGHS ApoAI results

I have reviewed the ApoAI results for the split sample comparison between the Johns Hopkins and Northwest Lipid Research Clinic Laboratories that was contained in your memo of May 14, 1996. In that comparison, NWLRC remeasured apoAI in 40 randomly chosen participant samples that had been stored at -70°C after measurement of apoAI at Johns Hopkins at baseline and 5 years later. The Johns Hopkins results indicated a 14.9 percent increase in apoAI during that period, while the NWLRC re-measurement failed to reveal such a change.

The data indicate several general possibilities: 1) laboratory drift in the Johns Hopkins measurements; 2) under estimation of the apoAI concentrations in the baseline samples at Johns Hopkins due to changes in values assigned to the calibration standards supplied by the manufacturer; 3) actual changes due to the nature of the population, the way the population was handled, or the way the samples themselves were handled before being sent to the JH laboratory, and 4) deterioration of the year 5 samples during storage such that the NWLRC values failed to detect a real temporal increase, or 5) some combination of the above possibilities.

There is reason to consider all these possibilities.

1) Laboratory Drift, and 2) Underestimation of baseline apoAI values.

Laboratory drift and underestimation of baseline apoAI values are possibilities because when the baseline measurements were made (in 1987-1988)

there were no available true reference standards with which to establish a reference base for apoAI measurements. At that time it was necessary to calibrate the assay using standards provided by the manufacturer of the RID method we used. It is thus possible that the baseline values were under-estimated, leading to an artifactually large difference between the baseline and year 5 samples. Against this possibility is the observation that the difference between the JH baseline values and the NWLRC remeasured values (which are referable to the WHO-IFCC international reference material for apoAI) are almost exactly as predicted by a separate and larger one year split sample comparison between the JH and NWLRC laboratories during the conduct of the NHANES III survey (Bachorik, et al. Clin Chem 40: 1915-1920, 1994). That same study also provided evidence for the stability of the RID measurements in over 2500 actual subject samples during the entire course of the NHANES III survey. Since the NHANES III survey used the same materials and methods and the NGHS study, and was conducted until Oct 1991, the results mitigate against laboratory drift, the under-estimation of the baseline values or the over-estimation of the 5 year values.

3) Actual changes between baseline and year 5.

The possibility exists that for reasons not presently understood, there was a real increase in apoAI concentration between baseline and year 5. The strongest evidence for this possibility is the consistency of the JH apoAI- and HDL-cholesterol data presented in your memo. The data indicate increases of 14.9 percent for apoAI and 11.2 percent for HDL-cholesterol. Both of the JH measurements were made in freshly frozen samples, and were not subject to storage-related changes. Furthermore, the two assays were completely independent of each other and were performed by different technicians. Since in most studies that have examined the question, apoAI and HDL-cholesterol are fairly highly correlated ($r \sim 0.7$ to 0.8), the findings support the possibility that apoAI concentrations actually increased in this study population.

4) Storage related changes affecting the NWLRC values.

It remains possible that storage related changes may account for the small changes observed on re-analysis. Against this possibility is that the observed difference between the JH and NWLRC apoAI values for the baseline samples is similar to that predicted from the NHANES III data after considering methodological differences. In addition, the NWLRC data indicate apoAI concentrations that are consistent with NHANES III data for this age group after adjustment to the WHO-IFCC reference base. Thus, if storage related effects are

involved, they would most likely have affected the 5 year samples instead of the baseline samples.

Unfortunately, it will not be possible to assess this possibility directly, because the RID method used for the JH measurements is no longer available. The re-measurement data have several limitations that should be kept in mind. First, I don't believe there are any prospective storage data on the stability of apoAI measurements in samples stored frozen for 5 or 10 years. Second, there was a 5 year difference between the baseline and 5 year samples when both were re-measured. Third, while the baseline samples were maintained in storage at JH since they were collected, the 5 year samples were moved to different storage facilities on four occasions since they were collected (JH to NIH; NIH to JH; JH to Ogden; and finally Ogden to JH for shipment to NWLRC). On each of these occasions, the samples would have been warmed from -70 °C to at least -40 °C (dry ice temperature) or possibly a little higher during handling and shipment, which could have resulted in several freeze-partial thaw cycles that perhaps could have affected the re-measurement results in the 5 year samples differently than in the baseline samples.

On balance, I don't think the available information justifies either acceptance or rejection of the possibilities that the observed baseline to year 5 samples are either methodologically based or real. Artifacts could have been introduced either during the original JH analyses, or before the NWLRC re-analyses. On the other hand, the consistency of the original apoAI and HDL cholesterol measurements would seem to favor actual changes in this population for reasons that remain to be determined. My suggestion would be to reserve judgment for now and delay publication of the apoAI results until the basis for the observation is better understood or similar observations become available from other studies.

Please let me know if we can be of further help.

pc-64-7

Table 1

DISC Apo A-I Measurements
By Year of Analysis and Participant Age

A. Males

Year of Analysis	Age 10			Age 11			Age 12			Age 13			Age 14			Age 15			Age 16		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D	N	Mean	S.D.
88	22	132.0	19.4	31	135.6	21.4	3	123.7	4.6												
89	7	161.1	22.9	29	149.2	20.1	19	160.2	25.2												
90	42	169.7	20.6	68	160.2	23.5	37	166.3	23.5												
91	35	174.9	21.8	65	169.7	16.9	41	169.5	20.1	25	158.9	19.3	18	157.6	20.6						
92							42	177.4	24.8	76	170.4	32.5	53	165.6	25.6	17	159.4	27.6			
93							39	174.7	21.3	69	174.0	24.5	41	166.7	25.5	27	169.9	21.0	19	171.4	19.3

B. Females

Year of Analysis	Age 9			Age 10			Age 11			Age 12			Age 13			Age 14			Age 16		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D	N	Mean	S.D.
88	24	125.0	18.5	22	132.8	24.2	4	120.3	12.0												
89	4	155.5	14.9	27	150.0	27.5	18	153.7	28.5												
90	11	152.6	17.0	65	165.2	20.8	44	155.5	18.1	3	163.7	29.5									
91	17	168.5	23.5	46	162.1	21.7	51	160.6	17.1	28	156.5	16.0	13	166.1	27.1	1	139.0	--			
92							18	165.8	23.7	65	171.9	22.7	60	166.2	23.9	12	165.6	18.1			
93							21	179.5	24.0	51	171.6	23.8	47	169.7	21.3	28	168.6	18.1	10	173.1	30.5

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Summary of NGHS Laboratory Procedures and Quality Control

All lipid, lipoprotein, and apolipoprotein parameters were measured by the Johns Hopkins Lipoprotein Analytical Laboratory under the supervision of Paul S. Bachorik, Ph.D. The lab is in stage 3 (maintenance) of LRC-CDC standardization. The data presented here are from reports by Dr. Bachorik on NGHS and the DISC Study, which ran more or less concurrently with NGHS.

Total Cholesterol (TC) was measured in sera by an enzymatic method using a commercially available reagent mixture (Boehringer-Mannheim Diagnostics, Indianapolis, IN Chol IIP, Cat # 704121). Triglycerides (TG) were measured in sera by an enzymatic method using a commercially available reagent mixture (Boehringer-Mannheim Diagnostics, Indianapolis, IN GPO Cat #816370) or Abbott Laboratories (Abbott Park, North Chicago, IL A-gent triglycerides). HDL-C was determined in the supernatant after precipitating out the apoB containing lipoproteins with heparin-sulfate and $MnC1_2$. LDL-C was calculated using the Friedewald equation.

High and low pools of TC, TG, and HDL-C (i.e, cholesterol in the usual range of HDL-C) from CDC were run in duplicate with each analytical run. The CV for TC ranged from 1.1 to 3.0% and averaged 1.9%; the biases ranged from -2.1 to +0.8% and averaged -0.5%. For TG, the CV ranged from 1.4 to 6.9% and averaged 3.9%; the biases for TG ranged from -5.5 to +2.3% and averaged -1.8%. For HDL-C, the CV from the M series pools ranged from 1.4 to 4.3%; the biases ranged from -4.3 to +0.2%, while those from the AQ series pools had CV ranging from 2.0 to 6.0% and biases ranging from -4.5 to +3.0%.

A memo from Dr. Bachorik dated March 9, 1994, reports that the lab used two methods for quantitation of apoAI and B - a manual immunodiffusion (RID) and an automated immunonephelometry (INA) method. The lab used the RID method only for NGHS until April 1, 1994, at which time it began to use the INA method. It was thought that the lab would have received all samples for NGHS II by that date. The shift was necessitated because the apoAI plates for the RID method were no longer available and the plates for apoB could not be guaranteed.

In anticipation of the shift, JH Labs performed 150 split aliquot analyses. Although the correlation coefficient for apoAI was $r = 0.984$, the means were 167.9 (RID) and 137.0 (INA) and the % difference was 17.5. The following equation was given: INA = 112 + 0.75 RID. For apoB, the correlation coefficient was $r = 0.993$, but the means were 150.6 (RID) and 136.6 (INA), with a % difference of 8.3. The following equation was given: INA = 4.0 + 0.88 RID. (No report of the s.e. of β were given).

MARYLAND MEDICAL
RESEARCH INSTITUTE

February 12, 1997

TO: NGHS Steering Committee

FROM: Robert McMahon, Ph.D.
NGHS Coordinating Center

SUBJECT: Apo A-I Results in NGHS and DISC

Attached find tables and graphs presenting NGHS apo A-I data from the baseline visit (ages 9 and 10) through Visit 10 (Ages 18 and 19). Partial data only are shown for Visit 10, for which visits are not yet complete. Also attached find a table of mean values of apo A-I measurements performed for the DISC trial, by year of analysis, age and gender. These assays were performed by the same laboratory with the same method.

We have previously observed that in NGHS females apo A-I increases in a staircase fashion from ages 9-19 through 16-17, with jumps at every two years of age. As this coincides with the schedule of NGHS visits at which apo A-I was measured, the possibility that laboratory artifact underlies some of these changes must be considered, even though the same method was maintained at all of these visits. Between visit 7 (ages 16-17) and visit 10 (ages 18-19), the Central Lipid Laboratory at Johns Hopkins was forced to change methods. The dramatic drop in apo A-I between these visits strongly suggests that the new method does not give comparable results to the former method.

Mean apo A-I values in the DISC data also show marked increases between years in analyses performed controlling for participant age and gender (Table 1). It is also notable that in DISC females, among samples analyzed during the same year there is no suggestion of the same dramatic increases in apo A-I with age seen in the NGHS cohort data.

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Figure 4.5.1
Mean and 95% Confidence Interval by Age and Race
Apo – A1 (mg/dl)

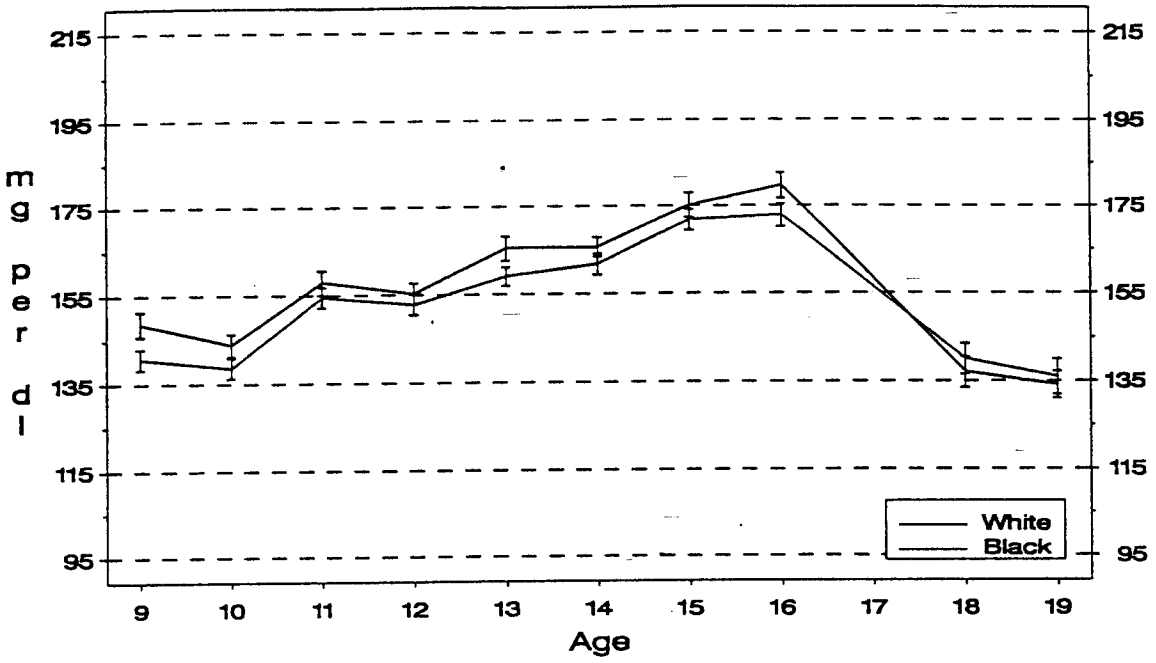
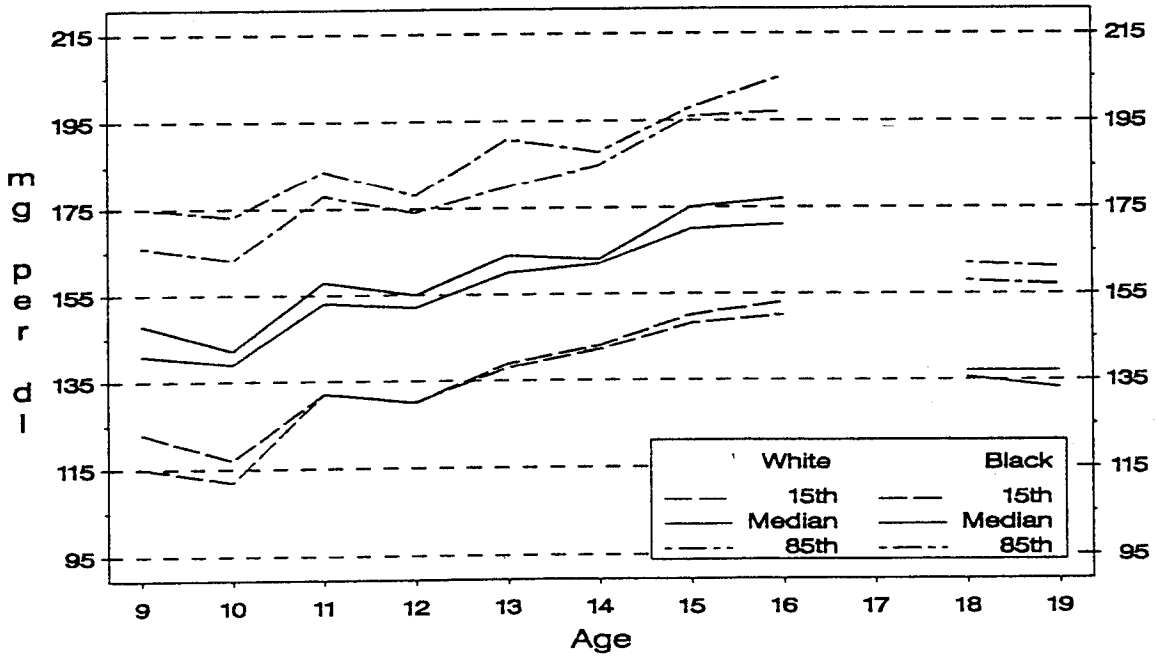


Figure 4.5.2
Percentile Distribution by Age and Race
Apo – A1 (mg/dl)



8. Quality Assurance Procedures

NGHS Quality Assurance Checking Procedures Documentation

9/3/96

Introduction

The following sections present the complete documentation of the Quality Assurance Checking Procedures used in NGHS. These procedures are discussed in detail in Section I, entitled *Description of NGHS Quality Assurance Checking Procedures.* In Section II, entitled *Tables of NGHS Quality Assurance Checking Procedures by Study Visit*, an indication is given of which checking procedures were performed at each study visit. Finally, in Section III, entitled *Tables of Anthropometry Normal-Range Edit Limits*, the actual edit limits for anthropometry and blood pressure. This table is organized by age, since the edit limits were constructed by age. The following table shows the correspondence between calendar date, visit number and age.

Calendar Date	Visit	Ages
3/87-2/88	1	9-10
3/88-2/89	2	10-11
3/89-2/90	3	11-12
3/90-2/91	4	12-13
3/91-2/92	5	13-14
3/92-2/93	6	14-15
3/93-2/94	7	15-16
3/94-2/95	8	16-17
3/95-2/96	9	17-18
3/96-2/97	10	18-19

Section I

Description of NGHS Quality Assurance Checking Procedures

Description of NGHS Quality Assurance Checking Procedures

1. Data entry checks

These checks are performed during the data entry of form data at the clinical sites. The data entry is performed using screens developed in the Informix 4GL programming language, which is part of the Informix Relational Data Base System. These programs are developed specifically for each form each year and implemented by NGHS Coordinating Center staff on the microcomputers at each clinic. These screens look like the forms and follow the same pattern as the forms, including skip patterns. Data is entered into the screens in exactly the same sequence as it is recorded on the forms.

A. Range checks

Range checking is part of the data entry screens to prevent the data entry operator from entering impossible values. For example, if the item is a Yes (code 1) or No (code 2) item, the data entry screen will not accept anything except a 1, 2 or <new line> for missing. If an item is a measurement (or continuous) variable, such as height, the data entry screen will accept any numeric response or <new line> for missing. The data entry screen itself does not check for improbable values, such as height less than 100 cm or greater than 200 cm. The purpose of the data entry range checks is to eliminate impossible values while allowing as rapid data entry as possible. Improbable values are checked during the edit check process.

B. Duplicate forms

Whenever a form is entered, the basic identifying information about the form is checked against the data base inventory. The data base inventory contains basic identifying information about each participant in the clinic data base as well as basic information about every form for that participant. This information includes the participant ID number, the participant name code, the form type and revision and the visit number. If the data entry program finds that the same form type has already been entered for that participant for that visit, it will not allow the form to be entered.

C. Double keying

Starting in Year 6, all forms were keyed twice independently at the clinics; that is, each form was keyed by two different data entry operators and the form data from the two keyings were then compared electronically to identify any data fields that were different. If any differences were detected, a report was printed identifying the form and the differences and a third person at the clinic would rekey the data fields in question to resolve the difference. Prior to Year 6, the forms were keyed only once.

D. ID #, namecode match

As described in B. above, the basic identifying information on a form was checked against the data base inventory. The ID # and namecode were set from the Form 03, the NGHS Participant Registration Form. Thus, whenever a form was keyed, the ID # and namecode had to match exactly before the data entry could proceed. Similar checks are made for data from central laboratories and DDEC. Any discrepancies between the ID# and namecode, compared to the data base inventory, are resolved before the data is allowed to enter the data base.

E. Valid visit #

As described in B. above, the visit number for the form was also checked against the data base inventory. Thus, a form could not be entered twice, it could not be entered for a visit after the current visit, and it could not be entered for a visit for which it was not a valid form/revision number; that is, if the Form 18 was a revision 2 in Year 3, the data entry program would not allow a Form 18 revision 2 to be entered for a Year 3 form.

F. Form date OK for visit #

The data entry program would only allow a certain range of form (visit) dates to be entered for a specific visit number. For example, Year 03 visits only took place between March, 1989 - February, 1990 (with a three month window for the visit dates). Thus, a form with a visit date of June, 1990 could not be entered as a Year 03 form.

2. Edit checks

Edit checks are performed on each form after it is collected from the clinics. Newly entered forms and any revised forms are collected every two weeks electronically. These edit checks are more extensive than the checks performed during data entry. They are run on the forms received immediately after receipt. Any queries from the edit checks are printed out and sent to the clinics for resolution. If any form needs to be revised, the clinic staff can revise the form and it is automatically retransmitted during the next data collection. If there are no changes to be made to the form, that is noted on the edit query and returned to the coordinating center.

A. Range checks

The range checks performed during the edit process are substantially more comprehensive than those performed during data entry. As mentioned above, it was decided to perform the comprehensive checking at a stage after data entry so that data entry could proceed as fast as possible without being interrupted due to the query of

values from editing. During this check, measurement data are compared to 'normal' limits which are defined as the 5th - 95th %iles of the previous year of NGHS data collection. During Years 1-5, the NHANES data was used for certain measurements, including height, weight, and triceps skinfolds, but it was decided that, since the NGHS data had a far larger sample size in the ages being studied, particularly for black participants, to change to using the NGHS data for all measurements after Year 05. The actual ranges that were used for each measurement for each year are included on the attached Tables of Anthropometry Normal-Range Edit Limits (Section III).

B. Comparison between measures

In addition to the range checks for measurements, another series of comparisons are made which compare measurements for consistency. An example of these comparisons would be comparing weight and sum of skinfolds to identify those with high weight and low sum of skinfolds. All of the comparisons, with the limits used to identify suspect measurements, are listed in Section III.

C. Missing data

Any item on a form which should be completed is queried if there is no answer entered. For example, if an item asks 'Do you take any prescription medication (yes or no)?' and it is not answered, an edit query will be generated requesting a response.

D. Consistency between answers

Answers to different items are checked for consistency. For example, if an item asks 'Do you take any prescription medication (yes or no)?', followed by a series of prescription medication to be checked, an edit query will be generated if the first item is answered 'Yes', but no prescription medications are taken. Similarly, if a participant answers that she has started having her periods but no date is entered for her last period, an edit query will be generated.

E. On-form edit checks

On the physical exam form, the normal ranges are printed on the back of the page facing the measurements. After the measurements are taken, they are compared to the edit ranges and, if outside of the range, the measurements are checked one more time. If the measurements are accurate, a special box on the form is checked to indicate that the measurements were verified.

F. Food coding checks

To verify extreme values from the coding of food records, the food records in the top

and bottom 1% of selected nutrients are identified and the complete food record is printed for review by the clinic nutritionists.

3. Longitudinal edits

NGHS compares anthropometric and blood pressure measurements across visits for each participant to identify extreme changes from year to year. These extreme changes are reviewed by the NGHS Quality Assurance Committee to either confirm the change as possible or to delete one or more measurements as improbable.

A. Top and bottom percentiles

Extreme changes in anthropometric measurements from one year to the next are identified as either the top 1% of changes (changes in the positive direction) or the bottom 1% of changes (changes in the negative direction). The measurements contributing to the change are compared to the measurements taken the years before and after the extreme change to look for consistency. In addition, the changes are judged in terms of height and weight changes to look for consistency between these measurements and the other anthropometric measurements. Similar comparisons are made for blood pressure.

B. Negative height changes

Any negative height changes of 2.5 cm or more are reviewed. Because height changes have to be either positive or no change, any substantial negative change indicates a measurement error. In these cases, the NGHS QA Committee might decide to delete a measurement and interpolate using the height measurements taken in the years before and after the measurement in question.

C. Negative stage changes

In a similar way, any negative changes of 2 stages or more from one year to the next are reviewed by the NGHS QA Committee. As with height, stage has to either go up or stay the same. For these cases, the committee might decide to delete a measurement and interpolate using the stage assessments made in the years before and after the measurement in question.

D. Comparison of exam dates

The exam or visit dates are compared from one year to the next. Any exam dates that are less than 6 months apart or more than 18 months apart are queried. These limits are the outside limits of the extended window used in NGHS for seeing participants who live in a distant location.

E. Verification of extreme lipid results

At the Central Lipid Lab, a longitudinal verification of extreme lipid results is performed. If the lipid results for a participant falls outside of specified limits, the results from previous years for that participant are checked. In addition, a verification of the results is performed using unused serum from the participant specimen.

4. Data base checks

A. Comparison between MMRI data base and clinic data base

This comparison verifies that the MMRI data base, which is the official study data base, has all of the forms contained in the clinic data bases. This comparison is done for each year, for each form, and for each participant. The data bases have to be exactly the same before the comparison is considered complete.

B. Comparison between MMRI and Lipid Lab data base

This comparison verifies that the MMRI lipid data base, which is the official study data base for lipids, has all of the lipid results contained at the lipid lab. This comparison is done at the end of each year of specimen collection. The data bases have to be exactly the same before the comparison is considered complete.

C. Missed visit and missed form reports

Each clinic generates a report of missed visits and of missing forms. In Years 8 and later, each participant had to have either some completed forms for a visit or a missed visit form. In addition, every form expected for a visit had to be present or listed on the missing form. Prior to Year 8, the checking was primarily manual at the clinics. At the coordinating center, a listing of all participants for a clinic was printed with indicators for completed and missing forms. This listing was studied to identify patterns of missing forms.

5. Comparisons between old and new analysis files

In NGHS, new analysis files are generated every 3-4 months. These files include data from all areas of the study, including demographics, anthropometry, blood pressure, lipids, nutrition, physical activity and psychosocial. The main NGHS analysis file contains over 500 variables and close to 20,000 records. A series of checking procedures have been developed to identify undesired changes in the analysis file from one release to the next.

A. Changes to individual values from selected variables

A exact comparison is made between the old and new analysis file for 20 selected variables. These variables were selected from each of the major content areas of NGHS. Any changes in these values are researched and documented or the problem is resolved. Documented changes are included as part of the file documentation.

B. Listings of new or deleted records

Any records that have been added to the file or deleted from the file compared to the last release are listed and included as part of the file documentation, after verification.

C. Comparisons of means by visit

The output from the SAS PROC MEANS is generated from both the old and new analysis file for all variables on the file by visit. A program compares these listings, line by line, and prints out any discrepancies for resolution.

6. Verification of values of select variables

During the course of NGHS, there have been occasions were special edit checks have been performed prior to specific analyses. These special edit checks are documented here.

A. Values for lipids, but physical exam information missing

Prior to an analysis involving lipids and the effect of anthropometric measures on the lipids, a listing was generated to identify those participants who had results from lipid determinations, but no physical exam information (a very rare occurrence in reality). These listings were resolved by the clinics. This check was done for all years.

B. Check hours of TV watching as either 0 hours or missing

Prior to an analysis of the number of TV watching and its effect on anthropometric measures, a listing was generated identifying participants who reported watching 0 hours of TV during a usual week or those who reported nothing for that item. The form was checked for these participants and resolved if necessary.

C. Duplicates for lipid, glucose, insulin, cotinine and food record results

Since these results are transmitted from outside laboratories (including DDEC) without the data base controls of the NGHS clinics, they are checked against the main study inventory as they are received. Any results that are misidentified or duplicates are returned to the lab and the clinic to resolve. In addition, for serum results, these results are checked against each other to verify that a participant with one result has

all of the others, since the serum is coming from the same blood draw. Any discrepancies are returned to the clinic for resolution.

D. Blind duplicates for DDEC food record coding

To check on the reproducibility of the DDEC coding of NGHS food records, a set of 30 food records were recopied and resubmitted to DDEC as blind duplicates for coding. Different ID numbers were used in these submissions. The results of these duplicate codings were reviewed by the Nutrition Committee and the Quality Assurance Committee.

E. Physical activities checks

To verify the coding of the physical activities written in, a sample of physical activity forms were reviewed by the Physical Activity Resource Unit. This was especially important in Years 3-7 where the actual physical activity was not entered in the computer, only an indicator of the intensity of the activity.

F. Site visits

Site visits are performed in NGHS for two purposes. First, a random sample of the forms are compared to the main study data base to verify accuracy in entry. All of the forms for 20 randomly selected participants are reviewed, item by item. Any discrepancies are noted. Second, clinic procedures are reviewed and several participant visits are observed to verify correct measurement techniques and form administration. Site visit reports are written and circulated to the NGHS QA Committee for review.

Section II

Tables of NGHS Quality Assurance Checking Procedures by Study Visit

NGHS Quality Assurance Checking Procedures
Visit 1

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	c	c	c	c
b. Duplicate forms	c	c	c	c	c	c
c. Double keying	--	--	c	--	--	--
d. ID #, namecode match	c	c	c	c	c	c
e. Valid visit #	c	c	c	c	c	c
f. Form date OK for visit #	c	c	c	c	c	c
2. Edit checks						
a. Range checks	c	c	c	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	c	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	--	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	c	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 1 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	c	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	c	c	c	c
b. List of new or deleted records	c	c	c	c	c	c
c. Comparison of means	c	c	c	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	c	c	--	--	--
b. TV watching either 0 or missing	--	--	--	--	c	--
c. Duplicate lab and DDEC results	--	--	c	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 2

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	--	c	c	c
b. Duplicate forms	c	c	--	c	c	c
c. Double keying	--	--	--	--	--	--
d. ID #, namecode match	c	c	--	c	c	c
e. Valid visit #	c	c	--	c	c	c
f. Form date OK for visit #	c	c	--	c	c	c
2. Edit checks						
a. Range checks	c	c	--	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	--	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	--	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	--	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 2 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	--	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	--	c	c	c
b. List of new or deleted records	c	c	--	c	c	c
c. Comparison of means	c	c	--	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	--	--	--	--	--
b. TV watching either 0 or missing	--	--	--	--	--	--
c. Duplicate lab and DDEC results	--	--	--	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 3

Type of Check	Subject Area					
	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	c	c	c	c
b. Duplicate forms	c	c	c	c	c	c
c. Double keying	--	--	c	--	--	--
d. ID #, namecode match	c	c	c	c	c	c
e. Valid visit #	c	c	c	c	c	c
f. Form date OK for visit #	c	c	c	c	c	c
2. Edit checks						
a. Range checks	c	c	c	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	c	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	--	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	--	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	c	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 3 (Continued)

Type of Check	Subject Area					
	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	c	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	c	c	c	c
b. List of new or deleted records	c	c	c	c	c	c
c. Comparison of means	c	c	c	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	c	c	--	--	--
b. TV watching either 0 or missing	--	--	--	--	c	--
c. Duplicate lab and DDEC results	--	--	c	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 4

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	--	c	c	c
b. Duplicate forms	c	c	--	c	c	c
c. Double keying	--	--	--	--	--	--
d. ID #, namecode match	c	c	--	c	c	c
e. Valid visit #	c	c	--	c	c	c
f. Form date OK for visit #	c	c	--	c	c	c
2. Edit checks						
a. Range checks	c	c	--	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	--	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	--	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	--	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 4 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	--	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	--	c	c	c
b. List of new or deleted records	c	c	--	c	c	c
c. Comparison of means	c	c	--	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	--	--	--	--	--
b. TV watching either 0 or missing	--	--	--	--	--	--
c. Duplicate lab and DDEC results	--	--	--	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 5

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	c	c	c	c
b. Duplicate forms	c	c	c	c	c	c
c. Double keying	--	--	c	--	--	--
d. ID #, namecode match	c	c	c	c	c	c
e. Valid visit #	c	c	c	c	c	c
f. Form date OK for visit #	c	c	c	c	c	c
2. Edit checks						
a. Range checks	c	c	c	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	c	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	--	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	c	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 5 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	c	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	c	c	c	c
b. List of new or deleted records	c	c	c	c	c	c
c. Comparison of means	c	c	c	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	c	c	--	--	--
b. TV watching either 0 or missing	--	--	--	--	c	--
c. Duplicate lab and DDEC results	--	--	c	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 6

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	--	c	c	c
b. Duplicate forms	c	c	--	c	c	c
c. Double keying	--	--	--	--	--	--
d. ID #, namecode match	c	c	--	c	c	c
e. Valid visit #	c	c	--	c	c	c
f. Form date OK for visit #	c	c	--	c	c	c
2. Edit checks						
a. Range checks	c	c	--	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	--	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	c	--	--	--	--
f. Food coding checks	--	--	--	--	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	--	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 6 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	--	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	--	c	c	c
b. List of new or deleted records	c	c	--	c	c	c
c. Comparison of means	c	c	--	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	--	--	--	--	--
b. TV watching either 0 or missing	--	--	--	--	--	--
c. Duplicate lab and DDEC results	--	--	--	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	--	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 7

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	c	c	c	c
b. Duplicate forms	c	c	c	c	c	c
c. Double keying	--	--	c	--	--	--
d. ID #, namecode match	c	c	c	c	c	c
e. Valid visit #	c	c	c	c	c	c
f. Form date OK for visit #	c	c	c	c	c	c
2. Edit checks						
a. Range checks	c	c	c	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	c	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	c	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	c	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 7 (Continued)

Type of Check	Subject Area					
	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	c	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	c	c	c	c
b. List of new or deleted records	c	c	c	c	c	c
c. Comparison of means	c	c	c	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	c	c	--	--	--
b. TV watching either 0 or missing	--	--	--	--	c	--
c. Duplicate lab and DDEC results	--	--	c	--	--	--
d. Blind duplicate food record coding	--	--	--	c	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 8

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	--	c	c	c
b. Duplicate forms	c	c	--	c	c	c
c. Double keying	--	--	--	--	--	--
d. ID #, namecode match	c	c	--	c	c	c
e. Valid visit #	c	c	--	c	c	c
f. Form date OK for visit #	c	c	--	c	c	c
2. Edit checks						
a. Range checks	c	c	--	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	--	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	c	--	--	--	--
f. Food coding checks	--	--	--	c	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	c	--	c	--	--
b. Negative height changes	--	c	--	--	--	--
c. Negative stage changes	--	c	--	--	--	--
d. Comparison of exam dates	--	c	--	--	--	--
e. Verification of extreme lipid results	--	--	--	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 8 (Continued)

Type of Check	Subject Area					
	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	c	c	--	c	c	c
b. Compare MMRI and Lipid Lab DB	--	--	--	--	--	--
c. Missing visits and forms	c	c	--	c	c	c
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	--	c	c	c
b. List of new or deleted records	c	c	--	c	c	c
c. Comparison of means	c	c	--	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	--	--	--	--	--
b. TV watching either 0 or missing	--	--	--	--	c	--
c. Duplicate lab and DDEC results	--	--	--	--	--	--
d. Blind duplicate food record coding	--	--	--	c	--	--
e. Physical activities checks	--	--	--	--	c	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 9

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	--	c	c	c
b. Duplicate forms	c	c	--	c	c	c
c. Double keying	--	--	--	--	--	--
d. ID #, namecode match	c	c	--	c	c	c
e. Valid visit #	c	c	--	c	c	c
f. Form date OK for visit #	c	c	--	c	c	c
2. Edit checks						
a. Range checks	c	c	--	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	--	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	c	--	--	--	--
f. Food coding checks	--	--	--	--	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	o	--	o	--	--
b. Negative height changes	--	o	--	--	--	--
c. Negative stage changes	--	--	--	--	--	--
d. Comparison of exam dates	--	o	--	--	--	--
e. Verification of extreme lipid results	--	--	--	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 9 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	o	o	--	o	o	o
b. Compare MMRI and Lipid Lab DB	--	--	--	--	--	--
c. Missing visits and forms	o	o	--	o	o	o
5. Comparison of Analysis Files						
a. Changes in values for existing records	c	c	--	c	c	c
b. List of new or deleted records	c	c	--	c	c	c
c. Comparison of means	c	c	--	c	c	c
6. Verification of values of select variables						
a. Lipids present, exam missing	--	--	--	--	--	--
b. TV watching either 0 or missing	--	--	--	--	--	--
c. Duplicate lab and DDEC results	--	--	--	--	--	--
d. Blind duplicate food record coding	--	--	--	--	--	--
e. Physical activities checks	--	--	--	--	--	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

NGHS Quality Assurance Checking Procedures
Visit 10

Type of Check	Subject Area					
	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
1. Data entry checks						
a. Range checks	c	c	c	c	c	c
b. Duplicate forms	c	c	c	c	c	c
c. Double keying	--	--	c	--	--	--
d. ID #, namecode match	c	c	c	c	c	c
e. Valid visit #	c	c	c	c	c	c
f. Form date OK for visit #	c	c	c	c	c	c
2. Edit checks						
a. Range checks	c	c	c	--	c	c
b. Comparison between measures	--	c	--	--	--	--
c. Missing data	c	c	c	--	c	c
d. Consistency between answers	c	c	--	--	c	c
e. On-form edit checks	--	c	--	--	--	--
f Food coding checks	--	--	--	o	--	--
3. Longitudinal edit checks						
a. Top and bottom percentiles	--	o	--	o	--	--
b. Negative height changes	--	o	--	--	--	--
c. Negative stage changes	--	o	--	--	--	--
d. Comparison of exam dates	--	o	--	--	--	--
e. Verification of extreme lipid results	--	--	o	--	--	--

NGHS Quality Assurance Checking Procedures
Visit 10 (Continued)

	Subject Area					
Type of Check	Demographics	Anthropometry	Lipids	Nutrition	Physical Activity	Psychosocial
4. Database Checks						
a. Compare MMRI and Clinic DBs	o	o	--	o	o	o
b. Compare MMRI and Lipid Lab DB	--	--	o	--	--	--
c. Missing visits and forms	o	o	--	o	o	o
5. Comparison of Analysis Files						
a. Changes in values for existing records	o	o	o	o	o	o
b. List of new or deleted records	o	o	o	o	o	o
c. Comparison of means	o	o	o	o	o	o
6. Verification of values of select variables						
a. Lipids present, exam missing	--	o	o	--	--	--
b. TV watching either 0 or missing	--	--	--	--	--	--
c. Duplicate lab and DDEC results	--	--	o	--	--	--
d. Blind duplicate food record coding	--	--	--	o	--	--
e. Physical activities checks	--	--	--	--	--	--
f. Site visits	c	c	--	c	c	c

Note:

c = indicates check completed for specific visit
o = incidates check is currently on-going for specific visit
-- = indicates check not applicable for subject area or not done for specific visit

Section III

Tables of Anthropometry Normal-Range Edit Limits by Age

Anthropometry Normal-Range Edit Limits for NGHS
By Age

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Measurement	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Height (cm)	105	185	132	154	135	163	144	166
Weight (kg)	15	90	26	50	30	60	32	64
BMI	14	25	14	27	15	29	16	31

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Measurement	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Height (cm)	149	170	151	172	153	174	152	174
Weight (kg)	35	76	40	75	44	77	44	96
BMI	16	33	17	35	18	36	17	27

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Measurement	Lower	Upper	Lower	Upper	Lower	Upper		
Height (cm)	153	174	154	174	154	174		
Weight (kg)	46	97	47	104	47	104		
BMI	17	27	18	28	18	28		

NGHS Anthropometry Normal-Range Edit Limits
By Age

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Circumferences	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Upper Arm	15	35	18	30	19	32	19	31
Waist - Minimum	--	--	53	81	54	86	60	83
Waist - Umbilicus	--	--	--	--	--	--	--	--
Max Below Waist	--	--	71	105	70	104	79	103
Upper Thigh	30	76	39	61	40	67	46	65

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Circumferences	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Upper Arm	21	35	22	37	22	39	22	38
Waist - Minimum	60	90	60	95	61	99	60	97
Waist - Umbilibus	--	--	--	--	64	106	64	106
Max Below Waist	79	112	81	117	83	122	83	119
Upper Thigh	45	71	47	75	48	77	47	77

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Circumferences	Lower	Upper	Lower	Upper	Lower	Upper		
Upper Arm	22	37	23	39	23	39		
Waist - Minimum	61	96	62	100	62	100		
Waist - Umbilicus	66	107	67	111	67	111		
Max Below Waist	84	120	86	123	86	123		
Upper Thigh	--	--	--	--	--	--		

NGHS Blood Pressure Normal Range Edit Limits
By Age

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Blood Pressures	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Systolic BP	80	230	87	115	87	121	93	120
Diastolic 4th BP	20	200	50	81	50	82	53	82
Diastolic 5th BP	20	200	38	73	38	76	42	75

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Blood Pressures	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Systolic BP	95	123	97	125	99	127	92	124
Diastolic 4th BP	55	82	58	84	60	85	54	83
Diastolic 5th BP	49	76	50	78	53	78	45	79

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Blood Pressures	Lower	Upper	Lower	Upper	Lower	Upper		
Systolic BP	94	124	95	125	95	125		
Diastolic 4th BP	55	84	56	84	56	84		
Diastolic 5th BP	49	81	48	80	48	80		

NGHS Anthropometry Edit Limits for Comparison Edits
BMI vs. Sum of Skinfolds

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Conditions	BMI	SumSF	BMI	SumSF	BMI	SumSF	BMI	SumSF
Condition 1 -OR-	--	--	<15.7	>50.5	<16.4	>52.5	<17.4	>58.0
Condition 2	--	--	>21.9	<21.5	>23.2	<21.5	>24.8	<23.0

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Conditions	BMI	SumSF	BMI	SumSF	BMI	SumSF	BMI	SumSF
Condition 1 -OR-	<18.2	>63.0	<19.0	>69.0	<19.8	>74.0	<19.8	>74.0
Condition 2	>25.6	<26.0	>26.3	<29.0	>26.9	<32.0	>26.9	<32.0

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Conditions	BMI	SumSF	BMI	SumSF	BMI	SumSF		
Condition 1 -OR-	<19.8	>74.0	<19.8	>67.0	<19.8	>67.0		
Condition 2	>26.9	<32.0	>28.9	<30.0	>28.9	<30.0		

NGHS Anthropometry Edit Limits for Comparison Edits
Height vs. Weight

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Conditions	Height	Weight	Height	Weight	Height	Weight	Height	Weight
Condition 1 -OR-	--	--	<138.3	>48.0	<145.3	>55.1	<151.2	>62.3
Condition 2	--	--	>150.2	<31.5	>157.7	<36.1	>162.7	<41.3

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Conditions	Height	Weight	Height	Weight	Height	Weight	Height	Weight
Condition 1 -OR-	<155.3	>67.7	<157.4	>70.8	<158.4	>72.5	<158.4	>72.5
Condition 2	>165.6	<46.3	>167.5	<49.5	>168.5	<51.5	>168.5	<51.5

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Conditions	Height	Weight	Height	Weight	Height	Weight		
Condition 1 -OR-	<158.4	>72.5	<158.4	>72.5	<158.4	>72.5		
Condition 2	>168.5	<51.5	>168.5	<51.5	>168.5	<51.5		

NGHS Anthropometry Edit Limits for Comparison Edits
BMI vs. Skinfolds

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Conditions	BMI	Any SF	BMI	Any SF	BMI	Any SF	BMI	Any SF
Condition 1 -OR-	--	--	<15.7	>17.0	<16.4	>17.0	<17.4	>17.0
Condition 2	--	--	>21.9	<5.0	>23.2	<8.0	>24.8	<8.0

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Conditions	BMI	Any SF	BMI	Any SF	BMI	Any SF	BMI	Any SF
Condition 1 -OR-	<18.2	<18.0	<19.0	>22.0	<19.8	>24.0	<19.8	>24.0
Condition 2	>25.6	<9.0	>26.3	<10.0	>26.9	<10.0	>26.9	<10.0

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Conditions	BMI	Any SF	BMI	Any SF	BMI	Any SF		
Condition 1 -OR-	<19.8	>24.0	<19.8	>25.0	<19.8	>25.0		
Condition 2	>26.9	<10.0	>28.9	<10.0	>28.9	<10.0		

NGHS Anthropometry Edit Limits for Comparison Edits
BMI vs. Circumferences

	Year 1: Age 9-10 Limits				Age 10 Limits			
Conditions	BMI	Arm	Waist	Max	BMI	Arm	Waist	Max
Condition 1 -OR-	--	--	--	--	<15.7	>25.8	>70.2	>86.3
Condition 2	--	--	--	--	>21.9	<19.8	<56.5	<71.0

	Age 11 Limits				Age 12 Limits			
Conditions	BMI	Arm	Waist	Max	BMI	Arm	Waist	Max
Condition 1 -OR-	<16.4	>27.2	>73.3	>91.1	<17.4	>28.5	>75.5	>96.1
Condition 2	>23.2	<20.9	<59.0	<75.3	>24.6	<21.9	<61.2	<80.3

	Age 13 Limits				Age 14 Limits			
Conditions	BMI	Arm	Waist	Max	BMI	Arm	Waist	Max
Condition 1 -OR-	<18.2	>29.5	>77.2	>99.4	<19.0	>30.1	>78.6	>101.5
Condition 2	>25.6	<22.7	<62.5	<84.1	>26.3	<23.5	<64.0	<86.7

	Age 15 Limits				Age 16 Limits			
Conditions	BMI	Arm	Waist	Max	BMI	Arm	Waist	Max
Condition 1 -OR-	<19.8	>30.6	>79.5	>102.5	<19.8	>30.6	>79.5	>102.5
Condition 2	>26.9	<24.3	<65.3	<88.7	>26.9	<24.3	<65.3	<88.7

	Age 17 Limits				Age 18 Limits			
Conditions	BMI	Arm	Waist	Max	BMI	Arm	Waist	Max
Condition 1 -OR-	<19.8	>30.6	>79.5	>102.5	<19.6	>37.0	>107.0	>106.0
Condition 2	>26.9	<24.3	<65.3	<88.7	>28.9	<22.0	<61.0	<89.5

	Age 19 Limits							
Conditions	BMI	Arm	Waist	Max				
Condition 1 -OR-	<19.6	>37.0	>107.0	>106.0				
Condition 2	>28.9	<22.0	<61.0	<89.5				

NGHS Anthropometry Edit Limits for Comparison Edits
Skinfolds

Any one skinfold < 10 mm and any other skinfold > 22

Section III

Tables of Anthropometry and Blood Pressure Normal-Range Edit Limits, by Age

NGHS Anthropometry Normal-Range Edit Limits
By Age

	Year 1							
	Age 9-10 Limits		**Age 10 Limits**		**Age 11 Limits**		**Age 12 Limits**	
Skinfolds	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Triceps SF (mm)	0	40	7	25	7	30	8	27
Suprailiac SF (mm)	0	40	4	27	4	30	5	31
Subscapular SF (mm)	0	40	5	23	5	29	5	29
Sum of SF (mm)	--	--	16	81	16	89	18	91

	Age 13 Limits		**Age 14 Limits**		**Age 15 Limits**		**Age 16 Limits**	
Skinfolds	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Triceps SF (mm)	6	30	8	32	9	32	8	34
Suprailiac SF (mm)	5	32	6	37	6	40	6	35
Subscapular SF (mm)	5	29	6	31	6	28	6	39
Sum of SF (mm)	20	96	22	108	23	113	23	113

	Age 17 Limits		**Age 18 Limits**		**Age 19 Limits**			
Skinfolds	Lower	Upper	Lower	Upper	Lower	Upper		
Triceps SF (mm)	9	34	9	34	9	35		
Suprailiac SF (mm)	5	34	5	33	5	33		
Subscapular SF (mm)	7	39	8	39	8	39		
Sum of SF (mm)	23	113	23	113	23	113		

9. Computed Variables

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NGHS Calculated Anthropometric Variables

Variable Name (Units)
on Analysis File

Blood Pressure Measures:

sysav	(mmHg)	Years 1 - 5: average of 2nd and 3rd measurements; Years 6 - 10: average of 2 closest of 2nd, 3rd, and 4th measurements;
dia4av	(mmHg)	Years 1 - 5: average of 2nd and 3rd measurements; Years 6 - 10: average of 2 closest of 2nd, 3rd, and 4th measurements;
dia5av	(mmHg)	Years 1 - 5: average of 2nd and 3rd measurements; Years 6 - 10: average of 2 closest of 2nd, 3rd, and 4th measurements;

Anthropometry:

htav	(cm)	Average of the two closest measurements;
wtav	(kg)	Average of the two closest measurements;
armcirav	(cm)	Average of the two closest measurements;
waistumb	(cm)	Average of the two closest measurements;
waistmin	(cm)	Average of the two closest measurements;
maxbloav	(cm)	Average of the two closest measurements;
qi	(kg/m^2)	Body Mass Index ($wtav/htav^2$) * 10,000;
pi	(kg/m^3)	Ponderal Index ($wtav/htav^3$) * 1,000,000;
lbmbia		Lean Body Mass by BIA ($htav^2$)/resist;
triscap	(mm)	tricav + scapav;

fatprop		if triscap $\leq$ 35 then
		fatprop = ((1.33 * triscap) - (0.013 * $triscap^2$) - 2.5) / 100
		if triscap > 35 then
		fatprop = ((0.546 * triscap) + 9.7) / 100;

fatwt	(kg)	fatprop * wtav;
lbmsf	(kg)	Lean Body Mass from Skinfolds (wtav - fatwt);
pctfatsf		Percent fat from skinfolds (fatprop * 100);
ratio2		Ratio of tricav / scapav;
ratio3		Ratio of tricav / (scapav + iliacav);
fatwtbia		Fat weight by BIA (wtav - lbmbia);
pfbia		Percent fat from BIA (fatwtbia/wtav) * 100;
lbmmama		Lean body Mass by midarm muscle area ((armcirav * 10) - (3.14159 * tricav))^2 / (4 * 3.14159);
mama	(mm^2)	($armcirav^2$ * 100) / (4 * 3.14159);
mafa		Midarm fat area (maa - lbmmama);

sumskin		Sum of three skinfolds: tricav + scapav + iliacav;
fasttime	(hours)	Hours between blood drawing and last reported eating time;

tricav	(mm)	Calculated the same as scapav and iliacav:
		Years 1 - 2: each measurement = min(measurement, 45);
		then average of 2 closest measurements;
		Years 3 - 5: as Years 1-2; if tric50 is checked, then tricav = 45;
		Years 6 - 9: if tricun is checked, then
		if tric50 is checked then tricav = 45;
		if tricav is missing:
		if tricun is missing then
		if tric50 is checked then tricav = 45;
		if tric50 is not checked, then tricav is calculated as in Years 3 - 5.

January 13, 1999

Pubertal Stage

PUBSTG and **MATSTAGE** are computed variables that combine pubic hair stage (PUBHR) and areolar stage (AREOLR) and also take menarche into account. There are six levels of PUBSTG and four levels of MATSTAGE:

The six levels of **PUBSTG** are:

A. Premenarche (PERIODS=NO)

Pubstg Level	Definition
1.	If both PUBHR and AREOLR = 1.
2.	If (PUBHR = 1 and AREOLR = 2) or (PUBHR = 2 and (AREOLR = 1 or 2)).
3.	If (PUBHR = 3 and (AREOLR = 1 or 2)) or (PUBHR = 1 or 2 or 3 and AREOLR = 3).
4.	If ((PUBHR = 4 or 5) and (AREOLR = 1 or 2 or 3 or 4)) or ((PUBHR = 1 or 2 or 3) and AREOLR = 4).

B. Postmenarche (PERIODS=YES)

Pubstg Level	Definition
5.	If (PUBHR = 1 or 2 or 3 or 4 and AREOLR = 1 or 2 or 3) or (PUBHR = 4 and AREOLR = 4) or (PUBHR = 5 and AREOLR = 3).
6.	If PUBHR = 5 and AREOLR = 4.

The four levels of **MATSTAGE** are:

Matstage Level	Name	Definition
1.	Pre-pubertal	This is equivalent to level 1 of PUBSTG.
2.	Pubertal	This is the equivalent of levels 2 thru 4 of PUBSTG.
3.	Post-menarchal	This is the equivalent of levels 5 and 6 of PUBSTG with periods less than two years.
4.	≥2 Yrs Post-menarchal	This is the equivalent of levels 5 and 6 of PUBSTG with periods for two years or more.

NB. PUBSTG was created when we were examining year 1 data. At that time, the response of the participant as to whether she had begun her periods was used to determine postmenarche. This misclassifies a number of girls (20 in year 1) who said they had their periods in year 1 but for a few years subsequently reported their periods had not yet begun.