

National Human Exposure Assessment Survey (NHEXAS)

Region 5 Study

Quality Systems and Implementation Plan for Human Exposure Assessment

Research Triangle Institute
Research Triangle Park, NC 27079
Cooperative Agreement CR 821902

Field Operations Protocol

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Title: Participant Schedules and Training

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**FIELD
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PROTOCOL**

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TITLE: PARTICIPANT SCHEDULES AND TRAINING

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PARTICIPANT SCHEDULES AND TRAINING

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1.0 SCOPE AND APPLICATION

Participants in the National Human Exposure Assessment Survey (NHEXAS) will be asked to collect several types of samples. These participants must be provided instructions that include all important points but are clear and simple to understand. Participants should receive both verbal and written instructions. When possible, the method or materials should also be demonstrated using practice materials. Participants must also be able to understand the day and time of day samples are to be collected. Concise schedules that describe their study activities will be provided. This protocol describes the schedule and written instructions that will be provided to NHEXAS study participants. It is not intended to reproduce the detailed description of participant instruction methods found in the individual NHEXAS sample collection protocols.

2.0 MATERIALS

Before the first monitoring visit the field staff will prepare a notebook that contains a study schedule that is specific to the participant selected activities. Written copies of instructions and diaries will be included in this notebook. A copy of the schedule that would be used for a participant that agrees to collect all types of samples is presented in Appendix A. There will be at least 32 alternate schedules, each based on different combinations of samples that a participant may agree to collect. The correct schedule may be selected using the code in the top right corner of the schedule sheet. The letter codes are interpreted as follows:

C = Core (all participants)

A = Aerosol samples

D = Dietary samples

B = Blood samples

U = Urine samples

H = Hair samples

Copies of all of the possible written instructions are provided in Appendix B. The proper instruction sheets must be selected by the staff and will be inserted in the participant notebook depending on which samples the participant has agreed to collect.

3.0 OVERVIEW OF PARTICIPANT INSTRUCTION

The field interviewer will be responsible for instructing the participant how to complete the Time Diary and Activity Questionnaire. The participant will be asked to complete one day of a practice diary with the interviewer's help. A second practice diary will be left by the interviewer. This practice diary will be checked by a field staff member during the first monitoring visit, and the participant will be asked if they had any problems or questions. Additional instruction will be provided as necessary.

One of the two staff members making the first monitoring visit to the participant's home will be responsible for going through the monitoring schedule and sample collection instructions with the participant, and with other family members as necessary. After introductions are made, the staff member will ask the participant to sit next to them in a quiet place. First, the staff member will go through the study schedule to provide the participant with an overview of what will happen, and to be sure that the participant understands what they have agreed to do.

The staff member will then examine the participant's practice diary.

Next, the staff member will provide verbal instructions for each sample type that the participant must collect. In general, the order of instruction should be standing water, urine, VOC badge, food collection, and Food Diary. This order may be changed due to circumstances in the home. The staff member will open the instruction notebook to the correct instruction page and verbally go through each instruction page while pointing in the notebook for the participant's reference. Demonstration materials (containers, practice foods) should be brought by the staff members to enhance the instruction.

It is important to provide enough instruction so that the participant will be able to successfully collect each sample. However, the staff member must also take care not to spend so much time, detail, or repetition that the participant becomes bored and loses attention. The level of detail and repetition needed will vary from participant to participant

and the staff will need to use their judgement based on participant response. Participants should always be asked if they have any questions about the schedules or procedures. Participants will be provided with a phone number so that they may ask questions after the staff leaves the home.

The notebook containing the schedule and instructions will be left with the participant for the duration of the monitoring period.

APPENDIX A

EXAMPLE PARTICIPANT SCHEDULE FOR THE NHEXAS STUDY

DAY	ACTIVITY	TIME
DAY 1	1 Study staff will visit you.	
	2 You wear your badge.	All day
	3 You wear your particle sampler.	All day
	4 You fill out your time and activity diary.	End of day
DAY 2	1 You wear your badge.	All day
	2 You wear your particle sampler.	All day
	3 You fill out your time and activity diary.	End of day
DAY 3	1 You collect a water sample.	Before any water use
	2 You collect a urine sample.	Upon waking up
	3 You wear your badge.	All day
	4 You wear your particle sampler.	All day
	5 You collect foods and beverages.	All day
	6 You fill out your food diary and your food diary followup.	All day
	7 You fill out your time and activity diary	End of day
DAY 4	1 You wear your badge.	All day
	2 You wear your particle sampler.	All day
	3 You collect foods and beverages.	All day
	4 You fill out your food diary and your food diary followup.	All day
	5 You fill out your time and activity diary	End of day
	6 Study staff will visit you to:	
	Pick up urine, water samples	
	Collect dust samples	
	Pick up food/beverage samples	
	Check time/activity and food diary	
DAY 5	1 You wear your badge.	All day
	2 You wear your particle sampler.	All day
	3 You collect foods and beverages.	All day
	4 You fill out your food diary and your food diary followup.	All day
	5 You fill out your time and activity diary	End of day
DAY 6	1 You wear your badge.	All day
	2 You wear your particle sampler.	All day
	3 You collect foods and beverages.	All day
	4 You fill out your food diary and your food diary followup.	All day
	5 You fill out your time and activity diary.	End of day
DAY 7	1 You collect a urine sample.	Upon waking up
	2 You wear your badge.	Until pickup
	3 You wear your particle sampler.	Until pickup
	4 You fill out your time and activity diary.	At pickup
	5 Study staff will visit you to:	
	Pick up urine sample	
	Collect blood and hair samples	
	Pick up badge and particle samplers	
	Pick up food/beverage samples	
	Check time/activity and food diary	
	Administer followup questionnaire	
	Pay your incentive	

If you have questions or problems, please call our field staff at: _____

APPENDIX B

WATER SAMPLE COLLECTION INSTRUCTIONS

WHEN TO COLLECT THE SAMPLE

1. We want to know what metals may be entering your water from the home plumbing. Therefore, it is very important that no water be withdrawn from any plumbing fixture (toilets, showers, faucets, others) in your home in the four hours before you collect the sample.
2. It will usually be most convenient to collect the sample immediately upon rising in the morning, but be sure that no one in the home has used any toilets, showers, or faucets before the sample is collected. You may collect the water sample during other times of the day provided no one has used any plumbing fixture during the previous four hours. You may ask another resident of the home to collect the sample for you.
3. If water is used in your home before you collect the sample, please try again on the next day.

Please collect your sample on _____

HOW TO COLLECT THE SAMPLE

1. The sample must be collected from the kitchen cold water tap.
2. Open the bottle (do not touch the inside of the container or lid).
3. Place the open bottle under the tap. It is important that you collect the first drop of water from the tap. Turn on the water and fill the bottle to the black mark on the side of the bottle.
4. Immediately screw the lid back onto the bottle. Do not open the container again.
5. Place the bottle in your refrigerator until it is picked up at the next visit.

Please fill in the following information:

DATE COLLECTED: _____

TIME COLLECTED: _____

**WAS ANY WATER FROM A FAUCET, TOILET, SHOWER, OR OTHER TAP
USED IN THE 4 HOURS BEFORE THE SAMPLE WAS COLLECTED?**

YES _____ If YES, WHAT TIME WAS THE WATER USED _____

NO _____

WATER SAMPLE COLLECTION INSTRUCTIONS

(Cold and Hot Water Supplies)

WHEN TO COLLECT THE SAMPLE

1. We want to know what metals may be entering your water from the home plumbing. Therefore, it is very important that no water be withdrawn from any plumbing fixture (toilets, showers, faucets, others) in your home in the four hours before you collect the sample.
2. It will usually be most convenient to collect the sample immediately upon rising in the morning, but be sure that no one in the home has used any toilets, showers, or faucets before the sample is collected. You may collect the water sample during other times of the day provided no one has used any plumbing fixture during the previous four hours. You may ask another resident of the home to collect the sample.
3. If water is used in your home before you collect the sample, please try again on the next day.

Please collect your water samples on _____

HOW TO COLLECT THE SAMPLE

1. The first sample must be collected from the kitchen cold water tap.
2. Open the bottle (do not touch the inside of the container or lid).
3. Place the open bottle under the tap. It is important that you collect the first drop of water from the tap. Turn on the water and fill the bottle to the black mark on the side of the bottle.
4. Immediately screw the lid back onto the bottle. Do not open the container again.
5. Repeat Steps 2-4 for the kitchen hot water tap, using the second bottle that is labeled "HOT".
6. Place the bottles in your refrigerator until it is picked up at the next visit.

Please fill in the following information:

DATE COLLECTED: _____**TIME COLLECTED:** _____**WAS ANY WATER FROM A FAUCET, TOILET, SHOWER, OR OTHER TAP
USED IN THE 4 HOURS BEFORE THE SAMPLE WAS COLLECTED?**

YES _____ If YES, WHAT TIME WAS THE WATER USED? _____

NO _____

INSTRUCTIONS FOR COLLECTING URINE SAMPLES

HOW MANY

We would like you to collect a urine samples on two days. You will collect a samples from your first morning void on each of the following two days:

FIRST SAMPLE: _____

SECOND SAMPLE: _____

TIME OF DAY

We want you to collect samples from your first morning void; that is, the time you first wake up in the morning to begin your day. (If you have a sleep schedule other than the usual overnight time period, please discuss the collection time with our staff).

HOW TO COLLECT THE SAMPLE

It is very important to collect the sample using the following instructions so that the samples will not be contaminated with dust or dirt:

1. The night before, bring a urine sample cup and the spare cup to the bathroom.
2. In the morning, before collecting the sample, wash your hands thoroughly with soap and water. (Remember, collect your water sample first, if scheduled).
3. Remove the sample cup from the plastic bag. Remove the cap from the cup, put down the cap with the inside of the lid facing up.
4. Be careful not to touch the inside of the cup or the cap with your hands, clothing, or other material. If this happens, please use the second cup.
5. Urinate directly into the cup. Do not fill past the topmost line on the side of the cup.
6. Immediately place the cap on the collection cup. Again, do not touch the inside of the cap or collection cup.
7. Place the cup back into the plastic bag and seal the plastic bag. Put the collected sample into the plastic storage box in your freezer within 5 minutes.
8. Please complete the information for the urine samples.

	First Day	Second Day
Date Collected	_____	_____
Time Collected	_____	_____
Time of last void before this sample	_____	_____

INSTRUCTIONS FOR COLLECTING URINE SAMPLES (Duplicate Samples)

HOW MANY

We would like you to collect urine samples on two days. You will collect two samples from your first morning void on each of the following two days:

FIRST SAMPLE: _____

SECOND SAMPLE: _____

TIME OF DAY

We want you to collect samples from your first morning void; that is, the time you first wake up in the morning to begin your day. (If you have a sleep schedule other than the usual overnight time period, please discuss the collection time with our staff).

HOW TO COLLECT THE SAMPLE

It is very important to collect the samples using the following instructions so that the samples will not be contaminated with dust or dirt:

1. The night before, bring two urine sample cups and the spare cup to the bathroom.
2. In the morning, before collecting the samples, wash your hands thoroughly with soap and water. (Remember, collect your water sample first, if scheduled).
3. Remove the sample cups from the plastic bag. Remove the caps from both cups, put down the caps with the inside of the lid facing up.
4. Be careful not to touch the inside of the cups or caps with your hands, clothing, or other material. If this happens, please use the second cup.
5. Urinate directly into one cup. Do not fill past the topmost line on the side of the cup. Then urinate into the second cup. Do not fill past the topmost line.
6. Immediately place the caps on the collection cups. Again, do not touch the inside of the caps or cups.
7. Place the cups back into the plastic bags and seal the plastic bags. Put the collected samples into the plastic storage box in your freezer within 5 minutes.
8. Please complete the information for the urine samples.

	First Day	Second Day
Date Collected	_____	_____
Time Collected	_____	_____
Time of last void before this sample	_____	_____

BADGE COLLECTION INSTRUCTIONS

WHEN TO WEAR YOUR BADGE

1. Your badge is designed to measure volatile chemicals like benzene, toluene, methylene chloride, and others that you inhale.
2. It is important that you wear your badge all of the time while you are awake.
3. Do not wear the badge while bathing or swimming. Please keep the badge in the same room or area when bathing or swimming.
4. Keep the badge in your bedroom and near your bed when you sleep, on a bedside table or hanger near your bed.

HOW TO WEAR YOUR BADGE

1. Never allow the white face on your badge to be covered. Chemicals in the air enter the badge through the white face. If you wear a jacket, sweater, or coat, it is important to make sure the badge is always uncovered on the outside of your clothes. Do not wear the badge with the white face towards your body.
2. Please do not touch the white face or allow rough or sharp objects to touch it; the face may tear.
3. Wear your badge as close as possible to your head. A shirt or jacket lapel is the best place to attach the badge.

REMINDERS

1. It can be easy to forget to put your badge on, particularly first thing in the morning. You may want to put a reminder note someplace you will be sure to see it. Or, you may attach the badge to something important like your keys when you go to bed, so long as the badge is near you while you sleep.
2. If you ever forget to wear your badge, it is important for us to know. Please write down below the date and number of hours the badge was not worn.

WORK BADGE COLLECTION INSTRUCTIONS

WHEN TO WEAR YOUR BADGE

1. We will measure your work exposure to volatile chemicals by having you wear two badges, and covering one badge while you are at work.
2. It is important that you wear both badges all of the time while you are awake.
3. Cover the badge with the white dot as soon as you enter your workplace, or as soon as you start your work duties if you don't work in a fixed location.
4. Uncover your badge with the white dot when you leave your workplace or finish your work duties at the end of the day. You should also uncover your badge with the white dot if you leave your work area or duties for more than 15 minutes during your work day.

HOW TO WEAR YOUR BADGE

1. Follow the general directions for your regular badge.
2. When it is time to cover your badge, push the cover gently over the top of the badge with the white dot until it won't go on any further.
3. When it is time to remove the cover, pull it gently by the edge. Turn the cover over and snap it onto the back side of the badge, or place the cover where you will find it later.

REMINDERS

1. Remember, the badge with the white dot is COVERED WHILE AT WORK.
2. Write down at the end of each day the total amount of time your badge was covered:

DAY 1	_____	_____	HOURS	_____	MINUTES
DAY 2	_____	_____	HOURS	_____	MINUTES
DAY 3	_____	_____	HOURS	_____	MINUTES
DAY 4	_____	_____	HOURS	_____	MINUTES
DAY 5	_____	_____	HOURS	_____	MINUTES
DAY 6	_____	_____	HOURS	_____	MINUTES
DAY 7	_____	_____	HOURS	_____	MINUTES

HOW TO COLLECT FOODS AND BEVERAGES

WHAT WE WANT YOU TO COLLECT

- 1) Please prepare and collect a second portion (as close as possible to the exact amount) of every food or beverage you eat at every meal, snack, or any other time on the collection days.
- 2) This does include drinking water and nonprescription vitamins.
- 3) This does not include prescription vitamins, medicines, chewing gum, toothpaste, or any other non-edible item.
- 4) Please eat the same foods you would have eaten if we were not here.

WHEN WE WANT YOU TO COLLECT THE FOOD

- 1) Please collect the foods and beverages eaten from midnight to midnight on each of the following four days:

- 2) Foods and beverages collected on one day should be kept separate from those collected on the other days.

HOW TO COLLECT THE FOOD

- 1) At every meal or snack, prepare a second plate with the same type and amounts of food you have added to your plate. Include all spices, sauces, butter, salt, ketchup, etc. Prepare a second cup, glass, or other container with the same amount of beverage that you will drink. If you can, please use the same kind of plates, cups, and glasses for the food collection as used for the meal.
- 2) If you get more servings of food or beverage during your meal, add the same amount to the second plate, cup, or glass. Use more plates, cups, or glasses if necessary.
- 3) At the end of your meal, remove from the second plate, cup or glass the same amount of leftovers on the plate, cup, or glass you used for your meal or snack.
- 4) If you are able, remove any inedible portions, like bones or pits, from foods on the second plate. (DON'T do this if you might get cut with a knife).
- 5) Add each kind of solid food to a separate zipper-lock bag. Seal each bag. Place all of the bags in the cooler or refrigerator.
- 6) Add all beverages to the plastic bottle in the cooler or refrigerator. Frozen items that could melt, like ice cream or popsicles, should also be put into the plastic bottle.
- 7) Close the jar lid and put the jar back in the cooler.

HOW TO USE THE 24-HOUR FOOD DIARY

FOR PARTICIPANTS LESS THAN 12 YEARS OLD, A PARENT OR GUARDIAN SHOULD PROVIDE ASSISTANCE, AS NEEDED, IN COMPLETING THE FOOD DIARY.

INSTRUCTIONS

- (1) We want you to list all of the foods, beverages, drinking water, or vitamins you or this child eat(s) or drink(s) from midnight to midnight.
- (2) Every time you or this child eat(s), write down the name of the meal (breakfast, lunch, dinner, snack).
- (3) Then write down on a separate line the name of every food, beverage, or vitamin that you or this child eat(s) or drink(s).
- (4) For food mixtures such as stews or potpies, please write down the major kinds of foods in the mixture. Use the lines immediately below the one on which the name of the mixture is entered.
- (5) For beverages (including water), write down how many cups or glasses that you or this child drink(s).

PARTICIPANT INSTRUCTIONS FOR THE AIR SAMPLERS
Used in the National Human Exposure Assessment Study (NHEXAS)

Your exposure to particles in the air for the next 6 days may be measured in three ways as shown in the attached figure: using a **Personal** sampler that you carry with you during your daily activities, a sampler at a central **Indoor** location in your residence, and a sampler at a nearby **Outdoor** location. Not all residences will have an Outdoor Sampler. All three sampler types operate intermittently (cycle ON and OFF) every few minutes and use a tiny pump to draw a measured air sample through filters to trap suspended dust in the air. These filters are sent to the Research Triangle Institute laboratory in the Research Triangle Park, North Carolina for analysis.

Indoor Sampler - The indoor sampler is supported on a household step stool and will be located (based on your suggestion) by a NHEXAS technician to be reasonably central to the majority of activities in your residence. It should have minimal interference on your daily activities. The sampler operates on low voltage batteries and requires no consideration on your part.

Outdoor Sampler - The outdoor sampler will be similarly located by a NHEXAS technician to be close to the residence in a secure location with minimal interference to your daily activities. This sampler also operates on batteries and requires no consideration on your part.

Personal Sampler - The personal sampler will examine the air you breathe by locating the inlet on a belt pack (for adults) or a backpack (for children). It is worn (or carried) while conducting your daily activities. The NHEXAS technician will assist you in the initial fitting. While every attempt has been made to reduce the size, weight and noise burden caused by this sampler, we recognize that its presence may pose some burden.

T Please try to become comfortable with the personal sampler as quickly as possible, such that it has a minimal influence on what you do and how you do it. If you are aware of specific situations that the personal sampler may impede, please discuss them with the technician.

T The waist belt can be adjusted to wear the pack in the front or on the left or right sides, whichever is more comfortable. The belt pack cannot readily be worn in the back. The waist catch can be undone (on either side) to remove the pack.

T The personal sampler must be worn outside the clothing and the straps should be re-adjusted to accommodate coats and jackets. Do not allow loose clothing to cover the dust sampling inlet.

T The personal sampler must be with you at all times during the 6 days to sample the air near your nose and mouth. Exception times include: sleeping, bathing and swimming, in which cases the waist pack should be placed as close by as possible with the inlet unobstructed and facing horizontally toward you. After sleeping, bathing or swimming, begin wearing the pack again as soon as possible.

T The personal sampler is reasonably rugged, but may be damaged if dropped. If the pack becomes visibly damaged, the pump noise ceases, or the noise level from the pump increases substantially, please call the technician.

T Feel free to call the NHEXAS technician if you have any other questions.

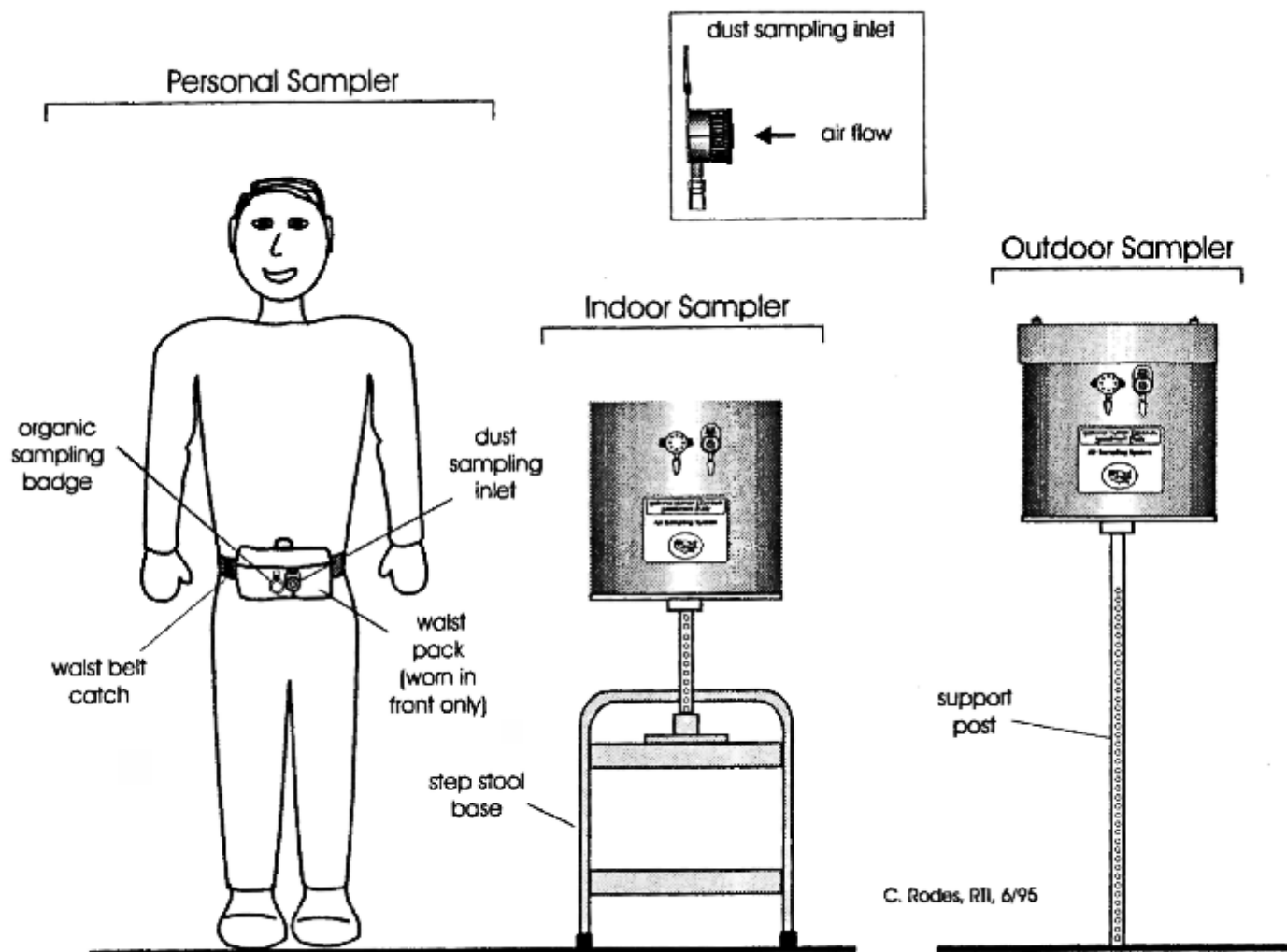


Figure 1. NHEXAS air samplers.

EXPLANATION OF REVISIONS

Revisions Made 4/96

Appendix A, Example Participant Schedule

The example schedule was revised to reflect that participants are instructed to fill out the Food Diary Followup Questionnaire each day.