

Attachment 13: Survey Question Sources & Relevance

ENROLLMENT SURVEY FOR MOTHERS						
Questionnaire Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
Record of Consent	N/A	Navajo Birth Cohort Study	None	New	Record of Informed Consent	Administrative use
Introduction/Contact Information	N/A	Navajo Birth Cohort Study	None	New	Eligibility, contact information	Administrative use
Father Participation	N/A	Navajo Birth Cohort Study	None	New	Willingness to contact baby's father	Administrative use ; Fathers play an important role in exposure assessment for epigenetics and occupational/home history that could affect outcomes in the baby
Demographics	Q1-Q13	Tar Creek project (Ettinger)	None	Q3 added about language preferences ; Q11 revised from N.American to Navajo	Demographic factors	Potential confounders or effect modifiers of relationships of interest: age, birthplace, race, socioeconomic status, education
Reproductive History	Q14-Q28	Tar Creek project (Ettinger)	None	Q24 revised to include NAIHS facilities	Reproductive history	Previous reproductive history important covariate when assessing reproductive, birth, and developmental outcomes; Past history of miscarriages, birth control use, breastfeeding, fecundity, parity serves as important covariate information when assessing reproductive and birth outcomes.
Current Pregnancy Information	Q29-Q36	Tar Creek project	None	Not Changed	Current pregnancy information	Potential confounders or effect modifiers of relationships of interest;

		(Ettinger)				Prenatal care, breast feeding, and multiplicity of birth have been associated with birth and reproductive health outcomes.
Current Medications/ Substances	Q37-Q46	Tar Creek project (Ettinger)	None	Not Changed	Use of medications and substances	Potential confounders or effect modifiers of relationships of interest; Certain medications and well as substance abuse may contribute to adverse birth outcomes.
Alcohol Use	Q47-Q49	Tar Creek project (Ettinger)	None	Not Changed	Use of alcohol	Potential confounders or effect modifiers of relationships of interest; Alcohol use during pregnancy has been associated with adverse birth outcomes.
Tobacco Use	Q50-Q59	Tar Creek project (Ettinger)	None	Not Changed	Use of tobacco	Potential confounders or effect modifiers of relationships of interest; Tobacco use during pregnancy has been associated with adverse birth outcomes.
Stress	Q60-Q65	Kessler Psychologica l Distress Scale 6-item (K6)	Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, Walters EE, Zaslavsky AM. Short screening scales to monitor population prevalences and trends in nonspecific	Not Changed	A 6-question screening scale of psychological distress embedded within the 10- question scale were developed for the redesigned US National Health Interview Survey (NHIS). 6 questions evaluate: depressed mood, agitation, fatigue, guilt/worthlessness, and anxiety.	Potential confounders or effect modifiers of relationships of interest; Stress during pregnancy has been linked to adverse health fetal outcomes as well as vulnerability to certain chemical toxins.

			psychological distress. Psychological Medicine 2002; 32: 959-976. (see Table 2 for specific questions)			
Physical Activity	Q66-Q68	Navajo Birth Cohort Study	None	New	Physical activity	Potential confounders or effect modifiers of relationships of interest; Normal BMI and physical activity have been associated with better birth outcomes.
Housing Characteristics	Q69-Q87	DiNEH Project	None	Not Changed	Housing characteristics (exposures)	Potential exposure sources; Water damage, mold, mildew, livestock, presence of pets, and coal wood burning in the home may be important covariates. Questions complement environmental home assessment testing.
Water Usage	Q88-Q92	DiNEH Project	None	Not Changed	Water usage exposures	Potential exposure sources; As indicated in the DiNEH project and CDC water hauling study, unregulated water sources may be contaminated with uranium or other heavy metals. These survey questions will complement the water testing in the home assessment.
Food Behaviors	Q93-Q99	DiNEH Project	None	Not Changed	Livestock and gardening exposures	Potential exposure sources
Occupational/ Environmental	Q100-Q115	DiNEH Project	None	Not Changed	Occupational and environmental exposures	Potential exposure sources

ENROLLMENT SURVEY FOR FATHERS

Questionnaire Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
Contact Information	N/A	Navajo Birth Cohort Study	None	New	Contact information	Administrative use
Demographics	Q1-Q9	Tar Creek project (Ettinger)	None	Q3 added about language preferences ; Q15 new question added	Demographic factors	Potential confounders or effect modifiers of relationships of interest: age, birthplace, race, socioeconomic status, education
Health History	Q10-Q15	Tar Creek project (Ettinger)	None	Not Changed	Health history	Potential confounders or effect modifiers of relationships of interest
Current Medications/ Substances	Q16-Q22	Tar Creek project (Ettinger)	None	Not Changed	Use of medications and substances	Potential confounders or effect modifiers of relationships of interest
Alcohol Use	Q23-Q25	Tar Creek project (Ettinger)	None	Not Changed	Use of alcohol	Potential confounders or effect modifiers of relationships of interest
Tobacco Use	Q26-Q35	Tar Creek project (Ettinger)	None	Not Changed	Use of tobacco	Potential confounders or effect modifiers of relationships of interest
Stress	Q36-Q41	Kessler Psychological Distress Scale 6-item (K6)	Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, Walters EE, Zaslavsky AM. Short screening scales to monitor population prevalences and	Not Changed	A 6-question screening scale of psychological distress embedded within the 10-question scale were developed for the redesigned US National Health Interview Survey (NHIS). 6 questions	Potential confounders or effect modifiers of relationships of interest

			trends in nonspecific psychological distress. Psychological Medicine 2002; 32: 959-976. (see Table 2 for specific questions)		evaluate: depressed mood, agitation, fatigue, guilt/worthlessness, and anxiety.	
Physical Activity	Q42-Q44	Navajo Birth Cohort Study	None	New	Physical activity	Potential confounders or effect modifiers of relationships of interest
Housing Characteristics	Q45-Q63	DiNEH Project	None	Not Changed	Housing characteristics (exposures)	Potential exposure sources
Water Usage	Q64-Q68	DiNEH Project	None	Not Changed	Water usage exposures	Potential exposure sources
Food Behaviors	Q69-Q74	DiNEH Project	None	Not Changed	Livestock and gardening exposures	Potential exposure sources
Occupational/ Environmental	Q75-Q90	DiNEH Project	None	Not Changed	Occupational and environmental exposures	Potential exposure sources

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Questionnaire Name/ section	Question Numbers	Source of Questions	Reference	Revisions	U
ENROLLMENT SURVEY FOR MOTHERS					
Record of Consent	N/A	Navajo Birth Cohort Study	None	New	R
Introduction/Contact Information	N/A	Navajo Birth Cohort Study	None	New	E
Father Participation	N/A	Navajo Birth Cohort Study	None	New	W

Demographics	Q1-Q13	Tar Creek project (Ettinger)	None	Q3 added about language preferences; Q11 revised from N.American to Navajo	D
Reproductive History	Q14-Q28	Tar Creek project (Ettinger)	None	Q24 revised to include NAIHS facilities	R
Current Pregnancy Information	Q29-Q36	Tar Creek project (Ettinger)	None	Not Changed	C
Current Medications/ Substances	Q37-Q46	Tar Creek project (Ettinger)	None	Not Changed	U
Alcohol Use	Q47-Q49	Tar Creek project (Ettinger)	None	Not Changed	U
Tobacco Use	Q50-Q59	Tar Creek project (Ettinger)	None	Not Changed	U
Stress	Q60-Q65	Kessler Psychological Distress Scale 6-item (K6)	Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, Walters EE, Zaslavsky AM. Short screening scales to monitor population prevalences and trends in	Not Changed	A en fo (N ag

			nonspecific psychological distress. Psychological Medicine 2002; 32: 959-976. (see Table 2 for specific questions)		
Physical Activity	Q66-Q68	Navajo Birth Cohort Study	None	New	P
Housing Characteristics	Q69-Q87	DiNEH Project	None	Not Changed	H
Water Usage	Q88-Q92	DiNEH Project	None	Not Changed	W
Food Behaviors	Q93-Q99	DiNEH Project	None	Not Changed	L
Occupational/Environmental	Q100-Q115	DiNEH Project	None	Not Changed	O

POSTPARTUM SURVEY (2 MONTHS)

Questionnaire Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
Contact Information	N/A	Navajo Birth Cohort Study	None	New	Updated contact information	Administrative use
Birth Information	Q1-Q2	Tar Creek project (Ettinger)	None	Q1 revised to include NAIHS facilities	Birth information	Potential confounders or effect modifiers of relationships of interest: age, birthplace
Breastfeeding	Q3-Q5	Tar Creek project (Ettinger)	None	Not Changed	Breastfeeding practices	Potential exposure sources
Infant Formula Preparation	Q7-Q8	Tar Creek project (Ettinger)	None	Not Changed	Use and preparation of infant formula	Potential exposure sources
Cessation of Breastfeeding	Q9-Q10	Tar Creek project (Ettinger)	None	Not Changed	Cessation of breastfeeding	Potential exposure sources
Pregnancy/Delivery Medical History	Q11-Q23	Tar Creek project (Ettinger)	None	Not Changed	Common adverse events in pregnancy/delivery	Potential confounders or effect modifiers of relationships of interest
Current Medications/Substances	Q24-Q32	Tar Creek project (Ettinger)	None	Not Changed	Use of medications and substances	Potential confounders or effect modifiers of relationships of interest
Alcohol Use	Q33-Q35	Tar Creek project (Ettinger)	None	Not Changed	Use of alcohol	Potential confounders or effect modifiers of relationships of interest
Tobacco Use	Q36-Q45	Tar Creek project (Ettinger)	None	Not Changed	Use of tobacco	Potential confounders or effect modifiers of relationships of interest
Postnatal Depression	Q46-Q55	Edinburgh Postnatal Depression Scale (EPDS)	Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: Development of the 10-item Edinburgh	Not Changed	A widely used screening tool for postpartum depression which has been adapted and validated in many languages. The 10-item EPDS questionnaire was	Potential confounders or effect modifiers of relationships of interest

			Postnatal Depression Scale. British Journal of Psychiatry 1987; 150:782-786.		developed to identify women who have postpartum depression and may be used up to 8 weeks postpartum and can also be applied for depression screening during pregnancy.	
Housing Characteristics	Q50-Q67**	DiNEH Project	None	Not Changed	Housing characteristics (exposures)	Potential exposure sources
Water Usage	Q68-Q72**	DiNEH Project	None	Not Changed	Water usage exposures	Potential exposure sources
**Note: these questions are misnumbered and should start with Q56						

POSTPARTUM SURVEY (6,9, 12 MONTHS)						
Questionnaire Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
Contact Information	N/A	Navajo Birth Cohort Study	None	New	Updated contact information	Administrative use

Current Breastfeeding	Q1-Q2	Tar Creek project (Ettinger)	None	Not Changed	Current breastfeeding practices	Potential exposure sources
Infant Formula	Q3-Q4	Tar Creek project (Ettinger)	None	Not Changed	Use and preparation of infant formula	Potential exposure sources
Cessation of Breastfeeding	Q5	Tar Creek project (Ettinger)	None	Not Changed	Cessation of breastfeeding	Potential exposure sources
Introduction of Foods	Q6-Q9	Tar Creek project (Ettinger)	None	Not Changed	Introduction of foods	Potential exposure sources
Foods Sources (WIC)	Q10	Tar Creek project (Ettinger)	None	Not Changed	Use of WIC program services	Potential confounders or effect modifiers of relationships of interest
Home Questions and Observations	Q11-Q28	Home Observation for Measurement of the Environment (HOME) Inventory Scale	Caldwell BM, Bradley R. Home Observation for Measurement of the Environment. University of Arkansas, Little Rock, 1979. Additional references available here: http://fhdri.clas.asu.edu/home/references.html	Not Changed	Designed to measure the quality and quantity of stimulation and support available to a child in the home environment. Infant/Toddler (IT) HOME is designed for use during infancy (birth to age three). These questions are designed for children up to age 12 months.	Potential confounders or effect modifiers of relationships of interest
Perceived Stress Scale	Q29-Q32	Perceived Stress Scale 4-item scale (PSS-4)	Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of Health	Not Changed	Most widely used psychological instrument for measuring perception of stress. The PPS includes	Potential confounders or effect modifiers of relationships of interest

			and Social Behavior 1983; 24: 386-396. More information available at: http://www.ncsu.edu/assessment/resources/perceived_stress_scale.pdf		10 questions (PSS-10), but a short 4-item scale (PSS-4) can be made from questions #2,4,5, and 10 of the PPS-10.	
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NUTRITION SURVEYS						
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Questionnaire Name/ Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
Food Frequency Questionnaire*	N/A	Original Source: Harvard Nurses' Health Study and Health Professionals' Study. Revised and validated for use in Native American,	1: Willett WC, Sampson L, Stampfer MJ, Rosner B, Bain C, Witschi J, Hennekens CH, Speizer FE. Reproducibility	See details below	Nutritional intake from diet will be assessed using a semi-quantitative food-frequency questionnaire based on the methods of Willet et al. and validated in Native American populations (Watts et al. 2007). Dr. Ettinger has extensive	Potential confounders or effect modifiers of relationships of interest

		<p>low-income, and pregnant women.</p>	<p>and validity of a semiquantitative food frequency questionnaire. Am J Epidemiol. 1985 Jul;122(1):51-65. 2: Wei EK, Gardner J, Field AE, Rosner BA, Colditz GA, Suitor CW. Validity of a food frequency questionnaire in assessing nutrient intakes of low-income pregnant women. Matern Child Health J. 1999 Dec;3(4):241-6. 3: Baer HJ, Blum RE, Rockett HR, Leppert J, Gardner JD, Suitor CW, Colditz GA. Use of a food frequency questionnaire in American Indian and Caucasian pregnant women: a validation study. BMC Public Health.</p>		<p>experience in nutritional assessment in Native populations living near the Tar Creek Superfund Site where this questionnaire was using successfully to establish maternal dietary patterns and nutrient intake during pregnancy and the relationships to environmental exposures. Navajo Team members have provided supplemental input to the questionnaire based on traditional diets and the UNM-CTSA nutritionists have developed nutritional equivalents for those foods.</p>	
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			2005 Dec 15;5:135. 4: Watts V, Rockett H, Baer H, Leppert J, Colditz G. Assessing diet quality in a population of low-income pregnant women: a comparison between Native Americans and whites. <i>Matern Child Health J.</i> 2007 Mar;11(2):127-36.			
Dairy	Q1-Q8	Tar Creek project (Ettinger)	Same as above	Not changed	Same as above	Potential confounders or effect modifiers of relationships of interest
Fruits	Q9-Q15	Tar Creek project (Ettinger)	Same as above	Not Changed	Same as above	Potential confounders or effect modifiers of relationships of interest
Vegetables	Q16-Q28	Tar Creek project (Ettinger)	Same as above	Added Q28 "wild spinach or other native (wild) plants"	Same as above	Potential confounders or effect modifiers of relationships of interest
Meat and Fish	Q29-Q39	Tar Creek project (Ettinger)	Same as above	Added "corn dog" to Q33; "Navajo burger"	Same as above	Potential confounders or effect modifiers of

				to Q36; revised Q37 and Q38 to include "lamb (mutton)"		relationships of interest
Sweets, Cereals, Baked Goods	Q40-Q50	Tar Creek project (Ettinger)	Same as above	Added Q50 "tortilla"	Same as above	Potential confounders or effect modifiers of relationships of interest
Other Foods	Q51-Q61	Tar Creek project (Ettinger)	Same as above	Added Q51 "Navajo taco"; Q52 "frybread"; Q53 "blue corn mush"	Same as above	Potential confounders or effect modifiers of relationships of interest
Beverages	Q62-Q69	Tar Creek project (Ettinger)	Same as above	Not changed	Same as above	Potential confounders or effect modifiers of relationships of interest
Other Eating Habits	Q70-Q84	Tar Creek project (Ettinger)	Same as above	Added Q73 "prenatal vitamins"; Q74 "type of prenatal vitamins"; revised Q77 to include "lamb (mutton)"	Same as above	Potential confounders or effect modifiers of relationships of interest
** Note: FFQ included in IRB/OMB packet has been revised based on extensive consultations with Navajo Team members						Potential confounders or effect modifiers of relationships of interest

about Navajo-specific foods						
Questionnaire Name/ Section	Question Numbers	Source of Questions	Reference	Revision	Used to Measure	Relevance of Information Obtained
WIC Women's Nutrition Questionnaire	Arizona Department of Health Services	Arizona Department of Health Services	http://www.azdhs.gov/azwic/	Not Changed	WIC nutritional assessments are general screening tools and not used for research purposes. The study team will consult with Navajo WIC program as needed.	Potential confounders or effect modifiers of relationships of interest
Energy and Nutrients	Q1-Q6	Arizona WIC Program	http://www.azdhs.gov/azwic/	Not Changed	Will consult with WIC programs as needed	Potential confounders or effect modifiers of relationships of interest
Food Groups	Q1-Q8	Arizona WIC Program	http://www.azdhs.gov/azwic/	Not Changed	Will consult with WIC programs as needed	Potential confounders or effect modifiers