

SECTION E

Now I have some questions about events that happen to everyone at some time. I'd like to know if any of these events happened to you or to anyone close to you, like your husband, parents, brothers or sisters, a child, or a close friend, during the period from three months before the pregnancy began through the first three months of the pregnancy, that is, from (ENTER DATES) ____/____/____ to ____/____/____.

E-1. Did anyone with whom you were very close die during this period?

- Yes 1 (E-2)
- No 2 (E-3)
- Don't know 8 (E-3)

E-2. Who was it that died during that time period? (CIRCLE ALL THAT APPLY.)

- Husband 1
- Parent 1
- Brother/Sister 1
- Child 1
- Grandparent 1
- Close friend 1
- Other (SPECIFY) _____ 1

E-3. Were you or was anyone close to you either separated or divorced during that period?

- Yes 1 (E-4)
- No 2 (E-5)
- Don't know 8 (E-5)

E-4. Who was it that was separated or divorced during that period? (CIRCLE ALL THAT APPLY.)

- Respondent 1
- Parent 1
- Brother/Sister 1
- Child 1
- Close friend 1
- Other (SPECIFY) _____ 1

E-5. Did you or anyone close to you lose a job during that time?

- Yes 1 (E-6)
- No 2 (SECTION 7)
- Don't know 8 (SECTION 7)

E-6. Who lost a job at that time? (CIRCLE ALL THAT APPLY.)

Respondent 1
Husband 1
Parent 1
Brother/Sister 1
Child 1
Close friend 1
Other (SPECIFY) _____ 1

SECTION F

Now I have some questions about your family.

F-1. Do you have, or did you ever have any full brothers or sisters?

- Yes 1 (F-2)
- No 2 (F-3)
- Don't know 8 (F-9)

F-2. How many full brothers and sisters have you had?

_____ **# OF SIBLINGS**

F-3. Did you have any full brothers or sisters who died before the age of one year old that you (may have forgotten/forgot to include in the [NUMBER FROM F-2] that you mentioned)?

- Yes 1 (F-4)
- No 2 (BOX 3)
- Don't know 8 (BOX 3)

F-4. How many full brothers or sisters did you forget to mention?

_____ **# OF SIBLINGS**

**BOX 3. IF R HAS NO SIBLINGS, GO TO F-9.
IF R HAS SIBLINGS, CONTINUE.**

F-5. Did (your brother or sister/either of your brothers or sisters/any of your [TOTAL NUMBER FROM F-2 AND F-4] brothers or sisters) have a health problem at birth or a birth defect that was diagnosed during the first year of life?

- Yes 1 (F-6)
- No 2 (F-9)
- Don't know 8 (F-9)

(ASK F-6 THROUGH F-8,
AS APPROPRIATE FOR EACH
SIBLING LISTED IN F-2
AND/OR F-4.)

	SIBLING #1	SIBLING #2	SIBLING #3
F-6. Did your (1st/2nd/ etc.) brother or sister have a health problem at birth or a birth defect that was diagnosed during the first year of life?	Yes. 1 (F-7) No 2 (NEXT SIBLING OR F-9) Don't know . . 8	Yes. 1 (F-7) No 2 (NEXT SIBLING OR F-9) Don't know . . 8	Yes. 1 (F-7) No 2 (NEXT SIBLING OR F-9) Don't know . . 8
F-7. What was the problem? (RECORD VERBATIM.)	_____ _____ _____ Stillborn. . . 96 (NEXT SIBLING OR F-9)	_____ _____ _____ Stillborn. . . 96 (NEXT SIBLING OR F-9)	_____ _____ _____ Stillborn. . . 96 (NEXT SIBLING OR F-9)
F-8. Did your brother or sister die from that problem?	Yes. 1 No 2 Don't know . . 8	Yes. 1 No 2 Don't know . . 8	Yes. 1 No 2 Don't know . . 8

F-9. Did your mother have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes. 1 (F-10)
No 2 (F-11)
Don't know 8 (F-11)

F-10. What type of problem did she have? (RECORD VERBATIM.)

Don't know 98

F-11. Did your father have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes. 1 (F-12)
No 2 (INTRO. TO F-13)
Don't know 8 (INTRO. TO F-13)

F-12. What type of problem did he have? (RECORD VERBATIM.)

Don't know 98

Now I have some questions about the father of the pregnancy that ended in (DDIB) and about his family.

F-13. First, when was he born?

_____/_____/_____
MONTH DAY YEAR (F-14)
Don't know 989898 (F-13a)

F-13a. How old was he at the time your pregnancy ended in (DDIB)?

AGE

F-14. Did the father of the pregnancy have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes 1 (F-15)
No 2 (F-16)
Don't know 8 (F-16)

F-15. What type of problem did he have? (RECORD VERBATIM.)

Don't know 98

F-16. Does he have, or did he ever have any full brothers or sisters?

Yes 1 (F-17)
No 2 (F-18)
Don't know 8 (F-24)

F-17. How many full brothers or sisters has he had?

OF SIBLINGS
Don't know 98

F-18. Did he have any full brothers or sisters who died before the age of one year old that you (may have forgotten/forgot to include in the [NUMBER FROM F-17] that you mentioned)?

Yes 1 (F-19)
No 2 (BOX 4)
Don't know 8 (BOX 4)

F-19. How many full brothers or sisters did you forget to mention?

OF SIBLINGS

**BOX 4. IF FATHER HAS NO SIBLINGS, GO TO F-24.
 IF FATHER HAS SIBLINGS, CONTINUE.**

F-20. Did (his brother or sister/either of his brothers or sisters/any of his [TOTAL NUMBER FROM F-17 AND F-19] brothers or sisters) have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes 1 (F-21)
 No 2 (F-24)
 Don't know 8 (F-24)

(ASK F-21 THROUGH F-23, AS APPROPRIATE, FOR EACH SIBLING LISTED IN F-17 AND/OR F-19.)

	SIBLING #1	SIBLING #2	SIBLING #3
F-21. Did his (1st/2nd/ etc.) brother or sister have a health problem at birth or a birth defect that was diagnosed during the first year of life?	Yes 1 (F-22) No 2 (NEXT) Don't know . . 8 (SIBLING OR F-24)	Yes 1 (F-22) No 2 (NEXT) Don't know . . 8 (SIBLING OR F-24)	Yes 1 (F-22) No 2 (NEXT) Don't know . . 8 (SIBLING OR F-24)
F-22. What was the problem? (RECORD VERBATIM.)	_____ _____ _____ Stillborn . . . 96 (NEXT SIBLING OR F-24)	_____ _____ _____ Stillborn . . . 96 (NEXT SIBLING OR F-24)	_____ _____ _____ Stillborn . . . 96 (NEXT SIBLING OR F-24)
F-23. Did his brother or sister die from that problem?	Yes 1 No 2 Don't know . . 8	Yes 1 No 2 Don't know . . 8	Yes 1 No 2 Don't know . . 8

F-24. Did his mother have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes 1 (F-25)
No 2 (F-26)
Don't know 8 (F-26)

F-25. What type of problem did she have? (RECORD VERBATIM.)

_____ Don't know 98

F-26. Did his father have a health problem at birth or a birth defect that was diagnosed during the first year of life?

Yes 1 (F-27)
No 2 (SECTION)
Don't know 8 (SECTION)

F-27. What type of problem did he have? (RECORD VERBATIM.)

_____ Don't know 98

SECTION G

Now, thinking about the two years just before (DOIB), that is, from (DOIB) back to (ENTER DATE) _____/_____, . . . I'd like to get a complete history of the jobs that the father of the pregnancy that ended in (DOIB) held in those two years, if any, and the times when he was not working, such as, when he was a student or was looking for work.

(ASK G-1 THROUGH G-5, AS APPROPRIATE, FOR EACH TIME PERIOD.)	FIRST TIME PERIOD
G-1. (At the time your pregnancy ended in [DOIB],/and before that,) was the father of the pregnancy working in a job for at least ten hours a week, or was he looking for work, a student, or something else? (CIRCLE ALL THAT APPLY. FOLLOW SKIP FOR LOWEST CODE CIRCLED.)	Job 1 (G-2) Looking for work 2 (G-5) Student 3 (G-5) Homemaking 4 (G-5) Something else (SPECIFY) 5 (G-5)
G-2. What was his occupation then, that is, what was his job called?	_____
G-3. What were his most important activities or duties?	_____ _____ _____
G-4. What kind of place was he working for, that is, what did they make or do? (IF ARMY, NAVY, ETC., PROBE FOR WHETHER MEMBER OF ARMED FORCES, CIVIL SERVANT, OR CONTRACTOR AND RECORD.)	_____ _____ _____
G-5. In what month and year did he start (working there/looking for work/being a student/etc.) that time?	_____/_____ MONTH YEAR

BOX 5. ● IF DATE IN G-5 is LATER THAN (DOIB -- 2 YEARS), RETURN TO G-1 FOR NEXT TIME PERIOD.

● IF FATHER HAS BEEN A STUDENT FOR ENTIRE TIME PERIOD, PROBE BY ASKING:
 Did he ever have a job for at least ten hours a week during the period from (DOIB) to (DOIB - 2 YEARS)?

- IF "YES," RECORD IN SECOND TIME PERIOD.
 - IF "NO," CONTINUE WITH BOX 6.

● IF JOB HISTORY IS COMPLETE FOR TWO YEARS PRECEDING DOIB, CONTINUE WITH BOX 6.

BOX 6. IF R MENTIONED THAT FATHER OF DDIB PREGNANCY WAS IN MILITARY, GO TO INTRODUCTION BEFORE G-7. OTHERWISE, CONTINUE.

G-6. Did the father of the (DDIB) pregnancy ever serve in the military, like in the army, navy, marines, air force, coast guard, national guard or one of the reserves?

- Yes 1 (INTRO. TO G-7)
- No 2 (G-23)
- Don't know 8 (G-23)

(You mentioned that the father of the pregnancy that ended in {DDIB} served in the military.) I am interested now in getting some information about all the times he served in the military.

G-7. When he first entered military service, did he volunteer or was he drafted?

- Volunteered 1 (G-8)
- Drafted 2 (G-8)
- ROTC 3 (G-7a)
- Don't know 8 (G-8)

G-7a. Did he ever serve in the military other than when he was in ROTC?

- Yes 1 (G-7b)
- No 2 (G-23)
- Don't know 8 (G-23)

G-7b. When he entered military service, other than when he was in ROTC, did he volunteer or was he drafted?

- Volunteered 1
- Drafted 2
- Don't know 8

G-8. For how many different continuous periods of time did he serve in the military?

- _____ (G-9)
OF TIMES
- Don't know 98 (G-9)

(ASK G-9 THROUGH G-11 FOR EACH PERIOD OF SERVICE.)

	FIRST PERIOD	SECOND PERIOD	THIRD PERIOD
G-9. In what month and year did he start his (first/second/etc.) period of service?	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>
G-10. In which branch did he serve that time? Was it the . . .	<p>Army, 01</p> <p>Army Reserves, 02</p> <p>Navy, 03</p> <p>Navy Reserves, 04</p> <p>Air Force, 05</p> <p>Air Force Reserves, . . 06</p> <p>Marines, 07</p> <p>Marine Reserves, . . . 08</p> <p>Coast Guard, 09</p> <p>Or, National Guard?. . 10</p> <p>Don't know 98</p>	<p>Army, 01</p> <p>Army Reserves, 02</p> <p>Navy, 03</p> <p>Navy Reserves, 04</p> <p>Air Force, 05</p> <p>Air Force Reserves, . . 06</p> <p>Marines, 07</p> <p>Marine Reserves, . . . 08</p> <p>Coast Guard, 09</p> <p>Or, National Guard?. . 10</p> <p>Don't know 98</p>	<p>Army, 01</p> <p>Army Reserves, 02</p> <p>Navy, 03</p> <p>Navy Reserves, 04</p> <p>Air Force, 05</p> <p>Air Force Reserves, . . 06</p> <p>Marines, 07</p> <p>Marine Reserves, . . . 08</p> <p>Coast Guard, 09</p> <p>Or, National Guard?. . 10</p> <p>Don't know 98</p>
G-11. In what month and year did that period of service end?	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>	<p>_____/_____ MONTH YEAR</p> <p>Don't know 9898</p>

G-12. Was he ever in Southeast Asia when he was in the military?

Yes 1 (G-13)
No 2 (G-23)
Don't know 8 (G-23)

G-13. Was that in Vietnam, Thailand, or some other place? (CIRCLE ALL THAT APPLY. FOLLOW SKIP FOR LOWEST CODE CIRCLED.)

Vietnam 1 (G-13a)
Thailand 2 (G-23)
Some other place (SPECIFY) 3 (G-23)

Don't know 8 (G-23)

G-13a. Was he stationed in Vietnam?

Yes 1 (G-14)
No 2 (G-13b)
Don't know 8 (G-14)

G-13b. What did he do in Vietnam? (RECORD VERBATIM.)

_____ (G-22)

G-14. Did he volunteer to serve in Vietnam?

Yes 1
No 2
Don't know 8

G-15. How many different tours of duty did he spend in Vietnam?

OF TOURS
Don't know 98

(ASK G-16 THROUGH G-21 FOR EACH TOUR OF DUTY.)

	FIRST TOUR OF DUTY	SECOND TOUR OF DUTY	THIRD TOUR OF DUTY
G-16. In what month and year did he begin his (first/second/etc.) tour of duty in Vietnam?	<p>MONTH / YEAR</p> <p>Don't know 9898</p>	<p>MONTH / YEAR</p> <p>Don't know 9898</p>	<p>MONTH / YEAR</p> <p>Don't know 9153</p>
G-17. What was the name of the unit in which he served during that tour of duty? That is, which corps, battalion, company, platoon, wing, . . . ? (RECORD VERBATIM.)	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 58</p>
G-17a. What kind of unit was that, for instance, infantry, artillery, signal battalion, intelligence unit, or what? (RECORD VERBATIM.)	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 8</p>
G-18. On that tour of duty was he located in the cities, the large bases in the country-side, the jungle, or somewhere else? (CIRCLE ALL THAT APPLY.)	<p>Cities 1</p> <p>Bases in country . . . 1</p> <p>Jungle 1</p> <p>Other (SPECIFY). . . . 1</p> <p>_____</p> <p>_____</p> <p>Don't know 8</p>	<p>Cities 1</p> <p>Bases in country . . . 1</p> <p>Jungle 1</p> <p>Other (SPECIFY). . . . 1</p> <p>_____</p> <p>_____</p> <p>Don't know 8</p>	<p>Cities 1</p> <p>Bases in country . . . 1</p> <p>Jungle 1</p> <p>Other (SPECIFY). . . . 1</p> <p>_____</p> <p>_____</p> <p>Don't know 1</p>
G-19. Where in Vietnam was he located on that tour of duty, for instance, in what section of the country was he, or what were the names of places or areas near where he served? (RECORD VERBATIM.)	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 98</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 8</p>
G-20. What was his job on that tour of duty, that is, what did he do there? (RECORD VERBATIM.)	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 998</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 998</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>Don't know 911</p>
G-21. In what month and year did his (first/second/etc.) tour of duty end?	<p>MONTH / YEAR</p> <p>Don't know 9898</p>	<p>MONTH / YEAR</p> <p>Don't know 9898</p>	<p>MONTH / YEAR</p> <p>Don't know 938</p>

G-22. Did he ever come in contact with Agent Orange while he was in Vietnam?

Yes 1
No 2
Don't know 8

G-23. Was the father of that pregnancy ever in Vietnam for some reason other than military service?

Yes 1 (G-24)
No 2 (G-29)
Don't know 8 (G-29)

G-24. What did he do in Vietnam (when he was there for something other than military service)?
(RECORD VERBATIM.)

Don't know 998

G-25. Was he located in the cities, the large bases in the countryside, the jungle, or somewhere else
(that time)? (CIRCLE ALL THAT APPLY.)

Cities 1
Bases in country 1
Jungle 1
Other (SPECIFY) 1

Don't know 8

G-26. In what month and year did he go to Vietnam (that time)?

_____/_____
MONTH YEAR
Don't know 9898

G-27. In what month and year did he leave Vietnam (that time)?

_____/_____
MONTH YEAR
Don't know 9898

G-28. Did he ever come in contact with Agent Orange while he was in Vietnam (that time)?

Yes 1
No 2
Don't know 8

G-29. Were you ever in Vietnam?

Yes. 1 (G-30)
No 2 (SECTION H)

G-30. What did you do in Vietnam, that is, were you in the military, the Red Cross, AID, the USO, or what?

Military 1 (G-31)
Red Cross. 2 (G-33)
AID. 3 (G-33)
USO. 4 (G-33)
Other (SPECIFY) _____ 5 (G-33)

G-31. In which branch of the military did you serve in Vietnam? Was it the Army, Navy, Air Force, or what?

BRANCH

G-32. What was the name of the unit in which you served while you were there? That is, which corps, battalion, company, platoon, wing, . . . ?

UNIT

Don't know. 98

G-33. Were you located in the cities, large bases in the countryside, the jungle or somewhere else? (CIRCLE ALL THAT APPLY.)

Cities 1
Bases in country 1
Jungle 1
Other (SPECIFY) _____ 1

Don't know 8

G-34. In what month and year did you first go to Vietnam?

_____/_____
MONTH YEAR

G-35. In what month and year did you leave Vietnam?

_____/_____
MONTH YEAR

SECTION H

Now I have some questions about long lasting illnesses that the father of the pregnancy may have had.

(ASK H-1 THROUGH H-5, AS APPROPRIATE, FOR EACH ILLNESS)	<u>Underactive thyroid</u> (Hypothyroidism)		
H-1. At any time before (D01B), was he ever diagnosed as having (ILLNESS)?	Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
H-2. How old was he when (ILLNESS) was first diagnosed by a doctor? (RECORD VERBATIM.)	AGE: _____ At birth 96 Don't know 98		
H-3. Did he take any medicines that a doctor prescribed for (ILLNESS)?	Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
H-4. What were the names of the medicines that he took for (ILLNESS)? (RECORD EACH MEDICATION IN A SEPARATE COLUMN.)	MEDICINE #1	MEDICINE #2	MEDICINE #3
	DK.... 98	DK.... 98	DK.... 98
(ASK H-5 FOR EACH MEDICATION.) H-5. For how long did he take (MEDICATION)? (RECORD VERBATIM.)	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98

Overactive thyroid (Hyperthyroidism)			Diabetes Mellitus or Sugar Diabetes			High blood pressure		
Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
AGE: _____ At birth 96 Don't know 98			AGE: _____ At birth 96 Don't know 98			AGE: _____ At birth 96 Don't know 98		
Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3
DK.... 98	DK.... 98	DK.... 98	DK.... 98	DK.... 98	DK.... 98	DK.... 98	DK.... 98	DK.... 93
Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 93

(ASK H-1 THROUGH H-5, AS APPROPRIATE, FOR EACH ILLNESS)	Rheumatic heart disease		
H-1. At any time before (DOB), was he ever diagnosed as having (ILLNESS)?	Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
H-2. How old was he when (ILLNESS) was first diagnosed by a doctor? (RECORD VERBATIM.)	AGE: _____ At birth 96 Don't know 98		
H-3. Did he take any medicines that a doctor prescribed for (ILLNESS)?	Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)		
H-4. What were the names of the medicines that he took for (ILLNESS)? (RECORD EACH MEDICATION IN A SEPARATE COLUMN.)	MEDICINE #1	MEDICINE #2	MEDICINE #3
	DK 98	DK 98	DK 98
(ASK H-5 FOR EACH MEDICATION.) H-5. For how long did he take (MEDICATION)? (RECORD VERBATIM.)	Still using 96	Still using 96	Still using 96
	DK 98	DK 98	DK 98

Any heart disease, like holes in the heart, that is, VSD or ASD or any other heart disease			Epilepsy or seizures			Asthma		
Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-2) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-2) No 2 (H-6) Don't know 8 (H-6)		
AGE: _____ At birth 96 Don't know 98			AGE: _____ At birth 96 Don't know 98			AGE: _____ At birth 96 Don't know 98		
Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-4) No 2 (NEXT ILLNESS) Don't know 8 (NEXT ILLNESS)			Yes 1 (H-4) No 2 (H-6) Don't know 8 (H-6)		
MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3
DK 98	DK 98	DK 98	DK 98	DK 98	DK 98	DK 98	DK 98	DK 98
Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98	Still using 96 DK 98



H-6. At any time before (DOIB), was he ever diagnosed as having cancer? Yes 1 (H-7)
 No 2 (H-14)
 Don't know 8 (H-14)

H-7. How old was he when his cancer was first diagnosed by a doctor? (RECORD VERBATIM.)

AGE

At birth. 96
 Don't know. 98

H-8. Did he take any medicines that a doctor prescribed for cancer? Yes 1 (H-9)
 No 2 (H-11)
 Don't know 8 (H-11)

	MEDICINE #1	MEDICINE #2	MEDICINE #3
H-9. What were the names of the medicines that he took for cancer? (RECORD EACH MEDICATION IN A SEPARATE COLUMN.)			
	DK..... 98	DK..... 98	DK.... 98
H-10. For how long did he take (MEDICATION)? (RECORD VERBATIM.)			
	Rest of life. 95 Still using 96 DK.... 98	Rest of life. 95 Still using 96 DK.... 98	Rest of life. 95 Still using 96 DK.... 98

H-11. Did he receive any other kind of treatment for cancer? Yes 1 (H-12)
 No 2 (H-14)
 Don't know 8 (H-14)

H-12. What kind of treatment was this? (CIRCLE ALL THAT APPLY. FOLLOW SKIP FOR LOWEST CODE CIRCLED.)

X-ray or radiation treatment 1 (H-13)
 Surgery. 2 (H-14)
 Special diet 3 (H-14)
 Other treatment (SPECIFY). 4 (H-14)

Don't know 8 (H-14)

H-13. About how many times altogether did he have (x-ray/radiation) treatments for cancer?

OF TIMES

Don't know. 98

H-14. At any time before (DOIB), was he ever diagnosed as having any other long lasting illness?

Yes 1 (H-15)
 No 2 (INTRO. TC 4-20)
 Don't know 8 (INTRO. TC 4-20)

	ILLNESS #1		
H-15. What illness was that? (RECORD EACH LONG LASTING ILLNESS IN A SEPARATE COLUMN.)			
(ASK H-16 THROUGH H-19, AS APPROPRIATE, FOR EACH ILLNESS.)			
H-16. How old was he when (ILLNESS) was first diagnosed by a doctor? (RECORD VERBATIM.)	AGE		
	At birth 96		
H-17. Did he take any medicines that a doctor prescribed for (ILLNESS)?	Yes 1 (H-18) No 2 (NEXT ILLNESS ??) Don't know 8 INTRO. TO H-20		
H-18. What were the names of the medicines that he took for (ILLNESS)? (RECORD EACH MEDICATION IN A SEPARATE COLUMN.)	MEDICINE #1	MEDICINE #2	MEDICINE #3
	DK..... 98	DK..... 98	DK.... 93
(ASK H-19 FOR EACH MEDICATION.)			
H-19. For how long did he take (MEDICATION)? (RECORD VERBATIM.)	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 95 DK.... 93

ILLNESS #2			ILLNESS #3			ILLNESS #4		
AGE			AGE			AGE		
At birth 96			At birth 96			At birth 96		
Yes 1 (H-18) No 2 (NEXT ILLNESS OR Don't know . . . 8 INTRO. TO H-20)			Yes 1 (H-18) No 2 (NEXT ILLNESS OR Don't know . . . 8 INTRO. TO H-20)			Yes 1 (H-18) No 2 (NEXT ILLNESS OR Don't know . . . 8 INTRO. TO H-20)		
MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3	MEDICINE #1	MEDICINE #2	MEDICINE #3
DK..... 98	DK..... 98	DK.... 98	DK..... 98	DK..... 98	DK.... 98	DK..... 98	DK..... 98	DK.... 98
Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98	Still using 96 DK.... 98

Now I have some more questions about the father of the pregnancy that ended in (DOB) and about what he did right around the time that the pregnancy started.

H-20. During the period from three months before the pregnancy started through the first three months of the pregnancy, did the father of the pregnancy smoke cigarettes?

Yes 1 (H-21)
No 2 (INTRO. TO I-25)
Don't know 8 (INTRO. TO I-25)

H-21. In which months during this period did he smoke cigarettes? (CIRCLE ALL THAT APPLY.)

3rd month before pregnancy began 1
2nd month before pregnancy began 1
1st month before pregnancy began 1
1st month of pregnancy 1
2nd month of pregnancy 1
3rd month of pregnancy 1
Don't know 8

H-22. Did he usually smoke low-tar cigarettes, another type of filtered cigarette or unfiltered cigarettes?

Low-tar cigarettes 1
Other filtered cigarettes 2
Unfiltered cigarettes 3
Don't know 8

H-23. (When he smoked) during this period, about how many cigarettes did he smoke in a day?

Less than one a day 01
About one a day 02
Just a few (2-4) 03
About half a pack (5-14) 04
About a pack (15-24) 05
About a pack and a half (25-34) 06
About 2 packs (35-44) 07
More than 2 packs (45+) 08
Don't know 98

H-24. Did he usually inhale?

Yes 1
No 2
Don't know 8

The next questions are about alcoholic beverages.

H-25. During the period from three months before the pregnancy began through the first three months of the pregnancy, did the father ever drink beer, wine, or hard liquor?

Yes. 1 (H-26)
No 2 (INTRO. TO H-31)
Don't know 8 (INTRO. TO H-31)

H-26. In which months during this period did he drink beer, wine, or hard liquor? (CIRCLE ALL THAT APPLY.)

3rd month before pregnancy began 1
2nd month before pregnancy began 1
1st month before pregnancy began 1
1st month of pregnancy 1
2nd month of pregnancy 1
3rd month of pregnancy 1
Don't know 8

H-27. During that time, about how often did he drink beer, wine, or hard liquor? Would you say it was . . .

Less than 1 day a week, 1
1 or 2 days a week, 2
Every other day, 3
Or, every day? 4
Don't know 8

H-28. On the days that he drank beer, wine, or hard liquor, about how many drinks did he have in a day?

_____ # OF DRINKS
Don't know 98

H-29. During that time, about how often did he have five or more drinks of beer, wine, or hard liquor at one particular time? Would you say it was . . .

Every day, 1
Every other day, 2
Once or twice a week, 3
Once every couple of weeks, 4
Or, once a month or less often? 5
Never 6
Don't know 8

Now I have some questions about drugs you or the father may have used during the time from three months before the pregnancy began through the first three months of the pregnancy. As I go through these questions, feel free to tell me if you don't want to answer.

(ASK H-30 FOR EACH DRUG. THEN GO BACK AND ASK H-31 AND H-32 FOR EACH DRUG USED IN H-30.)	Marijuana	Hashish
H-30. During that time did the father ever try (DRUG)?	Yes 1 No 2 Don't know . . . 8	Yes 1 No 2 Don't know . . . 8
H-31. In which months during this period did he use (DRUG)? (CIRCLE ALL THAT APPLY.)	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8
H-32. How often did he use (DRUG) during this period? Was it . . .	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8

Hallucinogenics, like LSD, acid, or mescaline	Cocaine	Heroin	Methadone
Yes. 1 No 2 Don't know 8 (NEXT DRUG)	Yes. 1 No 2 Don't know 8 (NEXT DRUG)	Yes. 1 No 2 Don't know 8 (NEXT DRUG)	Yes. 1 No 2 Don't know 8 (BOX 9)
3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 1
Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 1

BOX 7. IF "YES" FOR ANY DRUG IN H-30, ASK H-31 AND H-32 FOR EACH DRUG USED. OTHERWISE CONTINUE.

(ASK H-33 FOR EACH DRUG. THEN GO BACK AND ASK H-34 AND H-35 FOR EACH DRUG USED IN H-33.)

	Marijuana	Hashish
H-33. During that time, did <u>you</u> ever try (DRUG)?	Yes. 1 (NEXT No 2 (DRUG) Don't know . . . 8	Yes. 1 (NEXT No 2 (DRUG) Don't know . . . 8
H-34. In which months during this period did you use (DRUG)? (CIRCLE ALL THAT APPLY.)	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8
H-35. How often did you use (DRUG) during this period? Was it . . .	Less than 1 day } (NEXT a week, 1 } DRUG 1 or 2 days } USED a week, 2 } OR Every other day, } SEC. Or, every day? . 4 } I) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)	Less than 1 day } (NEXT a week, 1 } DRUG 1 or 2 days } USED a week, 2 } OR Every other day, } SEC. Or, every day? . 4 } I) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)
H-35a. How often did you use (DRUG) <u>before</u> the pattern changed?	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8
H-35b. How often did you use (DRUG) <u>after</u> the pattern changed?	Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8
H-35c. Were you pregnant at the time you changed your pattern of (DRUG) usage?	Yes. 1 (NEXT No 2 (DRUG) Don't know . . . 8 (USED OR SECTION I)	Yes. 1 (NEXT No 2 (DRUG) Don't know . . . 8 (USED OR SECTION I)
H-35d. How many <u>weeks</u> pregnant were you at the time you changed your pattern of (DRUG) usage?	NUMBER OF WEEKS Don't know 98	NUMBER OF WEEKS Don't know 98

Hallucinogenics, like LSD, acid, or mescaline	Cocaine	Heroin	Methadone
Yes 1 No 2 (NEXT DRUG) Don't know . . . 8	Yes 1 No 2 (NEXT DRUG) Don't know . . . 8	Yes 1 No 2 (NEXT DRUG) Don't know . . . 8	Yes 1 No 2 (NEXT DRUG) Don't know . . . 8
3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8	3rd month <u>before</u> pregnancy began. . . 1 2nd month <u>before</u> pregnancy began. . . 1 1st month <u>before</u> pregnancy began. . . 1 1st month <u>of</u> pregnancy. 1 2nd month <u>of</u> pregnancy. 1 3rd month <u>of</u> pregnancy. 1 Don't know 8
Less than 1 day (NEXT DRUG USED OR SECT. I) a week, 1 1 or 2 days 2 OR Every other day, 3 SEC. Or, every day? . 4 1) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)	Less than 1 day (NEXT DRUG USED OR SECT. I) a week, 1 1 or 2 days 2 OR Every other day, 3 SEC. Or, every day? . 4 1) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)	Less than 1 day (NEXT DRUG USED OR SECT. I) a week, 1 1 or 2 days 2 OR Every other day, 3 SEC. Or, every day? . 4 1) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)	Less than 1 day (NEXT DRUG USED OR SECT. I) a week, 1 1 or 2 days 2 OR Every other day, 3 SEC. Or, every day? . 4 1) Pattern changed. 5 (H-35a) Don't know . . . 8 (NEXT DRUG USED OR SECT. I)
Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day a week, 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8
Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8	Less than 1 day/wk, . . 1 1 or 2 days a week, . . 2 Every other day, . . . 3 Or, every day? 4 Don't know 8
Yes 1 (NEXT DRUG USED OR SECTION I) No 2 Don't know . . . 8	Yes 1 (NEXT DRUG USED OR SECTION I) No 2 Don't know . . . 8	Yes 1 (NEXT DRUG USED OR SECTION I) No 2 Don't know . . . 8	Yes 1 (NEXT DRUG USED OR SECTION I) No 2 Don't know . . . 8
NUMBER OF WEEKS Don't know 98	NUMBER OF WEEKS Don't know 98	NUMBER OF WEEKS Don't know 98	NUMBER OF WEEKS Don't know 98

BOX 8. IF "YES" FOR ANY DRUG IN H-33, ASK H-34 AND H-35 FOR EACH DRUG USED. OTHERWISE CONTINUE.

SECTION I

Now, I have just a few questions about your background and about the background of the father of the pregnancy that ended in (DDIB).

I-1. What is your racial background? Are you black, white, Asian or Pacific Islander or American Indian or Alaskan native? (CIRCLE ALL THAT APPLY.)

Black 1
White 1
Asian or Pacific Islander 1
American Indian or Alaskan native 1

I-2. Most people in this country have ancestors who came here from other parts of the world. What nationality or ethnicity were your ancestors, for instance, Puerto Rican, English, Jewish, Afro-American, Chinese, . . . ? (CIRCLE ALL THAT APPLY.)

Afro-American 01
American Indian 02
Chinese 03
Cuban 04
English, Scot, Welsh 05
French 06
German 07
Indian (Eastern) 08
Irish 09
Italian 10
Japanese 11
Jewish 12
Mexican American (Mexican, Mexicano
Chicano) 13
Pakistani 14
Polish 15
Puerto Rican 16
Russian 17
Other Asian or Pacific Islander such
as Korean, Filipino or Samoan 18
Other Spanish or Latin American 19
Other (SPECIFY) _____ 20

American 21

I-3. What is the father's race? Is he black, white, Asian or Pacific Islander, or American Indian or Alaskan native? (CIRCLE ALL THAT APPLY.)

Black. 1
White. 1
Asian or Pacific Islander. 1
American Indian or Alaskan native. 1

I-4. What nationality or ethnicity were the father's ancestors? (CIRCLE ALL THAT APPLY.)

Afro-American. 01
American Indian. 02
Chinese. 03
Cuban. 04
English, Scot, Welsh 05
French 06
German 07
Indian (Eastern) 08
Irish. 09
Italian. 10
Japanese 11
Jewish 12
Mexican American (Mexican, Mexicano
Chicano) 13
Pakistani. 14
Polish 15
Puerto Rican 16
Russian. 17
Other Asian or Pacific Islander such
as Korean, Filipino or Samoan. 18
Other Spanish or Latin American. 19
Other (SPECIFY) _____ 20

American 21
Don't know 98

I-5. What is the highest grade or year of regular school or college that you have completed?

No formal schooling. 01
1-6 years. 02
7-9 years. 03
10-11 years. 04
12 years, completed high school. 05
1-3 years of college 06
4 years of college, bachelor's
degree 07
5 or more years of college, post-
graduate work. 08

I-6. What is the highest grade or year of regular school or college that the father has completed?

- No formal schooling. 01
- 1-6 years. 02
- 7-9 years. 03
- 10-11 years. 04
- 12 years, completed high school. 05
- 1-3 years of college. 06
- 4 years of college, bachelor's degree 07
- 5 or more years of college, post-graduate work. 08
- Don't know 98

I-7. Which of the following groups best describes your total family income before taxes in (YEAR OF INDEX BIRTH)? Was it . . .

- Less than \$5,000. 1
- \$ 5,000 to \$ 9,999. 2
- \$10,000 to \$14,999. 3
- \$15,000 to \$24,999. 4
- \$25,000 to \$34,999. 5
- Or, \$35,000 or more? 6
- Don't know 8

I-8. We would like to mail a short questionnaire to your mother and to the father's mother. The questionnaire will ask some questions about their families. Is this alright with you?

MOTHER'S MOTHER

FATHER'S MOTHER

- Alright to mail. . . . 1 (ASK I-9)
- Not alright to mail. . 2 }
- Mother deceased. . . . 3 } (FATHER'S MOTHER)

- Alright to mail. . . . 1 (ASK I-10)
- Not alright to mail. . 2 }
- Mother deceased. . . . 3 } (I-11)

I-9. What is your mother's name, current mailing address, and phone number?

I-10. And what is the name, current mailing address, and phone number of the father's mother?

NAME: _____
STREET: _____
CITY: _____
STATE & ZIP: _____
PHONE #: (_____) _____
 Area code
Don't know 98

NAME: _____
STREET: _____
CITY: _____
STATE & ZIP: _____
PHONE #: (_____) _____
 Area code
Don't know 98

- BOX 10. ● IF FATHER OF (DDIB) IS LISTED AS UNKNOWN, YET LIVES WITH MOTHER, OBTAIN HIS FULL NAME BEFORE ATTEMPTING TO INTERVIEW HIM.
- IF FATHER AVAILABLE NOW, GO TO STATEMENT BELOW CLOSING.
 - IF UNABLE TO INTERVIEW FATHER NOW, GET INFORMATION ABOUT BEST TIME TO CALL HIM, RECORD INFORMATION ON CALL RECORD, AND THEN GO TO CLOSING STATEMENT.

I-14. What is his full name and his current address and phone number? (PROBE FOR ZIP CODE.)

NAME: _____

STREET: _____

CITY, STATE, ZIP: _____

PHONE #: (_____)
 AREA CODE

Don't know 98

CLOSING STATEMENT: Thank you again. My supervisor may be calling you to confirm some of the answers I have recorded.

(IF FATHER TO BE INTERVIEWED NOW SAY) In order to maintain the confidentiality of the information you just gave to me, another interviewer will conduct his interview. She will come to the phone right now.

9. APPENDIX B



1. Logistic Regression Models Used for the Basic and Primary Adjusted Analyses

The models used for tests of hypotheses in the Basic analyses are outlined in Appendix B, Table 1, and the models used for the Primary Adjusted analyses are presented in Appendix B, Table 2 (see Methods and Results sections for descriptions of hypotheses; see also Tables 52 and 53). The Basic analyses required 16 specific models, 6 to calculate the main effects of exposure variables and 10 to determine interaction on race and period of birth with respect to the exposure variable. The Primary Adjusted analyses required 11 models, 6 to calculate the main effects and 5 to examine interactions. Each line in the two tables represents an independent variate or covariate in one of the models. Each model used to estimate a main effect is flagged with an asterisk. In all models, the dependent variable represented the presence or absence of the defect in question and was coded 1 or 0, respectively. Likewise, in all models, cases and controls were matched by two categories of race, three categories of period of birth, and 20 hospitals, forming 120 strata in all. The specific variables in each model and the manner in which they were coded can also be found in Appendix B, Tables 1 and 2.

Calculation of Confidence Intervals and Tests of Significance

For dichotomous exposure variables (Basic and Primary Adjusted models 1, 2, 5, and 6), the magnitude of the effect was expressed in terms of odds ratios. The 95% confidence interval was calculated as follows (where SE is standard error):

$$\text{LOWER 95} = \exp(\beta - 1.96 \text{ SE}(\beta))$$

$$\text{UPPER 95} = \exp(\beta + 1.96 \text{ SE}(\beta))$$

and the odds ratio was determined to be significant if the 95% confidence interval did not include 1. This determination of statistical significance through the computation of confidence intervals implies the use of 2-tailed tests. The rationale for using this approach is outlined in Section 2 of this Appendix.

For the continuous exposure variables (Basic and Primary Adjusted models 3 and 4), the magnitude of the effect was expressed by the (unexponentiated) betas. The 95% confidence limits were calculated as follows:

$$\text{LOWER 95} = \beta - 1.96 \text{ SE}(\beta)$$

$$\text{UPPER 95} = \beta + 1.96 \text{ SE}(\beta)$$

The regression coefficient (i.e., the slope) was determined to be significant if the confidence interval did not include 0.

Interaction in the Basic Analyses

As Appendix B, Table 1, shows, for each Basic analysis the "A" model is equivalent to a separation of the effect of the exposure variable for the two race groups, and the "B" model is equivalent to a separation of the periods of birth.

The interaction terms between exposure and race and exposure and period of birth were actually computed by using the regression coefficients from the "A" and "B" models, respectively. In the 2A Model, for instance, there were two independent variables, one contrasting White race Vietnam veterans with everyone else, and one contrasting Vietnam veterans of Other races with everyone else. But because there was matching on race, White race Vietnam veterans were compared only with White race non-Vietnam veterans, and likewise Other races were compared only with each other. Therefore, the beta for the White race (β_w) represents the risk for Whites alone and the beta for Other races (β_o) represents the risk for Other

Other races beta:

$$\beta = \beta_w - \beta_o$$

The standard error of this term can be shown to be

$$SE(\beta) = [\text{Var}(\beta_w) + \text{Var}(\beta_o) - 2 \text{Covar}(\beta_w, \beta_o)]^{-1/2}$$

where $\text{Covar}(\beta_w, \beta_o) = 0$ because the two betas are independent as a result of the race matching. When $\beta/SE(\beta) > 1.96$, then interaction between race groups with respect to the exposure variable at the 95% confidence level was said to be present.

Interaction with respect to the exposure variable was examined individually between each of the periods of birth with the "B" models in a manner analogous to the examination of interaction between the race groups. In addition, the log likelihood functions of the main effect model and the "B" model were compared by means of a chi-square test with two degrees of freedom. This was done to assess overall interaction as indicated by a significant increase in the log likelihood when periods were examined separately (Schlesselman, 1982, chap. 8).

Interaction in Primary Adjusted Analyses

Appendix B, Table 2, shows that the "A" model in Primary Adjusted analyses 2 thru 6 directly utilizes as covariates the product of the exposure variable and each of the "essential" variables (other than primary relative). Tests of significance were performed individually for each of these interaction variables, with $\beta/SE(\beta) > 1.96$ indicating significant interaction.

2. Rationale for Use of 2-Tailed Tests of Significance

In this study 2-tailed rather than 1-tailed significance tests were used for two reasons:

(1) Although this study was done primarily in response to concern that Vietnam veterans may have an increased risk of fathering babies with birth defects, there was no empirical evidence to suggest that an increased risk was more likely than a decreased risk. The level of knowledge of the possible effects that Vietnam service or particular exposure among Vietnam veterans might have on the risk of birth defects was such that one could not ignore the possibility of a decreased risk. Hypothesis testing in situations where the possibility of a decrease as well as an increase in risk must be entertained calls for a 2-tailed test. Alternately stated, in performing a 2-tailed significance test, one is simply recognizing that large "protective" effects (in addition to "harmful" effects) indicated by the data will be acknowledged (Armitage, 1971).

(2) In this analysis, hypothesis testing was done for a large number of defect categories. Results of some tests were expected to be statistically significant solely because of chance fluctuation. The number and types of defect categories that are significantly increased compared with those that are significantly decreased might provide a valuable perspective in making an overall assessment of study results. This assessment would not be possible with 1-tailed tests.

Significance testing for this study was done with alpha error, the probability of rejecting the null hypothesis when it is true, set at 0.05. This choice of alpha abounds in the epidemiologic literature, and may be viewed as striking a balance between the desire not to falsely reject the null hypothesis too often, while at the same time not unduly sacrificing statistical power to detect true departures from the null. Choosing a particular alpha value entails individual judgment, and others may have made a different choice. The data presented for this study will (in almost every instance) allow one to pick a different alpha level

and determine whether or not the results of the statistical testing are changed. This exercise is, however, not without peril—the most apparent pitfall is that the choice of alpha may be influenced by the data results. This could occur if one peruses the data before choosing a particular alpha level. Clearly, this situation presents an opportunity to change “almost significant” results to “significant” ones (or vice versa) by choosing a slightly different alpha level. The choice must be made before the data results are known, and the choice must be irrevocable and not retained merely because the investigator is pleased with the results of the statistical tests.

This discussion may convey an inappropriate perception of the intended role of significance testing in the context of this study, and additional comment is in order. Tests of significance are clearly useful as a summary device and in analytic processes where a dichotomy of outcome in a previous step determines the course of analysis in subsequent steps. Indeed, significance testing has played these roles in the present study. The “bottom line” conclusions from an epidemiologic study, however, can rarely, if ever, be appropriately drawn solely from whether or not particular comparisons have been labeled “significant.” A host of other factors must be considered as well. For example, the size of the point estimate, the alpha level, statistical power, biologic plausibility, and various caveats brought about by the limitations of study design or data collection are all important factors to consider in arriving at an overall synthesis of study results.

APPENDIX B, TABLE 1

Model Components and Independent Variable Coding Specifications for the Basic Analyses

HYPOTHESIS/MODEL	VARIABLE NAME	CODED VALUES OF INDEPENDENT VARIABLES
Veteran Status		
Model 1*	VET	1=veterans(Vietnam veterans excl'd); 0=nonvet
Vietnam Veteran Status		
Model 2*	VNVET	1=Vietnam veteran; 0=other
Model 2A	WHVNVET	1=White Vietnam veteran; 0=other
2A	NWHVNVET	1=Other Vietnam veteran; 0=other
Model 2B	PER1VVET	1=birth period 1 Vietnam veteran; 0=other
2B	PER2VVET	1=birth period 2 Vietnam veteran; 0=other
2B	PER3VVET	1=birth period 3 Vietnam veteran; 0=other
AO Exposure Opportunity Index 1		
Model 3*	DOD	1-5=Vietnam veteran; 0=other
Model 3A	WHDOD	1-5=White Vietnam veteran; 0=other
3A	NWHDOD	1-5=Other Vietnam veteran; 0=other
Model 3B	PER1DOD	1-5=birth period 1 Vietnam veteran; 0=other
3B	PER2DOD	1-5=birth period 2 Vietnam veteran; 0=other
3B	PER3DOD	1-5=birth period 3 Vietnam veteran; 0=other
AO Exposure Opportunity Index 2		
Model 4*	SLF	1-5=Vietnam veteran; 0=other
Model 4A	WHSLF	1-5=White Vietnam veteran; 0=other
4A	NWHSLF	1-5=Other Vietnam veteran; 0=other
Model 4B	PER1SLF	1-5=birth period 1 Vietnam veteran; 0=other
4B	PER2SLF	1-5=birth period 2 Vietnam veteran; 0=other
4B	PER3SLF	1-5=birth period 3 Vietnam veteran; 0=other
Self-Report AO Exposure 1**		
Model 5*	AOEXP	1=yes; 0=other
Model 5A	WHAOEXP	1=yes & White; 0=other
5A	NWHAOEXP	1=yes & Other; 0=other
Model 5B	PER1AOXP	1=yes & birth period 1; 0=other
5B	PER2AOXP	1=yes & birth period 2; 0=other
5B	PER3AOXP	1=yes & birth period 3; 0=other
Self-Report AO Exposure 2		
Model 6*	AOEXP	1=yes + don't know; 0=other
Model 6A	WHAOEXP	1=yes + don't know & White; 0=other
6A	NWHAOEXP	1=yes + don't know & Other; 0=other
Model 6B	PER1AOXP	1=yes + don't know & birth period 1; 0=other
6B	PER2AOXP	1=yes + don't know & birth period 2; 0=other
6B	PER3AOXP	1=yes + don't know & birth period 3; 0=other

Note: *model used to estimate main effect.

**Vietnam veterans responding "don't know" excluded from analysis.

APPENDIX B, TABLE 2
Model Components and Independent Variable Coding
Specifications for the Primary Adjusted Analyses

HYPOTHESIS/MODEL	VARIABLE NAME	CODED VALUES OF INDEPENDENT VARIABLES
Veteran Status		
Model 1*	VET	1=veterans (Vietnam veterans excl'd); 0=non-vet
1	MATAGE	continuous in years of age at birth
1	MATED1	1=12-15 years school; 0=other
1	MATED2	1=16+ years school; 0=other
1	MATALC	continuous in drinks per week
Vietnam Veteran Status		
Model 2*	VNVET	1=Vietnam veteran; 0=other
2	MATAGE	continuous in years of age at birth
2	MATED1	1=12-15 years school; 0=other
2	MATED2	1=16+ years school; 0=other
2	MATALC	continuous in drinks per week
Model 2A	VNVET	1=Vietnam veteran; 0=other
2A	MATAGE	continuous in years of age at birth
2A	MATED1	1=12-15 years school; 0=other
2A	MATED2	1=16+ years school; 0=other
2A	MATALC	continuous in drinks per week
2A	VNVXAGE	VNVET*MATAGE
2A	VNVXED1	VNVET*MATED1
2A	VNVXED2	VNVET*MATED2
2A	VNVXALC	VNVET*MATALC
AO Exposure Opportunity Index 1		
Model 3*	DOD	1-5=Vietnam veteran; 0=other
3	MATAGE	continuous in years of age at birth
3	MATED1	1=12-15 years school; 0=other
3	MATED2	1=16+ years school; 0=other
3	MATALC	continuous in drinks per week
Model 3A	DOD	1-5=Vietnam veteran; 0=other
3A	MATAGE	continuous in years of age at birth
3A	MATED1	1=12-15 years school; 0=other
3A	MATED2	1=16+ years school; 0=other
3A	MATALC	continuous in drinks per week
3A	DXAGE	DOD*MATAGE
3A	DXED1	DOD*MATED1
3A	DXED2	DOD*MATED2
3A	DXALC	DOD*MATALC
AO Exposure Opportunity Index 2		
Model 4*	SLF	1-5=Vietnam veteran; 0=other
4	MATAGE	continuous in years of age at birth
4	MATED1	1=12-15 years school; 0=other
4	MATED2	1=16+ years school; 0=other
4	MATALC	continuous in drinks per week
Model 4A	SLF	1-5=Vietnam veteran; 0=other
4A	MATAGE	continuous in years of age at birth
4A	MATED1	1=12-15 years school; 0=other
4A	MATED2	1=16+ years school; 0=other
4A	MATALC	continuous in drinks per week
4A	SXAGE	SLF*MATAGE
4A	SXED1	SLF*MATED1
4A	SXED2	SLF*MATED2
4A	SXALC	SLF*MATALC

Note: *model used to estimate main effect.

**Vietnam veterans responding "don't know" excluded from analysis.

APPENDIX B, TABLE 2 — Continued
Model Components and Independent Variable Coding
Specifications for the Primary Adjusted Analyses

HYPOTHESIS/MODEL	VARIABLE NAME	CODED VALUES OF INDEPENDENT VARIABLES
Self-Report of AO Exposure 1**		
Model 5*	AOEXP	1=yes; 0=other
5	MATAGE	continuous in years of age at birth
5	MATED1	1=12-15 years school; 0=other
5	MATED2	1=16+ years school; 0=other
5	MATALC	continuous in drinks per week
Model 5A	AOEXP	1=yes; 0=other
5A	MATAGE	continuous in years of age at birth
5A	MATED1	1=12-15 years school; 0=other
5A	MATED2	1=16+ years school; 0=other
5A	MATALC	continuous in drinks per week
5A	AXAGE	AOEXP*MATAGE
5A	AXED1	AOEXP*MATED1
5A	AXED2	AOEXP*MATED2
5A	AXALC	AOEXP*MATALC
Self-Report of AO Exposure 2		
Model 6*	AOEXP	1=yes + don't know; 0=other
6	MATAGE	continuous in years of age at birth
6	MATED1	1=12-15 years school; 0=other
6	MATED2	1=16+ years school; 0=other
6	MATALC	continuous in drinks per week
Model 6A	AOEXP	1=yes + don't know; 0=other
6A	MATAGE	continuous in years of age at birth
6A	MATED1	1=12-15 years school; 0=other
6A	MATED2	1=16+ years school; 0=other
6A	MATALC	continuous in drinks per week
6A	AXAGE	AOEXP*MATAGE
6A	AXED1	AOEXP*MATED1
6A	AXED2	AOEXP*MATED2
6A	AXALC	AOEXP*MATALC

10. APPENDIX C

Appendix C
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
ALL CASE BABIES							
Index 1 ^b	Cases	3605	121	60	54	40	44
	Controls	2200	73	31	34	18	23
Index 2 ^c	Cases	3605	118	70	79	53	26
	Controls	2200	78	46	41	23	14
MULTIPLE DEFECTS							
Index 1	Cases	797	33	13	12	8	9
	Controls	2166	71	30	33	18	23
Index 2	Cases	797	22	22	18	12	5
	Controls	2166	75	46	41	21	14
TOTAL NERVOUS SYSTEM DEFECTS							
Index 1	Cases	480	18	7	11	6	6
	Controls	2157	73	30	33	18	23
Index 2	Cases	480	14	6	12	12	3
	Controls	2157	76	46	40	22	14
TOTAL EYE DEFECTS							
Index 1	Cases	84	3	1	1	0	2
	Controls	1708	57	28	27	15	19
Index 2	Cases	84	0	2	3	0	1
	Controls	1708	62	35	34	16	11
TOTAL CARDIOVASCULAR DEFECTS							
Index 1	Cases	726	26	14	8	8	8
	Controls	2159	72	30	34	17	23
Index 2	Cases	726	22	18	21	7	2
	Controls	2157	76	44	40	22	14
COMPLEX CARDIOVASCULAR DEFECTS							
Index 1	Cases	326	9	4	3	3	3
	Controls	2040	68	29	32	15	22
Index 2	Cases	326	6	6	8	2	0
	Controls	2038	73	43	37	19	13
TOTAL RESPIRATORY DEFECTS							
Index 1	Cases	29	1	1	0	0	0
	Controls	1144	47	21	13	11	16
Index 2	Cases	29	2	0	2	0	0
	Controls	1179	54	24	27	11	9
TOTAL GASTROINTESTINAL DEFECTS							
Index 1	Cases	798	16	16	13	11	9
	Controls	2152	71	31	33	18	23
Index 2	Cases	798	25	15	12	16	10
	Controls	2152	75	46	41	22	14

^aSee section 2.7 for explanation.

^bIndex 1 — index scores based on information contained in military records.

^cIndex 2 — index scores based on information obtained during interviews.

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
TOTAL SEX ORGANS DEFECTS							
Index 1	Cases	191	20	4	5	5	9
	Controls	852	68	30	28	15	22
Index 2	Cases	191	16	7	7	3	6
	Controls	852	72	40	37	20	4
TOTAL URINARY TRACT DEFECTS							
Index 1	Cases	162	5	3	2	1	1
	Controls	2026	67	29	30	17	21
Index 2	Cases	162	4	3	2	3	0
	Controls	2026	72	42	36	20	3
TOTAL MUSCULOSKELETAL DEFECTS							
Index 1	Cases	762	31	13	5	9	7
	Controls	2168	72	30	32	17	23
Index 2	Cases	762	27	14	18	6	4
	Controls	2170	75	44	39	23	4
TOTAL ENDOCRINE DEFECTS							
Index 1	Cases	30	1	0	1	0	0
	Controls	1224	46	20	16	10	5
Index 2	Cases	30	1	1	0	1	0
	Controls	1224	49	29	22	11	8
AUTOSOMAL CHROMOSOME DEFECTS							
Index 1	Cases	207	8	2	3	0	2
	Controls	2089	71	29	34	17	23
Index 2	Cases	207	9	3	2	2	0
	Controls	2089	74	44	38	22	4
DOMINANT MUTATIONS							
Index 1	Cases	11	0	0	0	0	0
	Controls	756	24	15	15	7	10
Index 2	Cases	11	0	0	0	0	0
	Controls	756	24	14	15	5	6
ANENCEPHALUS AND SPINA BIFIDA							
Index 1	Cases	272	8	5	8	5	2
	Controls	2013	71	30	32	17	23
Index 2	Cases	272	5	3	8	9	1
	Controls	2013	74	45	39	20	14
ANENCEPHALUS							
Index 1	Cases	116	3	1	2	2	0
	Controls	1877	67	30	32	15	22
Index 2	Cases	116	2	1	2	2	0
	Controls	1877	71	43	38	19	14

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
SPINA BIFIDA							
Index 1	Cases	156	5	4	6	3	2
	Controls	1965	70	29	31	17	22
Index 2	Cases	156	3	2	6	7	1
	Controls	1965	72	44	37	19	14
HYDROCEPHALUS							
Index 1	Cases	52	5	1	2	1	2
	Controls	784	63	27	26	14	21
Index 2	Cases	52	4	1	2	2	2
	Controls	784	63	32	34	20	13
ENCEPHALOCELE							
Index 1	Cases	27	2	0	0	0	2
	Controls	1139	50	22	19	8	15
Index 2	Cases	27	2	0	0	1	1
	Controls	1139	51	29	24	10	12
MICROCEPHALUS							
Index 1	Cases	51	3	1	2	0	1
	Controls	1573	53	25	23	12	16
Index 2	Cases	51	3	2	3	0	0
	Controls	1573	58	31	33	14	8
NEUROFIBROMATOSIS							
Index 1	Cases	6	0	0	0	0	0
	Controls	353	9	7	4	1	2
Index 2	Cases	6	0	0	0	0	0
	Controls	353	11	8	4	5	2
ANOPHTHALMOS							
Index 1	Cases	3	0	0	0	0	0
	Controls	58	0	0	2	3	0
Index 2	Cases	3	0	0	0	0	0
	Controls	58	2	3	2	0	0
MICROPHTHALMOS							
Index 1	Cases	30	2	0	0	0	0
	Controls	1062	42	22	17	6	13
Index 2	Cases	30	0	1	1	0	0
	Controls	1062	43	26	22	8	5
BUPHTHALMOS							
Index 1	Cases	6	0	0	0	0	0
	Controls	155	4	3	4	1	1
Index 2	Cases	6	0	0	0	0	0
	Controls	155	5	5	3	2	1

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
CONGENITAL CATARACT							
Index 1	Cases	29	2	0	0	0	1
	Controls	1212	40	20	18	9	13
Index 2	Cases	29	0	2	0	0	0
	Controls	1091	35	16	24	9	8
COLOBOMA							
Index 1	Cases	11	1	1	0	0	1
	Controls	845	24	17	16	7	1
Index 2	Cases	11	0	0	2	0	1
	Controls	845	29	18	16	9	6
ANIRIDIA							
Index 1	Cases	3	0	0	0	0	0
	Controls	270	5	6	4	3	4
Index 2	Cases	3	0	0	0	0	0
	Controls	270	9	7	4	2	1
ANOM EAR WITH IMPAIRED HEARING							
Index 1	Cases	24	1	0	0	0	0
	Controls	874	33	9	18	6	11
Index 2	Cases	24	1	0	0	0	0
	Controls	874	36	20	16	12	7
CONUS ARTERIOSUS DEFECTS							
Index 1	Cases	116	1	3	1	2	0
	Controls	1835	63	29	31	15	19
Index 2	Cases	116	2	4	2	2	0
	Controls	1835	69	40	33	19	2
COMMON TRUNCUS							
Index 1	Cases	14	0	2	0	0	0
	Controls	808	27	17	13	6	3
Index 2	Cases	14	1	2	0	0	0
	Controls	808	32	18	14	4	3
TRANSPOSITION GREAT VESSELS							
Index 1	Cases	68	0	1	1	0	0
	Controls	1523	55	28	24	12	17
Index 2	Cases	68	0	2	2	2	0
	Controls	1560	61	30	30	15	12
TETRALOGY OF FALLOT							
Index 1	Cases	45	1	0	0	2	0
	Controls	1447	49	25	26	9	15
Index 2	Cases	45	1	0	0	0	0
	Controls	1447	51	31	29	14	5

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
VENTRICULAR SEPTAL DEFECT (VSD)							
Index 1	Cases	282	12	7	3	2	5
	Controls	2123	72	29	32	16	23
Index 2	Cases	282	12	7	5	4	2
	Controls	2121	75	43	39	22	14
SELECTED VSD							
Index 1	Cases	227	10	3	3	1	4
	Controls	2104	71	29	32	16	23
Index 2	Cases	227	8	5	4	1	1
	Controls	2102	74	43	39	22	13
ATRIAL SEPTAL DEFECT							
Index 1	Cases	132	3	2	2	0	3
	Controls	1696	57	27	23	11	18
Index 2	Cases	132	2	3	6	1	0
	Controls	1716	61	34	30	15	11
OSTIUM ATRIOVENTRIC COMMUNE							
Index 1	Cases	31	0	0	2	0	0
	Controls	1127	46	24	13	11	14
Index 2	Cases	31	0	0	2	0	0
	Controls	1127	47	20	24	8	7
ANOMALIES OF HEART VALVES							
Index 1	Cases	120	4	2	2	2	3
	Controls	1870	61	26	33	15	20
Index 2	Cases	120	2	4	6	1	0
	Controls	1868	66	40	35	19	2
FIBROELASTOSIS CORDIS							
Index 1	Cases	8	0	0	0	0	0
	Controls	603	23	13	15	5	8
Index 2	Cases	8	0	0	0	0	0
	Controls	603	22	12	17	4	6
PATENT DUCTUS ARTERIOSUS (PDA)							
Index 1	Cases	271	9	1	3	3	1
	Controls	1977	68	29	29	15	22
Index 2	Cases	271	6	3	6	2	0
	Controls	1977	74	36	38	20	4
SELECTED PDA							
Index 1	Cases	245	7	1	3	2	1
	Controls	1972	68	29	29	15	22
Index 2	Cases	245	5	3	5	2	0
	Controls	1972	74	36	38	20	4

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
COARCTATION OF AORTA							
Index 1	Cases	52	2	1	0	2	0
	Controls	1436	44	26	24	10	16
Index 2	Cases	52	2	1	3	0	0
	Controls	1379	49	29	24	12	10
OTHER ANOMALIES OF AORTA							
Index 1	Cases	50	1	0	1	0	1
	Controls	1299	53	26	24	10	17
Index 2	Cases	50	0	1	3	0	0
	Controls	1299	53	32	30	16	10
STEN ATRES PULMONARY ART							
Index 1	Cases	57	2	1	0	0	1
	Controls	1615	55	26	28	14	21
Index 2	Cases	57	1	2	2	0	0
	Controls	1615	61	31	36	18	12
ANOM GREAT VEINS							
Index 1	Cases	30	1	0	1	0	0
	Controls	1267	46	25	18	7	14
Index 2	Cases	30	0	3	1	0	0
	Controls	1339	52	25	29	11	10
CHOANAL ATRESIA							
Index 1	Cases	20	0	1	0	0	0
	Controls	897	39	17	11	10	14
Index 2	Cases	20	1	0	2	0	0
	Controls	932	46	22	23	9	7
CONGENITAL CYSTIC LUNG							
Index 1	Cases	3	0	0	0	0	0
	Controls	216	9	5	4	1	3
Index 2	Cases	3	0	0	0	0	0
	Controls	216	6	4	8	0	2
AGENESIS OF LUNG							
Index 1	Cases	6	1	0	0	0	0
	Controls	377	13	7	6	3	6
Index 2	Cases	6	1	0	0	0	0
	Controls	377	14	4	9	2	4
CLEFT PALATE							
Index 1	Cases	98	2	0	1	0	0
	Controls	1875	62	30	28	15	22
Index 2	Cases	98	1	0	2	1	1
	Controls	1875	70	38	36	20	13

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
CLEFT LIP W/WOUT CLEFT PALATE							
Index 1	Cases	91	7	5	6	2	1
	Controls	801	61	29	28	16	19
Index 2	Cases	91	8	7	1	4	5
	Controls	801	66	40	32	17	13
PYLORIC STENOSIS							
Index 1	Cases	271	6	4	5	2	4
	Controls	1954	66	28	28	15	22
Index 2	Cases	271	10	3	5	6	1
	Controls	1954	70	39	34	20	14
TRACHED-ESOPH FIST ATRES							
Index 1	Cases	38	0	3	0	1	1
	Controls	1422	48	22	25	15	19
Index 2	Cases	38	1	2	1	1	2
	Controls	1422	52	26	32	16	10
ATRES STEN SMALL INTEST							
Index 1	Cases	57	0	1	0	0	0
	Controls	1606	53	26	23	12	17
Index 2	Cases	57	1	2	0	0	0
	Controls	1606	54	25	32	14	9
ATRES STEN RECT ANUS							
Index 1	Cases	68	1	2	0	2	0
	Controls	1639	56	28	25	16	19
Index 2	Cases	68	3	0	2	1	0
	Controls	1639	60	38	30	16	10
HIRSCHSPRUNGS DISEASE							
Index 1	Cases	33	0	0	0	1	1
	Controls	1407	43	23	20	11	18
Index 2	Cases	33	0	0	0	0	1
	Controls	1407	49	27	25	14	9
ANOM INTEST FIXATION							
Index 1	Cases	33	0	0	1	0	2
	Controls	1329	51	22	20	9	16
Index 2	Cases	33	0	0	1	3	0
	Controls	1383	57	30	25	10	9
ANOM GALL-BLAD, BILE, LIVER							
Index 1	Cases	15	0	1	0	3	0
	Controls	360	43	16	17	7	11
Index 2	Cases	15	1	2	0	0	0
	Controls	360	41	22	24	9	7

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
ANOM PANCREAS							
Index 1	Cases	8	0	0	0	0	0
	Controls	601	23	11	9	4	8
Index 2	Cases	8	0	0	0	0	0
	Controls	601	23	11	16	3	4
INDETERMINATE SEX							
Index 1	Cases	5	0	0	0	0	0
	Controls	465	18	16	7	3	7
Index 2	Cases	5	0	0	0	0	0
	Controls	465	22	13	11	3	4
HYPOSPADIAS							
Index 1	Cases	440	16	3	4	4	9
	Controls	2122	70	31	31	17	23
Index 2	Cases	440	14	3	6	3	6
	Controls	2122	76	42	40	21	14
EPIPADIAS							
Index 1	Cases	11	0	0	0	0	0
	Controls	511	20	6	11	3	8
Index 2	Cases	11	0	0	0	0	0
	Controls	511	19	10	14	6	4
ANOM OVARY, FALLOP, UTERUS							
Index 1	Cases	13	1	0	1	0	0
	Controls	855	34	19	20	8	13
Index 2	Cases	13	0	2	0	0	0
	Controls	855	39	22	22	11	10
ANOM VAGINA, EXT FEM GENIT							
Index 1	Cases	29	2	0	1	1	0
	Controls	1425	51	23	23	12	20
Index 2	Cases	29	2	2	0	0	0
	Controls	1425	57	31	28	16	11
PSEUDOHERMAPHRODITISM							
Index 1	Cases	20	1	1	0	0	0
	Controls	961	37	20	10	7	13
Index 2	Cases	20	0	1	1	0	0
	Controls	961	41	18	20	9	5
RENAL AGENESIS							
Index 1	Cases	45	1	0	1	0	0
	Controls	1328	43	18	22	9	17
Index 2	Cases	45	1	0	0	0	0
	Controls	1328	44	25	26	13	8

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
CYSTIC KIDNEY DISEASE							
Index 1	Cases	37	1	0	0	0	0
	Controls	1249	42	22	20	6	14
Index 2	Cases	37	0	1	0	0	0
	Controls	1249	45	28	23	14	6
OBSTRUCT DEF URIN TRACT							
Index 1	Cases	65	2	2	2	0	1
	Controls	1489	52	26	25	14	17
Index 2	Cases	65	2	2	1	1	0
	Controls	1489	54	37	31	17	10
EXSTROPHY URIN BLADDER							
Index 1	Cases	9	1	0	0	0	0
	Controls	491	14	5	12	3	7
Index 2	Cases	9	0	0	0	1	0
	Controls	491	16	7	12	6	3
ATRES STEN URETHRA, BLAD							
Index 1	Cases	39	1	1	0	1	0
	Controls	1418	44	23	26	11	15
Index 2	Cases	39	2	0	1	1	0
	Controls	1539	56	34	31	15	9
CLUBFOOT							
Index 1	Cases	641	27	11	3	7	6
	Controls	2166	72	30	31	17	23
Index 2	Cases	641	20	11	15	6	4
	Controls	2168	75	44	39	23	14
SELECTED CLUBFOOT							
Index 1	Cases	417	16	7	3	5	2
	Controls	2151	71	30	31	17	23
Index 2	Cases	417	12	6	9	4	3
	Controls	2153	75	44	39	23	14
REDUCTION DEFORMITY							
Index 1	Cases	113	4	2	2	3	1
	Controls	1904	66	29	30	15	21
Index 2	Cases	113	6	4	2	2	0
	Controls	1906	68	39	37	20	12
GEN FLEXION CONTRACTURE							
Index 1	Cases	14	1	0	1	0	0
	Controls	887	36	12	16	6	12
Index 2	Cases	14	1	0	1	1	0
	Controls	904	37	18	19	9	8

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
for Tests of Hypotheses — Basic Analyses

		Index Scores ^a					
		0	1	2	3	4	5
CHONDRODYSTROPHY							
Index 1	Cases	9	0	0	0	0	0
	Controls	607	21	15	10	6	4
Index 2	Cases	9	0	0	0	0	0
	Controls	607	21	17	12	4	4
OSTEOGENESIS IMPERFECTA							
Index 1	Cases	7	0	0	0	0	0
	Controls	492	15	9	11	3	5
Index 2	Cases	7	0	0	0	0	0
	Controls	492	11	8	12	5	3
HEREDITARY OEDEMA OF LEGS							
Index 1	Cases	1	0	0	0	0	0
	Controls	92	8	1	0	1	2
Index 2	Cases	1	0	0	0	0	0
	Controls	92	6	1	4	1	0
SPEC ANOM HAIR							
Index 1	Cases	7	0	0	0	1	0
	Controls	320	3	3	5	3	1
Index 2	Cases	7	0	0	0	0	0
	Controls	263	2	3	4	4	0
SPEC ANOM NAILS							
Index 1	Cases	7	0	1	1	0	0
	Controls	430	13	10	8	4	3
Index 2	Cases	7	0	0	2	0	0
	Controls	430	16	13	7	4	2
ANOMALIES OF SPLEEN							
Index 1	Cases	27	0	0	2	0	0
	Controls	1180	46	23	16	7	15
Index 2	Cases	27	1	0	1	0	0
	Controls	1155	46	22	25	9	7
ANOM ADRENAL GLAND							
Index 1	Cases	6	0	0	0	0	0
	Controls	477	17	11	6	2	4
Index 2	Cases	6	0	0	0	0	0
	Controls	477	15	14	8	3	3
ANOM THYROID GLAND							
Index 1	Cases	18	1	0	1	0	0
	Controls	823	36	14	11	8	12
Index 2	Cases	18	0	1	0	1	0
	Controls	823	43	21	15	9	6

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
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		Index Scores ^a					
		0	1	2	3	4	5
ANOM OTHER ENDOCRINE							
Index 1	Cases	7	0	0	0	0	0
	Controls	496	24	11	8	5	10
Index 2	Cases	7	1	0	0	0	0
	Controls	617	31	18	16	6	6
SITUS INVERSUS							
Index 1	Cases	8	0	0	1	0	1
	Controls	448	14	10	4	4	3
Index 2	Cases	8	0	0	2	0	0
	Controls	448	16	10	4	5	2
CONJOINED TWINS							
Index 1	Cases	6	0	0	0	0	0
	Controls	310	11	4	8	4	5
Index 2	Cases	6	0	0	0	0	0
	Controls	310	12	10	9	2	3
OTH FORM MONSTER							
Index 1	Cases	3	0	0	0	0	0
	Controls	324	16	5	9	2	7
Index 2	Cases	3	0	0	0	0	0
	Controls	324	12	4	13	4	3
DOWN'S DISEASE							
Index 1	Cases	169	7	2	3	0	2
	Controls	2042	68	29	32	17	22
Index 2	Cases	169	8	3	2	2	0
	Controls	2042	69	41	37	21	14
OTH SYND AUTOSOMAL ABNORM							
Index 1	Cases	38	1	0	0	0	0
	Controls	1161	39	18	22	8	15
Index 2	Cases	38	1	0	0	0	0
	Controls	1161	41	21	27	9	6
TUBEROUS SCLEROSIS							
Index 1	Cases	1	0	0	0	0	0
	Controls	5	0	1	0	0	0
Index 2	Cases	1	0	0	0	0	0
	Controls	5	1	0	0	0	0
OTH SPEC SYNDROME							
Index 1	Cases	15	3	0	1	1	0
	Controls	280	29	16	9	6	8
Index 2	Cases	15	1	1	2	1	0
	Controls	280	35	19	10	8	5
POTTER SYNDROME							
Index 1	Cases	30	0	0	1	0	0
	Controls	1064	38	17	18	6	16
Index 2	Cases	30	0	0	0	0	0
	Controls	1064	38	18	24	10	7

Appendix C — Continued
Distributions of Agent Orange Exposure Opportunity Index Scores
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		Index Scores ^a					
		0	1	2	3	4	5
MULT CONGEN ANOM UNSPEC							
Index 1	Cases	3	0	0	0	0	0
	Controls	59	5	1	2	1	1
Index 2	Cases	3	0	0	0	0	0
	Controls	59	8	3	2	2	0
DIAPHRAGMATIC HERNIA							
Index 1	Cases	56	2	0	0	1	0
	Controls	1601	54	26	27	11	18
Index 2	Cases	56	2	0	0	0	0
	Controls	1601	58	35	27	18	11
OMPHALOCELE							
Index 1	Cases	78	3	0	5	1	1
	Controls	1943	67	27	32	17	21
Index 2	Cases	78	3	0	2	5	0
	Controls	1943	72	41	38	20	14
OTHER NEOPLASM							
Index 1	Cases	70	3	0	1	1	2
	Controls	1602	54	28	17	13	16
Index 2	Cases	70	4	4	3	2	0
	Controls	1643	59	28	30	15	11
CYTOMEGALOVIRUS							
Index 1	Cases	6	0	0	0	0	0
	Control	268	14	4	2	1	3
Index 2	Cases	6	0	0	0	0	0
	Controls	268	13	8	5	2	0
HERPES SIMPLEX							
Index 1	Cases	5	1	0	0	0	0
	Controls	350	11	5	5	2	3
Index 2	Cases	5	0	1	0	0	0
	Controls	350	8	7	7	3	2
SYPHILIS							
Index 1	Cases	4	0	0	0	0	0
	Controls	69	1	0	1	1	0
Index 2	Cases	4	0	0	0	0	0
	Controls	69	2	1	0	0	1

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