



Reproductive Effects of C8

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Reproductive Hormones Male C8 Workers

■ Increased PFOA Levels

■ Lower

- Testosterone
- Prolactin

■ Higher

- Estrogen
- Prolactin if high alcohol intake

Health Study in Residents Near a Large C8 Source

■ Methods

- 301 females and 296 males with documented PFOA–Exposure ≥ 0.05 ug/L in drinking water
- standardized questionnaire
- SEER prevalence data were used for comparison

Demographics for Residential Study Participants

	No.	%
Age Category		
20 – 34	105	18.17
35 – 44	104	17.99
45 – 54	135	23.36
55 – 64	154	26.64
65 – 80	80	13.84
Gender		
Male	284	49.13
Female	294	50.87
Race/Ethnicity		
White	558	97.38
African American	6	1.05
Others	9	1.57
Education Level		
Less than 9 th grade	17	2.98
9 – 11 th grade	59	10.33
12 th /Vocational/Some College	430	75.31
<u>College Graduate</u>	65	11.38

Demographics for Residential Study Participants

	No.	%
Body Mass Index		
Underweight (<23)	106	18.53
Average (23 – 28)	190	33.22
Overweight (>28)	276	48.25
Smoking Status		
Never smoked	252	60.58
Smoked less than 15 years	72	17.31
Smoked more than 15 years	92	22.12
Work History		
Plant 1	54	9.42
Plant 2	19	3.32
No plant work	500	87.26

Reproductive Cancers in Residents Near a C8 Source

CANCER TYPE	Number of Cancers	Observed Rates ^a (per 100,000)	Expected Rates ^b (per 100,000)	PR	CI ^c
Uterine/Cervical	9	3,061	96	33.12	17.03 – 64.41*
Breast	5	1,701	1,579	1.12	0.46 – 2.71
Prostate	9	3,169	1633	1.96	0.98 – 3.92

Uterine/Cervical Cancer in Residents Near a C8 Source

Age Category	# of Cancers	N	PR	P-value
20-29	0	34	0	-
30-39	2	38	56.40	0.0002
40-49	2	64	25.02	0.0008
50-59	3	84	34.18	0.00001
60+	2	74	31.83	0.0005
Total	9	294		

Age at Menopause in Residents Near a C8 Source

Age Category	By 38	By 43	By 49	By 54
U.S. Population*	10%	20%	50%	90%
PFOA Exposed	31%	44%	66%	93%

*http://www.cdc.gov/nchs/data/series/sr_11/sr11_019.pdf

Prostate Cancer in Workers at the C8 Source

Cancer	OR	95% CI	P-Value ^b
Prostate			0.0002
<21 years employed ^a	1.0	-	-
21 – 29	2.68	0.82 – 8.79	0.10
30 – 50	8.71	2.63 – 28.83	0.0004

Conclusions

- These data indicate a strong effect of C8 on uterine/cervical cancer in women
- Together with previous research, these findings strongly implicate a causal relationship between C8 and prostate cancer in men