Environ Health Perspect

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Supplemental Material

The Effect of Individual or Study-Wide Report-Back on Knowledge, Concern, and Exposure-Reducing Behaviors Related to Endocrine-Disrupting Chemicals

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Survey Questions

Questions shown are the portions of the survey instrument reported upon in this article. Questions were asked to the structured interview group during pre- and post-interviews. Responses levels not shown follow the same levels as those last specified.

A. Environmental Health Behaviors

1. During the past month, did you or someone else clean any floors in your home with a damp or wet mop, damp cloth, or damp sponge?

   ___No ___Yes

   a. *[If yes]* How often during the past month did you or someone else clean any floors in your home with a damp or wet mop, damp cloth, or damp sponge? Would you say…

      (1) Once or twice this month
      (2) 3-4 times this month
      (3) A few times a week
      (4) Almost every day

2. During the past month, did you or someone else clean any floors or rugs in your home using a high efficiency vacuum cleaner (that's a vacuum cleaner with a HEPA filter)?

   a. *[If yes]* How often during the past month did you or someone else clean any floors or rugs in your home using a high efficiency vacuum cleaner? Would you say…

3. During the past month, did you or someone else clean any window sills or other surfaces in your home with a damp cloth, damp sponge or damp paper towel?

   a. *[If yes]* How often during the past month did you or someone else clean any window sills or other surfaces in your home with a damp cloth, damp sponge or damp paper towel? Would you say…

4. During the past month, did you or someone else use an air freshener in your home?

   ___No ___Yes

5. During the past month, did you keep a door mat or rug for wiping shoes inside the door to your home?

6. During the past month, did you eat any fish or seafood purchased at the grocery store or caught in California waters?

   a. *[If yes]* Did you use a fish-buying guide or consider other information to avoid fish with high pollution levels?

7. During the past month, did you add or remove any items from your home because you were concerned about the chemicals that were in them?

    a. *[If yes]* What was that? *[Record answer verbatim]*

8. During the past month, how often did you eat food prepared using nonstick cookware? Would you say…

    (1) Every day
    (2) 2 or more times a week
    (3) Several times this month
    (4) Never or almost never

9. During the past month, how often did you eat popcorn made in microwave popcorn bags? Would you say…

10. During the past month, how often did you eat take-out french fries? Would you say…

11. During the past month, how often did you eat pizza that that came in a pizza box, either frozen from a grocery store or from a take-out restaurant? Would you say…

12. During the past month, how often did you eat take-out food – other than pizza or french fries – from coated cardboard containers? Would you say…

13. During the past month, how often did you use Oral-B Glide dental floss? Would you say…

14. During the past week, how often did you wash your hands with water before eating? Soap is OK, hand sanitizer does not count. Would you say…

    (1) Never
    (2) Hardly ever
    (3) Sometimes
    (4) Most of the time
    (5) Always

15. During the past week, how often did you take off your shoes when you came in the door to your home?

B. Environmental Health Attitudes

How concerned are you about health effects from…

[Question order randomized]

1. Pesticides that have been banned, like DDT? Would you say you are…

    (1) Not at all concerned
    (2) Slightly concerned

(3) Somewhat concerned
(4) Concerned
(5) Very concerned

2. Flame retardants in furniture?

3. Flame retardants in electronic equipment, like computers, TVs, printers, and phones?

4. Nonstick cookware, such as Teflon pans?

5. Chemicals in cosmetics?

6. Older industrial chemicals, such as PCBs?

7. Vinyl products like shower curtains or flooring?

8. Grease-resistant food packaging?

9. Chemicals that collect in your house dust?

10. Stain resistant clothing and furnishings, such as rugs?

11. Pesticides that are used to kill bugs or weeds in and around homes?

C. Environmental Health Knowledge

For each statement, please tell me whether you think it is true or false.

[Question order randomized]

1. People can get chemicals in their blood from the dust in their home.

   ___True ___False

2. Chemicals have to be tested for safety before they can be used in products in the US.

3. Some chemicals from pollution, food, or everyday products can remain in a person's body for years.

4. Babies in the womb are not exposed to pollution or harmful chemicals before they are born.

5. City people usually do not have any pesticides in their blood.

6. Even though fish is a healthy food, some fish contain high levels of chemicals, such as PCBs, that are harmful for health.

7. Leafy vegetables are more likely than meat, cheese, or whole milk to contain residues of long-lasting chemical contaminants.

8. Some chemicals in people' blood can come from spending time in an older building.

9. The US Centers for Disease Control has found many chemical contaminants in blood samples from everyone they tested.

10. A doctor will be able to tell me how the chemical results in MyCHDSReport will affect my health in the future.

11. Some of the chemicals tested in CHDS can affect fertility (the ability of a man or woman to have children).

12. Californians have the same levels of flame retardants in their blood as other Americans.

13. Some of the chemicals used in beauty products in the US are banned in Europe.

14. Most people do not have any industrial chemicals in their blood.

15. Exposure in early life to some of the chemicals tested in CHDS can affect a baby's brain development and IQ.

16. The pesticide DDT was banned years ago, so people are not exposed anymore.

17. Scientists have some evidence that some of the chemicals studied by the CHDS can cause cancer.

18. Washing your hands removes germs but has no effect on a person's exposures to harmful chemicals.

19. Scientists are not sure about all the health implications of the chemicals tested by the CHDS.

20. Whether or not a chemical exposure affects your health depends partly on how much you are exposed to.

Table S1. Odds ratios from logistic regressions evaluating the interaction between race and education and correctly answering environmental health knowledge questions at baseline (n = 135).

Category	Question	Answer	N (%) correct	Term[1,2]	Odds ratio (95% CI)	p-value
Exposure	Some chemicals in people's blood can come from spending time in an older building.	TRUE	132 (97.8)	--	--	--
Exposure	Even though fish is a healthy food, some fish contain high levels of chemicals, such as PCBs, that are harmful for health.	TRUE	129 (95.6)	Intercept	30 (6.4, 530)	0.001
				Education (ref: no bachelor's degree)	1.4 (0.053, 35)	0.83
				Race (ref: non-Black race)	0.39 (0.019, 3.2)	0.42
				Education*Race	1.4 (0.032, 86)	0.84
Exposure	City people usually do not have any pesticides in their blood.	FALSE	127 (94.1)	Intercept	14 (4.4, 90)	<0.001
				Education (ref: no bachelor's degree)	1.4 (0.16, 12)	0.76
				Race (ref: non-Black race)	0.8 (0.1, 5.2)	0.82
				Education*Race	1.4 (0.071, 49)	0.82
Exposure	Babies in the womb are not exposed to pollution or harmful chemicals before they are born.	FALSE	124 (91.9)	Intercept	14 (4.4, 90)	<0.001
				Education (ref: no bachelor's degree)	1.4 (0.16, 12)	0.76
				Race (ref: non-Black race)	0.8 (0.1, 5.2)	0.82
				Education*Race	0.31 (0.021, 4.4)	0.37

Exposure	People can get chemicals in their blood from the dust in their home.	TRUE	115 (85.2)	Intercept	3.4 (1.6, 8.6)	0.004
				Education (ref: no bachelor's degree)	1.7 (0.52, 6.1)	0.36
				Race (ref: non-Black race)	3.4 (0.85, 17)	0.098
				Education*Race	0.24 (0.031, 1.8)	0.17
Exposure	Most people do not have any industrial chemicals in their blood.	FALSE	114 (84.4)	Intercept	9.3 (3.3, 39)	<0.001
				Education (ref: no bachelor's degree)	0.79 (0.15, 3.5)	0.76
				Race (ref: non-Black race)	0.3 (0.062, 1.1)	0.09
				Education*Race	3.2 (0.43, 29)	0.28
Exposure	The pesticide DDT was banned years ago, so people are not exposed anymore.	FALSE	109 (80.7)	Intercept	4.2 (1.8, 11)	0.002
				Education (ref: no bachelor's degree)	1.8 (0.48, 6.8)	0.38
				Race (ref: non-Black race)	0.77 (0.23, 2.4)	0.66
				Education*Race	0.52 (0.089, 3.1)	0.47
Exposure	The US Centers for Disease Control has found many chemical contaminants in blood samples from everyone they tested.	TRUE	100 (74.1)	Intercept	3.4 (1.6, 8.6)	0.004
				Education (ref: no bachelor's degree)	1.2 (0.39, 3.9)	0.71
				Race (ref: non-Black race)	0.56 (0.18, 1.6)	0.29
				Education*Race	1 (0.21, 5.1)	0.98

Exposure	Californians have the same levels of flame retardants in their blood as other Americans.	FALSE	82 (60.7)	Intercept	0.94 (0.46, 1.9)	0.86
				Education (ref: no bachelor's degree)	1.1 (0.42, 2.7)	0.89
				Race (ref: non-Black race)	2.1 (0.78, 5.5)	0.15
				Education*Race	3.4 (0.69, 21)	0.15
Exposure	Washing your hands removes germs but has no effect on a person's exposures to harmful chemicals.	FALSE	62 (45.9)	Intercept	0.82 (0.4, 1.7)	0.59
				Education (ref: no bachelor's degree)	1.5 (0.58, 3.8)	0.42
				Race (ref: non-Black race)	0.88 (0.34, 2.3)	0.80
				Education*Race	0.56 (0.14, 2.3)	0.42
Exposure	Leafy vegetables are more likely than meat, cheese, or whole milk to contain residues of long-lasting chemical contaminants.	FALSE	62 (45.9)	Intercept	0.82 (0.4, 1.7)	0.59
				Education (ref: no bachelor's degree)	1.5 (0.58, 3.8)	0.42
				Race (ref: non-Black race)	0.71 (0.27, 1.9)	0.48
				Education*Race	0.99 (0.24, 4)	0.98
Health	Scientists have some evidence that some of the chemicals studied by the CHDS can cause cancer.	TRUE	129 (95.6)	--	--	--
Health	Exposure in early life to some of the chemicals tested in CHDS can affect a baby's brain development and IQ.	TRUE	127 (94.1)	Intercept	30 (6.4, 530)	0.001

				Education (ref: no bachelor's degree)	0.67 (0.03, 7.3)	0.74
				Race (ref: non-Black race)	0.28 (0.014, 2)	0.27
				Education*Race	4.1 (0.18, 200)	0.41
Health	Some chemicals from pollution, food, or everyday products can remain in a person's body for years.	TRUE	127 (94.1)	--	--	--
Health	Some of the chemicals tested in CHDS can affect fertility (the ability of a man or woman to have children).	TRUE	125 (92.6)	--	--	--
Health	Whether or not a chemical exposure affects your health depends partly on how much you are exposed to.	TRUE	124 (91.9)	Intercept	9.3 (3.3, 39)	<0.001
				Education (ref: no bachelor's degree)	4.4 (0.53, 91)	0.21
				Race (ref: non-Black race)	0.91 (0.17, 4.5)	0.91
				Education*Race	0.19 (0.0067, 2.8)	0.24
Health	Scientists are not sure about all the health implications of the chemicals tested by the CHDS.	TRUE	119 (88.1)	Intercept	6.8 (2.6, 23)	<0.001
				Education (ref: no bachelor's degree)	1.9 (0.39, 10)	0.42
				Race (ref: non-Black race)	0.79 (0.19, 3.1)	0.74
				Education*Race	0.68 (0.076, 6.3)	0.73
Health	A doctor will be able to tell me how the chemical results in MyCHDSReport will affect my health in the future.	FALSE	41 (30.4)	Intercept	0.35 (0.15, 0.75)	0.01

				Education (ref: no bachelor's degree)	2 (0.72, 5.6)	0.20
				Race (ref: non-Black race)	0.54 (0.16, 1.8)	0.31
				Education*Race	1.9 (0.41, 9.5)	0.40
Regulation	Some of the chemicals used in beauty products in the US are banned in Europe.	TRUE	102 (75.6)	Intercept	2.9 (1.3, 6.9)	0.01
				Education (ref: no bachelor's degree)	0.7 (0.24, 1.9)	0.49
				Race (ref: non-Black race)	1.1 (0.37, 3.4)	0.84
				Education*Race	4.9 (0.8, 43)	0.11
Regulation	Chemicals have to be tested for safety before they can be used in products in the US.	FALSE	32 (23.7)	Intercept	0.19 (0.065, 0.46)	0.001
				Education (ref: no bachelor's degree)	1.8 (0.59, 6.5)	0.31
				Race (ref: non-Black race)	0.79 (0.2, 3.1)	0.73
				Education*Race	3 (0.54, 17)	0.20

--, odds ratios could not be computed because of quasi-separation in the data

[1] Highest level of education was categorized into “no bachelor’s degree” (high school or less, associate degree, technical or vocational training) or “bachelor’s degree” (bachelor’s, master’s, doctoral, or professional degree).

[2] Self-reported race/ethnicity was categorized as Black if the participant indicated African American/Black as one of her races in answer to a question allowing multiple response categories for race and ethnicity. Non-Black participants indicated that their race was non-Hispanic White, Hispanic, Asian, or mixed race and not Black.

Table S2. Multiple regression model evaluating the interaction between race and education and baseline environmental health knowledge index score (n = 135).

Term	Coefficient (95% CI)	p-value
Intercept	15.3 (14.4, 16.1)	<0.001
Education[1] (ref: no bachelor's degree)	0.7 (-0.5, 1.8)	0.24
Race[2] (ref: non-Black race)	-0.7 (-1.9, 0.4)	0.23
Education*Race	0.9 (-0.8, 2.6)	0.29

[1] Highest level of education was categorized into “no bachelor’s degree” (high school or less, associate degree, technical or vocational training) or “bachelor’s degree” (bachelor’s, master’s, doctoral, or professional degree).

[2] Self-reported race/ethnicity was categorized as Black if the participant indicated African American/Black as one of her races in answer to a question allowing multiple response categories for race and ethnicity. Non-Black participants indicated that their race was non-Hispanic White, Hispanic, Asian, or mixed race and not Black.

Table S3. Odds ratios from logistic regressions evaluating the interaction between education and race and concern about health effects of certain chemicals at baseline (n = 135).

Chemical group	N (%) concerned[1]	Term[2,3]	Odds ratio (95% CI)	p-value
Banned pesticides (like DDT)	108 (80)	Intercept	5.2 (2.2, 15)	0.001
		Education (ref: no bachelor's degree)	0.48 (0.14, 1.5)	0.22
		Race (ref: non-Black race)	2.2 (0.5, 12)	0.30
		Education*Race	0.43 (0.061, 2.8)	0.38
Pesticides used to kill bugs or weeds in and around homes	91 (67.4)	Intercept	2.9 (1.3, 6.9)	0.01
		Education (ref: no bachelor's degree)	0.42 (0.15, 1.1)	0.093
		Race (ref: non-Black race)	1.1 (0.37, 3.4)	0.84
		Education*Race	1.5 (0.33, 6.9)	0.62
Older industrial chemicals (like PCBs)	81 (60)	Intercept	1.8 (0.89, 3.9)	0.11
		Education (ref: no bachelor's degree)	0.73 (0.28, 1.9)	0.52
		Race (ref: non-Black race)	0.84 (0.31, 2.2)	0.73
		Education*Race	1.2 (0.3, 5.2)	0.76
Chemicals that collect in your house dust	68 (50.4)	Intercept	1.1 (0.52, 2.2)	0.86
		Education (ref: no bachelor's degree)	0.38 (0.14, 0.98)	0.048
		Race (ref: non-Black race)	2.6 (0.97, 7.4)	0.061

		Education*Race	0.95 (0.22, 4.1)	0.95
Flame retardants in electronic equipment like computers, TVs, printers, and phones	55 (40.7)	Intercept	0.55 (0.25, 1.1)	0.11
		Education (ref: no bachelor's degree)	0.57 (0.2, 1.6)	0.28
		Race (ref: non-Black race)	2.8 (1.1, 7.6)	0.041
		Education*Race	0.97 (0.23, 4.2)	0.97
Nonstick cookware (like Teflon pans)	53 (39.3)	Intercept	0.55 (0.25, 1.1)	0.11
		Education (ref: no bachelor's degree)	0.82 (0.3, 2.2)	0.68
		Race (ref: non-Black race)	1.3 (0.5, 3.6)	0.57
		Education*Race	2 (0.48, 8.4)	0.34
Flame retardants in furniture	50 (37)	Intercept	0.24 (0.089, 0.55)	0.002
		Education (ref: no bachelor's degree)	1.5 (0.49, 4.8)	0.50
		Race (ref: non-Black race)	6.4 (2.2, 21)	0.001
		Education*Race	0.32 (0.066, 1.4)	0.14
Chemicals in cosmetics	48 (35.6)	Intercept	0.55 (0.25, 1.1)	0.11
		Education (ref: no bachelor's degree)	0.57 (0.2, 1.6)	0.28
		Race (ref: non-Black race)	1.8 (0.69, 4.9)	0.23
		Education*Race	0.88 (0.2, 3.8)	0.86
Stain-resistant clothing and furnishings (such as rugs)	38 (28.1)	Intercept	0.19 (0.065, 0.46)	0.001

		Education (ref: no bachelor's degree)	1.2 (0.36, 4.5)	0.75
		Race (ref: non-Black race)	4.2 (1.4, 15)	0.014
		Education*Race	0.5 (0.095, 2.5)	0.41
Vinyl products (like shower curtains or flooring)	37 (27.4)	Intercept	0.24 (0.089, 0.55)	0.002
		Education (ref: no bachelor's degree)	0.69 (0.2, 2.5)	0.56
		Race (ref: non-Black race)	3.7 (1.3, 12)	0.018
		Education*Race	0.66 (0.12, 3.4)	0.62
Grease-resistant food packaging	34 (25.2)	Intercept	0.11 (0.026, 0.3)	<0.001
		Education (ref: no bachelor's degree)	0.98 (0.2, 5.3)	0.98
		Race (ref: non-Black race)	8.4 (2.4, 39)	0.002
		Education*Race	0.68 (0.095, 4.5)	0.69

[1] Percent concerned includes participants who responded that they were concerned or very concerned (versus not at all concerned, slightly concerned, or somewhat concerned).

[2] Self-reported race/ethnicity was categorized as Black if the participant indicated African American/Black as one of her races in answer to a question allowing multiple response categories for race and ethnicity. Non-Black participants indicated that their race was non-Hispanic White, Hispanic, Asian, or mixed race and not Black.

[3] Highest level of education was categorized into “no bachelor’s degree” (high school or less, associate degree, technical or vocational training) or “bachelor’s degree” (bachelor’s, master’s, doctoral, or professional degree).

Table S4. Frequency of performing exposure-related environmental health behaviors, before and after receiving report-back.

			N (%)				
Category	**Behavior**	**Response level**	**Baseline**	**After report-back**	**Method**	**Statistic**	**p-value**
PFAS-related behaviors	Eat food prepared using nonstick cookware	Never or rarely	32 (23.9)	44 (32.8)	Wilcoxon-Pratt signed rank	Z = 2.35	0.019
		Several times/month	29 (21.6)	28 (20.9)			
		2+ times/week	53 (39.6)	47 (35.1)			
		Every day	20 (14.9)	15 (11.2)			
PFAS-related behaviors	Eat microwave popcorn	Never or rarely	106 (79.1)	116 (86.6)	Wilcoxon-Pratt signed rank	Z = 2.48	0.016
		Several times/month	19 (14.2)	13 (9.7)			
		2+ times/week	6 (4.5)	3 (2.2)			
		Every day	3 (2.2)	2 (1.5)			
PFAS-related behaviors	Eat pizza that came in a box	Never or rarely	84 (62.2)	95 (70.4)	Wilcoxon-Pratt signed rank	Z = 1.36	0.18
		Several times/month	47 (34.8)	35 (25.9)			
		2+ times/week	3 (2.2)	5 (3.7)			
		Every day	1 (0.7)	0 (0)			
PFAS-related behaviors	Eat takeout french fries	Never or rarely	86 (63.7)	94 (69.6)	Wilcoxon-Pratt signed rank	Z = 1.37	0.18

		Several times/month	37 (27.4)	33 (24.4)			
		2+ times/week	12 (8.9)	7 (5.2)			
		Every day	0 (0)	1 (0.7)			
PFAS-related behaviors	Eat takeout food from coated cardboard containers	Never or rarely	79 (58.5)	84 (62.2)	Wilcoxon-Pratt signed rank	Z = 0.04	1.00
		Several times/month	47 (34.8)	37 (27.4)			
		2+ times/week	8 (5.9)	14 (10.4)			
		Every day	1 (0.7)	0 (0)			
PFAS-related behaviors	Use Oral-B Glide dental floss	Never or rarely	64 (49.2)	81 (62.3)	Wilcoxon-Pratt signed rank	Z = 3.34	0.001
		Several times/month	15 (11.5)	12 (9.2)			
		2+ times/week	19 (14.6)	15 (11.5)			
		Every day	32 (24.6)	22 (16.9)			
Dust-related behaviors	Clean floors or rugs using a HEPA vacuum	Never	47 (35.6)	44 (33.3)	Wilcoxon-Pratt signed rank	Z = 0.73	0.47
		1-2 times/month	26 (19.7)	35 (26.5)			
		3-4 times/month	29 (22)	26 (19.7)			
		A few times a week	21 (15.9)	21 (15.9)			
		Almost every day	9 (6.8)	6 (4.5)			

Dust-related behaviors	Clean floors using wet or damp methods	Never	8 (5.9)	18 (13.3)	Wilcoxon-Pratt signed rank	Z = 0.81	0.42
		1-2 times/month	48 (35.6)	42 (31.1)			
		3-4 times/month	47 (34.8)	40 (29.6)			
		A few times a week	19 (14.1)	22 (16.3)			
		Almost every day	13 (9.6)	13 (9.6)			
Dust-related behaviors	Clean window sills or surfaces with a damp wipe	Never	26 (19.3)	27 (20)	Wilcoxon-Pratt signed rank	Z = 2.28	0.022
		1-2 times/month	47 (34.8)	66 (48.9)			
		3-4 times/month	27 (20)	20 (14.8)			
		A few times a week	17 (12.6)	9 (6.7)			
		Almost every day	18 (13.3)	13 (9.6)			
Dust-related behaviors	Take shoes off inside the home	Never	32 (23.7)	29 (21.5)	Wilcoxon-Pratt signed rank	Z = -0.03	0.97
		Hardly ever	21 (15.6)	22 (16.3)			
		Sometimes	12 (8.9)	12 (8.9)			
		Most of the time	20 (14.8)	32 (23.7)			
		Always	50 (37)	40 (29.6)			
Dust-related behaviors	Wash hands with water before eating	Never	1 (0.7)	1 (0.7)	Wilcoxon-Pratt signed rank	Z = -1.67	0.11
		Hardly ever	3 (2.2)	3 (2.2)			

		Sometimes	6 (4.4)	2 (1.5)		
		Most of the time	38 (28.1)	36 (26.7)		
		Always	87 (64.4)	93 (68.9)		
Other behaviors	Avoid fish with high pollution levels	No	55 (82.1)	50 (74.6)	McNemar's Chi-squared test	$X^2 = 1.92$	0.17
		Yes	12 (17.9)	17 (25.4)		
Other behaviors	Change an item due to chemical concerns	No	121 (89.6)	101 (74.8)	McNemar's Chi-squared test	$X^2 = 10.5$	0.001
		Yes	14 (10.4)	34 (25.2)		
Other behaviors	Do not use air freshener	No	96 (71.6)	87 (64.9)	McNemar's Chi-squared test	$X^2 = 3$	0.083
		Yes	38 (28.4)	47 (35.1)		
Other behaviors	Have a door mat or rug for wiping shoes	No	48 (35.6)	43 (31.9)	McNemar's Chi-squared test	$X^2 = 0.81$	0.37
		Yes	87 (64.4)	92 (68.1)		

Note: These data are presented graphically in the main text (Figure 1). Frequency of behavior was assessed for the previous month, except for taking shoes off and hand washing, which were assessed for the previous week.

Figure S1. Selected screenshots from the interactive MyCHDSReport website sample report (http://derbidemo.com). Screenshots show the welcome page, summary of results page, PCBs chemical group page, PCBs results graphs, overall study results page (excerpted), and overview page for exposure reduction information. © 2014 Child Health and Development Studies, Silent Spring Institute. Reprinted with permission.

This web site provides your CHDS study results. It shows:

+ The levels of chemicals found in your blood.
+ How your levels compare with other people.
+ Where these chemicals come from.
+ How they can affect health.
+ How you can reduce levels of these chemicals in your body, your home, and your community.

Start Here

Context

About 50 years ago, over 15,000 families in the Kaiser Foundation Health Plan joined the Child Health and Development Studies to help scientists discover how disease starts. Read more

Chemicals in the study

Your blood samples were tested for chemicals used in pesticides, flame retardants, old electrical equipment, and nonstick, stain-resistant, and waterproof surfaces. Read more

This website

This website includes the results for the environmental chemicals we measured in your blood sample. By clicking through the pages of the website, you can learn more about where these chemicals come from, their links to health, and how to reduce exposures in your home and community. Read more

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Results Summary

Summary of Your Results

We found many chemicals in every person we tested. Some people may want to make changes to reduce their chemical levels. We hope these results will help you make informed decisions.

Chemicals We Found

- Your blood had one of the highest levels of a PFC.
- Your sample had more PCBs than most others in the study. You may have been exposed through the fish you ate.
- Your samples had lower levels than most people for flame retardants.

All your results:
Pesticides **Flame Retardants** **PCBs** **PFCs** **Lipids**

Overall Study Results

CHDS tested blood samples for 42 chemicals. The chemicals included old pesticides, industrial pollutants, flame retardants, and perfluorinated chemicals (PFCs) used to make things non-stick, stain proof, or water-resistant.

+ We found at least 5 flame retardants, 9 PFCs, 5 banned pesticides, and 11 PCBs, which are industrial pollutants, in most CHDS women.
+ The chemicals in people have changed across the generations. CHDS mothers have higher levels than the daughters for the older chemicals.
+ CHDS African Americans have higher levels of several banned chemicals than non-African Americans. The pattern is similar for the U.S. population. Differences could be from where people live and work and what they eat.
+ What happens early in life - including before birth - is important for health. For example, higher exposures to DDT during pregnancy increased the risk of breast cancer for both mothers and daughters. This knowledge can help prevent disease in the future.

More information:
Overall Study Results

What You Can Do

+ Use pots and pans that are stainless steel, enameled, cast iron, or anodized aluminum, and avoid nonstick coatings. More things you can do with cooking
+ Keep dust levels low: this helps with many different chemicals in your home. More cleaning tips
+ Ask for furniture that doesn't contain flame retardants. Other things to do in your home

More things you can do:
Home **Food** **Clothing** **Pests** **Community**

Health Concerns

Everyone in the U.S. has chemicals in their blood that could affect health. Having chemicals in your blood doesn't mean you will get sick. CHDS is studying chemicals to learn more about how they affect health. For ideas about how to avoid exposure, click "What You Can Do."

- Chemicals that may be linked to cancer were detected in your sample.
- Chemicals that may be linked to fertility and child development were detected in your sample.
- Chemicals that may affect the health of the brain or thyroid were detected in your sample.

All health concerns:
Brain/Thyroid **Fertility and Child Development** **Cancer**

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Your Results: PCBs

Used in electronic equipment and plastics until 1979

Your sample had more PCBs than most others in the study. PCBs were banned in 1979 due to health concerns. You may have been exposed through the fish you ate. Scroll down to see all of your results.

Click here to jump to your results

Where do these chemicals come from?

PCBs are found in pre-1979 fluorescent light ballasts and caulk as well as air, dust, and soil in and around older buildings. They are also found in fish from polluted waters and soil in former industrial areas. PCBs were used in electronic equipment, floor finishes, and construction materials before they were banned in the U.S. in 1979.

Why might these chemicals be a health concern?

PCBs affect thyroid hormones, and exposure during pregnancy affects the baby's brain development and IQ. They may increase breast cancer risk in some people.

How can I reduce my exposure?

- **PCBs, although banned, can still persist in house dust in older homes.** Keep dust levels low. For example, wipe surfaces with a damp cloth and use a vacuum with a HEPA (high-efficiency particulate air) filter to prevent dust from recycling into the air.
- **Wash hands frequently.**
- **PCBs enter rivers, lakes, and bays, where they contaminate fish.** Species like bluefish and striped bass can have particularly high levels, especially if they were caught near industrial areas. Consult a fish consumer guide like the Environmental Defense Fund Seafood Selector or the Monterey Bay Aquarium Seafood Watch to learn how to make the best choices when eating fish.
- **PCBs accumulate in fat.** Trim off skin and fat from fish and meat and let fat drain off after cooking. Choose low-fat dairy.
- **Structures built before PCBs were banned may have used contaminated materials.** Avoid touching caulk or surfaces near caulk in pre-1979 buildings.
- **Be careful when renovating older buildings.** Follow EPA guidelines for managing PCB-containing materials. Wood floors with shiny finishes from the 1950s and 1960s may contain PCBs.

Common Questions

Want to call us?

Do you want help interpreting your results? Feel free to call us at

(877) 482-0264

Your Results

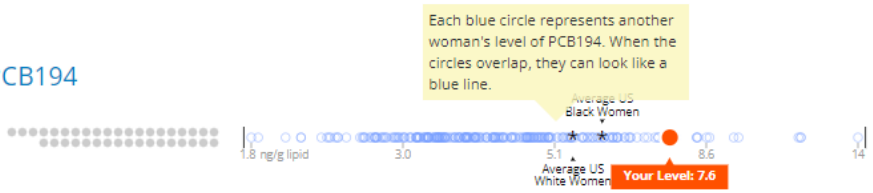
Legend

- your chemical level
- other women's chemical levels
- women for whom the chemical was not detected

ng/g lipid: nanograms of the chemical per gram of lipid (fat) in your blood. Why these units?

Tip: Mouse over your graphs to learn how to read them.

PCB194



PCB156

PCB203

PCB180

PCB170

PCB28

Overall Study Results

Contents:

People's bodies contain chemicals from everyday environments at home, work, and play. Some chemicals stay in people and their environments for many years.

CHDS tested for **42 chemicals** in your blood sample. Many of the chemicals were banned years ago, but they stay in homes, food, and the environment for a long time, so they are still common in people's blood. Some of the chemicals in the CHDS are used in consumer products, so they can get into people's bodies from using the products or from residues in house dust and food. CHDS helps scientists understand how chemicals affect health, so we can make safer choices in the future.

CHDS TESTED FOR:

7 brominated flame retardants, chemicals that were phased out around 2004. Most people in the study had at least 5 brominated flame retardants in their blood. Levels in CHDS women were higher than others in the U.S., because California's unique flammability standard led to more chemical use in the state. The flame retardants we tested for were phased out in 2004, and California updated the state rules to better protect health.

11 perfluorinated compounds, that are used to make things nonstick, stain-resistant, or water-proof. Most people had at least 9 perfluorinated compounds in their blood. Levels in CHDS women were similar to other women in the U.S.

7 pesticides (like DDT) that were banned in the 1970s-1980s. Most people had at least 5 banned pesticides in their blood.

17 PCBs, industrial chemicals that were banned in 1979. Most people had at least 11 PCBs in their blood.

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What You Can Do

Many of the chemicals we found in your blood are hard to avoid, because they were used in the past and last a long time, so they are still found in everyday environments. However, there are some steps you can take to reduce some of your exposures to chemicals in the study and to other chemicals that can affect health.

Home

Furniture, building materials, and cleaning supplies can all be sources of chemical exposure. Read more

Food

What food you buy, how you cook, and how you store food can affect your exposure to pesticides and PFCs. Read more

Clothing

Choices about the clothes you buy and how you take care of them can affect the chemicals you are exposed to. Read more

Pests

Many chemicals used to kill bugs and weeds can also affect humans. We suggest some ways to keep pests from getting into your home without pesticides and non-toxic ways to trap them when they do get in. Read more

Community

There are steps you can take with your community to reduce everyone's exposure to harmful chemicals. Read more

Common Questions

- I keep my house clean. Why do I still have chemicals in me?
- Should I keep my windows open?
- My children don't eat off the floor or chew on the shower curtain... how can these chemicals get in their body?

Want to call us?

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