#### **SUPPLEMENTAL MATERIALS**

## Impact of Panel Gene Testing for Hereditary Breast and Ovarian Cancer on Patients

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Table 1S. Simple median regression models of the association between patient characteristics and outcome variables

(a) Age

	Constant	Coefficient for age (SE)	p value
IES, total	5.6	-0.07 (0.05)	0.17
IES, intrusion	0.20	-0.002 (0.002)	0.17
IES, avoidance	0.33	-0.004 (0.003)	0.19
IES, hyperarousal	0	0 (0.0007)	1.00
MICRA, distress	0	0 (0.01)	1.00
MICRA, uncertainty	3	0 (0.03)	1.00
MICRA, positive experience	10.1	-0.11 (0.05)	0.04
MICRA Total	24.2	-0.23 (0.06)	<0.001
SWD	20.3	0.06 (0.03)	0.04

(b) Race

(2) 22	Constant	Coefficient for White Hispanic†	p value	Coefficient for African American†	p value	Coefficient for Asian† (SE)	p value	Coefficient for Other†	p value
		(SE)		(SE)		(SE)		(SE)	
IES, total	2	-1 (2.3)	0.66	7 (2.9)	0.016	0 (3.3)	1.0	0 (3.3)	1.0
IES, intrusion	0	0 (0.09)	1.0	0.4 (0.1)	0.001	0 (0.1)	1.0	0.1 (0.1)	0.31
IES, avoidance	0.1	-0.1 (0.1)	0.39	0.38 (0.2)	0.044	0.1 (0.2)	0.55	-0.1 (0.2)	0.55
IES, hyperarousal	0	0 (0.02)	1.0	0.2 (0.03)	<0.001	0 (0.03)	1.0	0 (0.03)	1.0
MICRA, distress	0	0 (0.4)	1.0	0 (0.5)	1.0	0 (0.6)	1.0	1 (0.6)	0.079
MICRA, uncertainty	3	-1 (1.4)	0.46	0 (1.7)	1.0	-2 (1.9)	0.30	2 (1.9)	0.30
MICRA, positive experience	5	0 (2.1)	1.0	0 (2.6)	1.0	0 (3.0)	0.74	3 (3.0)	0.32
MICRA Total	12	1 (2.7)	0.71	0 (3.4)	1.0	3 (3.9)	0.44	5 (3.9)	0.20
SWD	25	-3 (1.2)	0.016	-3 (1.6)	0.060	-5 (1.8)	0.006	-4 (1.8)	0.027

<sup>†</sup>Compared to race = Caucasian, non-Hispanic

(c) Education level

	Constant	Coefficient for college graduate	p value
		or higher (SE)	
IES, total	3	-1 (1.7)	0.57
IES, intrusion	0	0 (0.06)	1.0
IES, avoidance	0.25	-0.25 (0.1)	0.052
IES, hyperarousal	0	0 (0.01)	1.0
MICRA, distress	0	0 (0.2)	1.0
MICRA, uncertainty	3	0 (1.2)	1.0
MICRA, positive experience	4	1 (1.7)	0.56
MICRA Total	12	1 (2.5)	0.69
SWD	21	4 (0.9)	<0.0001

# (d) Time from genetic testing to questionnaire administration in months

	Constant	Coefficient for	p value
		time to	
		questionnaire	
		in months (SE)	
IES, total	2	0 (0.11)	1.00
IES, intrusion	0	0 (0.004)	1.00
IES, avoidance	0.17	-0.007 (0.01)	0.42
IES, hyperarousal	0	0 (0.001)	1.00
MICRA, distress	0	0 (0.02)	1.00
MICRA, uncertainty	2.2	0.1 (0.07)	0.14
MICRA, positive experience	3.7	0.06 (0.11)	0.60
MICRA Total	7.4	0.39 (0.15)	0.01
SWD	25.2	-0.17 (0.07)	0.02

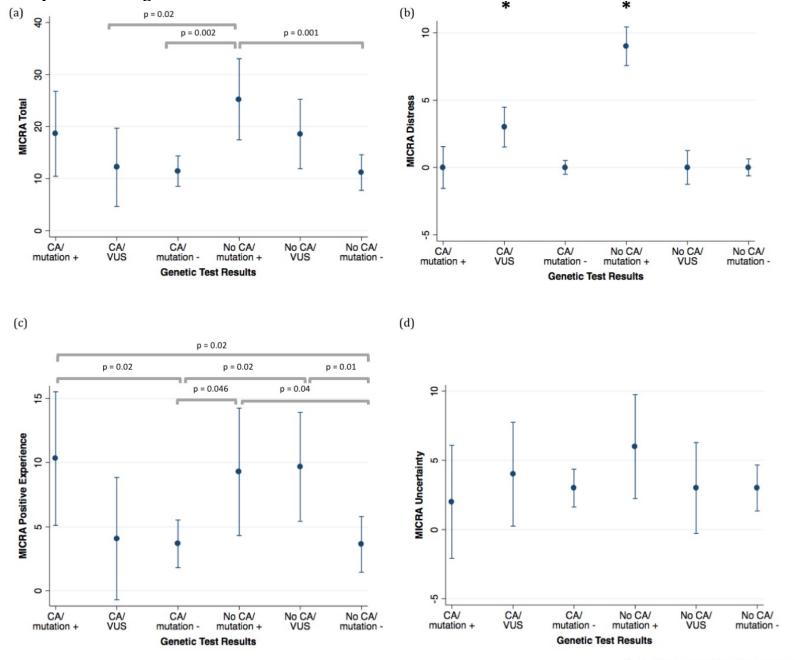
(e) Ambiguity tolerance

	Constant	Coefficient for AT-20 (SE)	p value
IES, total	4.9	-0.29 (0.21)	0.18
IES, intrusion	0.18	-0.01 (0.01)	0.25
IES, avoidance	0.36	-0.02 (0.01)	0.10
IES, hyperarousal	0	0 (0.004)	1.00
MICRA, distress	0	0 (0.04)	1.00
MICRA, uncertainty	3	0 (0.13)	1.00
MICRA, positive experience	2.75	0.25 (0.21)	0.24
MICRA Total	11.3	0.14 (0.30)	0.64
SWD	21.3	0.22 (0.15)	0.14

(f) Genetics knowledge

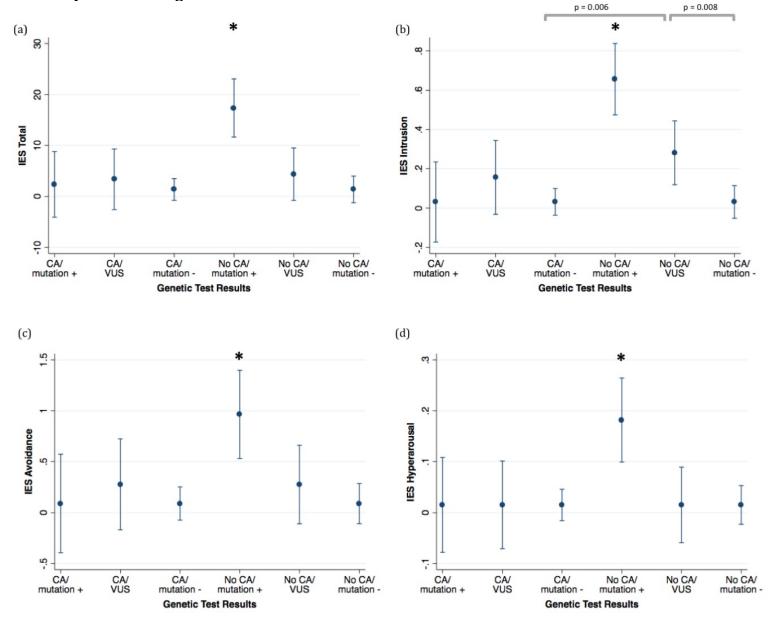
	Constant	Coefficient for	p value
		genetics	
		knowledge	
		(SE)	
IES, total	7.7	-0.07 (0.05)	0.20
IES, intrusion	0	0 (0.002)	1.00
IES, avoidance	0.83	-0.008	0.03
		(0.004)	
IES, hyperarousal	0	0 (0.0005)	1.00
MICRA, distress	0	0 (0.01)	1.00
MICRA, uncertainty	0.5	0.025 (0.03)	0.44
MICRA, positive experience	3.6	0.014 (0.07)	0.80
MICRA Total	15.8	-0.0375	0.62
		(80.0)	
SWD	16.2	0.086 (0.03)	0.01

Figure 1S. Estimates for median MICRA total, distress, positive experience, and uncertainty scores by genetic test results based on multiple median regression models



\* Significantly greater than all other groups

Figure 2S. Estimates for median Impact of Event Scale total, intrusion, avoidance, and hyperarousal scores by genetic test results based on multiple median regression models



# IMPACT OF GENE PANEL TESTING FOR BREAST CANCER

Thank you for agreeing to participate in our study on of the impact of genetic testing for breast cancer. Completing this questionnaire should take between 20-30 minutes. **All your answers will be completely confidential. Your responses will not affect your clinical care.** Before you begin, please review the instructions below.

#### INSTRUCTIONS

Please only fill out this survey if you have a diagnosis of breast cancer or if you have a family history of breast cancer.

- **Do not** write your name anywhere on the questionnaire.
- Cross out completely any answer you wish to change.
- You may choose not to provide a response for any question that you do not wish to answer.
- If you have any questions, please call 212-305-5077 to speak to our project staff.

For most questions, you'll answer by marking the checkbox that corresponds to your answer choice.	What is your gender?  ☐ Male ☐ Female
For some questions, you'll circle the number that corresponds to your answer choice.	I am satisfied with my decision  1 2 3 4
For other questions, there may be follow-up questions depending on your answer. Please make sure to answer these.	What effect do you think this had?  It brought us closer It drove us apart  If so, what effect do you think this had?  I am not sure

1.	What is your date of birth?/(Month/Day/Year)
2.	What is your gender?
	☐ Male ☐ Female
3.	Are you of Hispanic, Latino or Spanish origin?
	☐ Yes ☐ No
4.	Which of the following best describes your race? Select one or more responses.
	<ul> <li>□ White</li> <li>□ Black or African American</li> <li>□ Asian or Pacific Islander</li> <li>□ American Indian or Alaska Native</li> <li>□ Other race (specify):</li></ul>
5.	What is your marital status?
	<ul> <li>□ Never married</li> <li>□ Married or living as married with partner</li> <li>□ Married, not living together</li> <li>□ Separated</li> <li>□ Divorced</li> <li>□ Widowed</li> </ul>
6.	In what country were you born?
	☐ U.S.A. ☐ Another country:
7.	In what country was your mother born?
	☐ U.S.A. ☐ Another country:
8.	In what country was your father born?
	☐ U.S.A. ☐ Another country:
9.	From what countries did your ancestors come?

☐ Gra ☐ Soi ☐ Hig ☐ Po ☐ Soi ☐ Coi ☐ Ma	me grade school (grades 1 to 7) ade school graduate (grade 8) me high school (grade 9-12) gh school graduate or GED st high school training other than college (vocational, technical, etc.) me college or associate's degree llege graduate aster's degree /some graduate degree actoral degree
11.Which on responsil	ne of the following best describes your current main daily activities and/or bilities?
<ul><li>□ Wo</li><li>□ Un</li><li>□ Ke</li><li>□ Re</li><li>□ Te</li><li>□ Pe</li></ul>	nployed full-time (including full-time self-employment) orking for wages or salary part-time (including part-time self-employment) demployed or laid off eping house or raising children full-time tired mporarily disabled rmanently disabled her (specify:)
12.Have you	ever had breast cancer (now or in the past)?
	ave had breast cancer ave never had breast cancer
13.Have you	ever been diagnosed with another type of cancer besides breast cancer?
☐ Ye	s (Please specify. If you are not sure, please write "unsure.")
□ No	
-	ve a diagnosis of breast cancer, at what age were you diagnosed with breast f you are not sure, please write "unsure." 
15.Do you ha	ave a family history of breast cancer in blood relatives?
☐ No	s, I have family members with breast cancer , I do not have family members with breast cancer m not sure if I have family members with breast cancer
16.Has anyo	ne in your family died due to breast cancer?
□ No	s, I have family members who have died from breast cancer , I do not have family members who have died from breast cancer m not sure if I have family members who have died from breast cancer

10. What is the highest level of education you completed?

17	.Have you had genetic testing for breast cancer?		
	<ul> <li>Yes, I had genetic testing for breast cancer</li> <li>No, I did not have genetic testing breast cancer</li> <li>I am not sure whether I had genetic testing for breast cancer</li> </ul>		
	Please answer questions 18-20 <b>only</b> if you have had breast cancer a genetic testing	ı <b>nd</b> had	l
18	Did you have genetic testing performed before or after you were diagno breast cancer?	sed wit	h
	☐ Genetic testing was performed before I was diagnosed with breast can Genetic testing was performed after I was diagnosed with breast cancer.		
19	.What do you understand the results of your genetic testing to be?		
20	<ul> <li>Positive genetic test results. The genetic mutation that caused my brea identified.</li> <li>Negative genetic test results. No genetic mutation was identified, but t could be a genetic mutation that caused my breast cancer.</li> <li>Negative genetic test results. No genetic mutation was identified, which breast cancer was not caused by a genetic mutation.</li> <li>A variant of uncertain significant (VUS) was identified</li> <li>A genetic mutation that causes a different type of cancer was identified</li> <li>My test results are not clear to me.</li> </ul>	here stil h means	ll s my
20	Type of surgery to treat breast cancer (mastectomy versus lumpectomy)	No	Yes
	Receive radiation for breast cancer	No	Yes
	Receive chemotherapy for breast cancer	No	Yes
	Receive another type of treatment for breast cancer	No	Yes
	Change treatment for breast cancer	No	Yes
	Stop treatment for breast cancer	No	Yes
	Have prophylactic surgery	No	Yes
	Receive a drug to prevent breast cancer	No	Yes
_	Have more frequent or additional cancer screening	No	Yes
	If you answered yes to any of these statements, please explain why and	how.	

Please fill out questions 21 and 22 **only** if you have **not** had breast cancer **and** had genetic testing

ntified and the	erefore, I will	
<ul> <li>develop breast cancer.</li> <li>Positive genetic test results. A genetic mutation was identified and therefore, I have an increased chance of developing breast cancer.</li> </ul>		
Negative genetic test results. No genetic mutation was identified and therefore, I w not develop breast cancer.		
	these results	
was identifie	d.	
do any of the	following?	
No	Yes	
No	Yes	
No	Yes	
ain why and	how.	
	ntified and the dentified and the dentified and the dentified, and east cancer.  Twas identified and the No No	

	itary breast cancer, were you sufficiently informed about the pros and cons of ptions?
	No, the pros and cons of these options were not discussed. No, the pros and cons of these options were discussed, but I did not understand this information.
	Yes, the pros and cons of these options were discussed and I was given sufficient information to understand the issues.
	Yes, the pros and cons of these options were discussed and I understood what they meant, but more information would have been helpful.  I am not sure if I felt sufficiently informed.
25.When	deciding whether to undergo genetic testing, were you informed about the pility of identifying variants of uncertain significance (VUS)?
_	Yes, I was informed about the possibility of identifying VUS and understood what
	that meant Yes, I was informed about the possibility of identifying VUS and but it was not clear what that meant
	No, I was not informed about the possibility of identifying VUS before I underwent genetic testing but was after I received my results
	No, I was never informed about the possibility of identifying VUS I am not sure if I was informed about the possibility of identifying VUS
	lid you weigh the possibility of identifying genetic variants of uncertain icance (VUS)?
	I would like to know more information about my genes, even if it is unclear what to do with that information.
	I do not like the uncertainty of knowing information when it is unclear what to do with that information.
	I am not sure how I weighed the possibility of identifying variants of uncertain significance (VUS).
	I was unaware about the possibility of identifying variants of uncertain significance (VUS).
	d you have preferred having more time to make the decision about how many to test for hereditary breast cancer and possibly discuss your options with s?
	Yes No I do not remember/I do not know

24. If you were given various options to have different numbers of genes tested for

28	8. Who helped you to make your decision about how many genes to be tested for hereditary breast cancer? (Select one or more responses)					
	000000000	My oncologist My surgeon My primary care doctor Other doctors My genetic counselor My children My significant other Other family members Friends Nobody I was not given various options to have different numbers of genes tested for hereditary breast cancer Other (please specify):				
	Pleas	e answer questions 29-39 <b>only</b> if you had genetic testing.				
		Two genes (BRCA1 and BRCA2) Small panel of 5 genes Medium panel of ~11 genes Large panel of ~25 genes One specific mutation that runs in my family I am not sure how many genes I was tested for				
	cance	r?				
	0	No, I did not realize I was having genetic testing performed No, I was told I was having genetic testing, but I didn't understand what that specifically meant. Yes, I was told I was having genetic testing and was given sufficient information to understand what that meant. Yes, I was told I was having genetic testing and understood what that meant, but more information would have been helpful. I am not sure if I felt sufficiently informed.				
31	. If you	had genetic testing and know the results, do you feel you understand what				
	these	results mean?				
		Yes No I had genetic testing, but I do not know the results				

32	results?	n again si	ince rece	iving your gen	ient test	
	<ul> <li>☐ Yes, and I found this helpful</li> <li>☐ Yes, but I did not find this helpful</li> <li>☐ No, I did not feel that I needed to</li> <li>☐ No, but I would like to</li> <li>☐ I do not remember if I contacted a genetic test results</li> </ul>	genetic co	ounselor a	igain since rece	eiving my	
33	.The questions below are about some s	-	-			
receiving your genetic test results. Please indicate if, within the last week, you be experienced each emotion never, rarely, sometimes or often, by circling the nur corresponding to your answer in the columns next to each symptom.						
	Symptoms in the last week	Never	Rarely	Sometimes	Often	
	Feeling upset about my test result	1	2	3	4	
	Feeling sad about my test result	1	2	3	4	
	Feeling anxious or nervous about my test result	1	2	3	4	
	Feeling guilty about my test result	1	2	3	4	
	Feeling relieved about my test result	1	2	3	4	
	Feeling happy about my test result	1	2	3	4	
	Feeling a loss of control	1	2	3	4	
	Having problems enjoying life because of my test result	1	2	3	4	
	Worrying about my risk of getting breast cancer	1	2	3	4	
	Having difficulty making decisions about breast cancer screening or prevention (e.g., having preventive surgery or getting medical tests done)	1	2	3	4	
	Understanding clearly my choices for breast cancer prevention or early detection	1	2	3	4	
	Feeling frustrated that there are no definite breast cancer prevention guidelines for me	1	2	3	4	

Thinking about my test results has

affected my work or family life.

1

2

3

4

Symptoms in the last week	Never	Rarely	Sometimes	Often
Feeling concerned about how my test	1	2	3	4
results will affect my insurance status  Having difficulty talking about my test	1		3	4
results with family members	1	2	3	4
Feeling that my family has been	4	0	0	
supportive during the genetic counseling and testing process	1	2	3	4
Feeling satisfied with family		•		
communication about my genetic test result	1	2	3	4
Worrying that the genetic counseling	_	•		,
and testing process has brought about conflict within my family	1	2	3	4
Feeling regret about getting my test	1	2	3	4
results				
Worrying about the possibility of my child(ren) getting breast cancer (Please answer, regardless of your test result, if you have children)	1	2	3	4
Feeling guilty about possibly passing on				
the disease risk to my child(ren)	1	2	3	4
(Please answer, regardless of your test result, if you have children)	1	2	3	4
Feeling that the genetic test result has				
made it harder to cope with my breast cancer (Please answer, if you have	1	2	3	4
breast cancer or have had it in the past)				
Feeling that the genetic test result has				
made it easier to cope with my breast	1	2	3	4
cancer (Please answer, if you have	_	_	3	-
breast cancer or have had it in the past)				

_	you experienced discrimination in any of the following ways following genetic g? (Select one or more responses)
000000000	People changing the way they feel about me and interact with me Problems with life insurance Problems with long-term care insurance Problems with disability insurance Problems with disability claim Someone accessing my genetic information without my permission Problems with work Being fired from a job Being denied a job Being denied a promotion Denial of a house or apartment for rental Denial of a mortgage
35.With	whom did you share your results? (Select one or more responses)
00000000000	My primary care doctor Other doctors My parents My brothers/sisters My aunts/uncles My nieces/nephews My cousins My grandparents My children My significant other Friends Nobody Other (please specify):
-	shared your genetic test results with your family, what was their initial nse to your results? (Select one or more responses)
	Sad Happy Relieved Anxious Concerned Confused Ambivalent (didn't care either way) Angry Other (please specify):

37.If you chang	shared your genetic test results with your family, over time, have their feelings ged?
	Yes, they feel better about the information I shared with them Yes, they feel worse about the information I shared with them No, they feel the same about the information I shared with them I am not sure
38. If gen	etic testing was performed, what effect do you think this had on the family?
	I am not sure Having genetic testing did not change our family dynamic It brought the family members closer together It was disruptive to the family If having genetic testing performed was disruptive, please explain what specific issues arose within the family following genetic testing:
39.Did y	ou hide your genetic test results from anyone due to fear of discrimination?
	No Yes If so, from whom?
	as you know, are there any laws that protect you from discrimination based on ic test results?
	Yes No Not sure
	you worried about experiencing discrimination in any of the following ways ving genetic testing? (Select one or more responses)
	People changing the way they feel about me and interact with me Problems with life insurance Problems with long-term care insurance Problems with disability insurance Problems with disability claim Someone accessing my genetic information without my permission Problems with work Being fired from a job Being denied a job Being denied a promotion Denial of a house or apartment for rental Denial of a mortgage

42. Dlu/ w	Juliu your genetic test results play a role in your decision to change your job:
-	ould your genetic test results play a role in your decision to move to another r country?
[	
44. Did/wo	ould your genetic test results play a role in your decision to get married?
45.Did/wo	ould your genetic test results play a role in your decision to get divorced?
46.Did/wo	ould your genetic test results play a role in your decision to have a biological
47.Did/wo	ould your genetic test results play a role in your decision to adopt a child?
[	
48.Did/wo	ould your genetic test results play a role in your decision to consider retiring?
-	ould your genetic test results play a role in your decision to buy new or more urance?

50. Did/would your genetic test results play a redisability insurance?	ole in your	decisio	n to buy	new or 1	nore
<ul><li>No</li><li>Yes</li><li>If yes, why and how?</li></ul>					
51. Below is a list of difficulties people sometim	es have af	ter certa	in life e	vents. Pl	ease
read each item and then indicate how distre	ssing each	difficul	ty has be	een for y	ou
since you've had genetic testing by circling t	he corresp	onding	number	•	
	Not at all	A little bit	Moderately	Quite a bit	Extremely
Any reminder brought back feelings about it	1	2	3	4	5
I had trouble staying asleep	1	2	3	4	5
Other things kept making me think about it	1	2	3	4	5
I felt irritable and angry	1	2	3	4	5
I avoided letting myself get upset when I thought about it or was reminded of it	t 1	2	3	4	5
I thought about it when I didn't mean to	1	2	3	4	5
I felt as if it hadn't happened or wasn't real	1	2	3	4	5
I stayed away from reminders of it	1	2	3	4	5
Pictures about it popped into my mind	1	2	3	4	5
I was jumpy and easily startled	1	2	3	4	5
I tried not to think of it	1	2	3	4	5
I was aware that I still had a lot of feelings about it, but I didn't deal with them	1	2	3	4	5
My feelings about it were kind of numb	1	2	3	4	5
I found myself acting or feeling like I was back at that time	1	2	3	4	5
I had trouble falling asleep	1	2	3	4	5
I had waves of strong feelings about it	1	2	3	4	5

I had trouble concentrating

I tried to remove it from my memory

Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	1	2	3	4	5
I had dreams about it	1	2	3	4	5
I felt watchful and on-guard	1	2	3	4	5
I tried not to talk about it	1	2	3	4	5

# 52. Use the following scale to answer questions referring to your decision to pursue OR NOT pursue genetic testing.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I am satisfied that I am adequately informed about the issues important to my decision	1	2	3	4	5
The decision I made was the best decision possible for me personally	1	2	3	4	5
I am satisfied that my decision was consistent with my personal values	1	2	3	4	5
I am satisfied that this was my decision to make	1	2	3	4	5
I am satisfied with my decision	1	2	3	4	5

# 53. Please indicate whether the following statements are true or false.

A gene is a piece of DNA	True	False
There are genes that affect intelligence	True	False
Genes are the only determinants of intelligence	True	False
If close relatives have diabetes, you are more likely to have diabetes	True	False
An individual with a mutation in a cardiac disease gene, he/she may never develop cardiac disease	True	False
Healthy parents can have a child with a hereditary condition.	True	False
A deaf couple could have a hearing child.	True	False
Children of a woman with a mutation in a gene will always inherit the mutation.	True	False
A father can pass down a mutation in a breast cancer gene to his daughters.	True	False
A mutation in a gene may not cause disease until later in adult life.	True	False

# 54. Please do not spend too much time on the following items. There are no right or wrong answers and therefore your first response is important. Circle True or False for each statement below. Be sure to answer every question.

A problem has little attraction for me if I don't think it has a solution.	True	False
I am just a little uncomfortable with people unless I feel that I can understand their behavior.	True	False
There's a right way and a wrong way to do almost everything.	True	False
I would rather bet 1 to 6 on a long shot than 3 to 1 on a probable winner.	True	False
The way to understand complex problems is to be concerned with their larger aspects instead of breaking them into smaller pieces.	True	False
I get pretty anxious when I'm in a social situation over which I have no control.	True	False
Practically every problem has a solution.	True	False
It bothers me when I am unable to follow another person's train of thought.	True	False
I have always felt that there is a clear difference between right and wrong.	True	False
It bothers me when I don't know how other people react to me.	True	False
Nothing gets accomplished in this world unless you stick to some basic rules.	True	False
Vague and impressionistic pictures really have little appeal for me.	True	False
Were I a scientist, it would bother me that my work would never be completed (because science will always make new discoveries).	True	False
If I were a doctor, I would prefer the uncertainties of a psychiatrist to the clear and definite work of someone like a surgeon or x-ray specialist.	True	False
Before an examination, I feel much less anxious if I know how many questions there will be.	True	False
The best part of working a jigsaw puzzle is putting in that last piece.	True	False
Sometimes I rather enjoy going against the rules and doing things I'm not supposed to do.	True	False
I don't like to work on a problem unless there is a possibility of coming out with a clear-cut and unambiguous answer.	True	False
I like to fool around with new ideas, even if they turn out later to be a total waste of time.	True	False
Perfect balance is the essence of all good composition.	True	False

55	genetic testing in the space below.
56	5. Would you be willing to speak with us about your experience with genetic testing?
	☐ No  If yes, please provide your contact information.
	Telephone:Email:
	Thank you for taking the time to complete this questionnaire. Your participation is very much appreciated.