

I am Bruce Barber and this is Yale Cancer Center Answers with Drs. Ed Chu and Ken Miller. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and Dr. Miller is a Medical Oncologist and the Director of the Connecticut Challenge Survivorship Clinic. If you would like to submit a question about cancer, please e-mail us at canceranswers@yale.edu or call 1-888-234-4YCC. If you would like to hear past editions of Yale Cancer Center Answers, each segment is posted on the Yale Cancer Center website at yalecancercenter.org. This evening, Dr. Chu and Dr. Miller will be talking about a controversial new advertising campaign for genetic testing. They are joined by Richard Blumenthal, the Attorney General for the State of Connecticut, and Ellen Matloff, a research scientist at the Yale School of Medicine and Director of the Yale Cancer Center Genetic Counseling Program. She will begin with some background.

- Matloff This is a campaign that includes television ads, magazine ads and flyers. It is advertising a genetic test for mutations within two genes called BRCA-1 and BRCA-2, which are for hereditary breast and ovarian cancer.
- Chu What is the importance of genetic testing for breast and ovarian cancer? Is it relevant to all patients who are diagnosed with those diseases or is it a bit more focused?
- Matloff That is the important question. Only a tiny minority of people in the general population carry a mutation in one of these genes. The current estimate is 1 in 400 listeners probably carry one of these mutations. About 10% of women with breast cancer carry a mutation in one of these genes; it is really the minority.
- Miller Question for the Attorney General, with those small numbers in mind, what is your perspective in terms of an advertising campaign like this?
- Blumenthal Ellen is really the expert here, I am just the lawyer, but my function as the State's lawyer is to protect consumers against ads or pitches that may be misleading or deceptive. The problem that we are investigating with this ad campaign is the potential for exaggerating the benefits of the test; leading people to spend literally thousands of dollars. Each of these tests can be as much as 3000 dollars in cost and then the consumer may be misled by the test if it is not properly interpreted by the scientist, clinician or health care provider that has the training. If you view the ad, and it is very difficult to reproduce orally in this setting without the magic of television how the ads will be perceived, but the idea of reducing risk is the message of the ad. You can reduce your risk by doing this test, and of course the test alone may not reduce risk at all. In fact, there may be other tests that better reduce risk. At the end of the ad, it is portrayed as a service to consumers rather than a paid advertisement. So in a number of respects we think this ad needs to be investigated along with the entire advertising campaign. The test itself may be

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valid, but my goal is to reduce the effect if its benefits are exaggerated and if the public is misled.

- Chu Mr. Attorney General, with respect to advertisements for traditional pharmaceutical drugs, the pharmaceutical companies have to look at each and every word very carefully because they know that the FDA scrutinizes every word, every phrase and every sentence to the nth degree. I am just curious, is there the same level of scrutiny focused on this type of "public awareness campaign"?
- Blumenthal Your question goes to one of the key points here. First of all, the FDA has applied virtually no scrutiny to these ads, which is one of the reasons why we are essentially filling the gap that the FDA has left through its inaction in this area. Your question also points out, very compellingly, another reason for our investigation. There are no indications in these ads of the potential contraindications or potential down sides. As you listen to the ads for drugs these days, there is a whirlwind of caveats at the end. They say that people who are overweight, women who are pregnant, or whoever, should not be taking this drug. There are none of those qualifications in this ad. It is a straight pitch that may be over the line, so to speak, in the kinds of benefits it promises.
- Miller I want to go back to one of the issues you brought up that address both of you. About the issue of reducing risk, and I think you summarized it well when you said that a test does not reduce risk, but along those lines, when the patient does have this test and it is properly interpreted, what is the benefit?
- Matloff For the right person there are many benefits of having this test. It could lead to earlier and more increased surveillance using techniques that are not offered to the general public. It could lead to the use of medications like tamoxifen, for example, that healthy women can take to reduce their risk of getting cancer, but it can also lead to removing parts of the body such as breast tissue or ovarian tissue for people at very high risk. That is why it is so critical that the average person does not have this test and perhaps mistakenly have a prophylactic surgery they did not need. On the contrary, we don't want them to think that because their test came back negative they never need another mammogram. Either of those would be inaccurate and very dangerous interpretations of the test. We have data to show that these genetic tests are misinterpreted frequently, and one of the things I would like to point out is that this company has been going into clinicians' offices to "train them" on how to order and interpret the test. There is a very clear conflict of interest here, not to mention that a few hours of training by the company that sells the test does not replace graduate training in this area. I think it is important for clinicians to realize that this also puts them at risk.
- Blumenthal Pursuing one point that Ellen made from a consumer protection standpoint, the

unfounded reactions, whether it is a false sense of security if the test is negative and therefore a failure to seek further treatment, or exaggerated fears and apprehension that may lead to overreaction, are both potential dangers even if the test itself is a valid one. We have no reason to think that the test is bogus. I do not want people to think that I am challenging the veracity or legitimacy of the test itself. My focus as Attorney General is on the ad campaign and the mass merchandizing. I might just add that it is hardly the only ad campaign out there for either medicine or medical treatment aimed directly at consumers. What were seeing here is a variation of a general trend that all of us are aware of, that is ads aimed at consumers so that they will go to their doctors and ask why they have not prescribed, such and such a drug for their condition. It may lead to sales, but it may also lead to side effects and failure to seek other kinds of treatment that are more efficacious. There are a whole series of potential downsides, which is why we have those qualifications and caveats that are required of many drugs these days that are marketed directly to consumers.

Miller Along those lines, when you and your office look at an ad like this, what are some of the things you look for so that the public is being warned and is being counseled properly?

Blumenthal Well that is another very good question. We have looked at ads, for example, for pain medicine. Because of the potential dangers of OxyContin, made by a Connecticut Company Purdue Pharma, we are looking at some of the off-label marketing of other drugs made by a company called Cephalon Actiq, which is another cancer pain medication. What we look for is warnings about potential dangers, accuracy in the statement of benefits and potential exaggerations of those benefits. It may lead to misperceptions on the part of consumers. They can be visual, for example in the ad that we are discussing for the Myriad Genetics test, there is a line that says, "Cancer runs in my family." Well what does that mean? Is it one person or three? Is it your mother, or your mother-in-law who has no genetic relation to you? "Reduce the risk of cancer" is another line. It says to be ready against cancer. What does that mean? In the context of the visual it may be misleading; it may lead people to think they really need this test when in fact they are not a good candidate. It is dangerous if the person whose counsel they seek is not adequately informed or prepared to give them good advice and help them avoid the downsides that Ellen has outlined very well.

Chu It is interesting, a few years ago Myriad Genetics, again the company that markets this genetic test, did a similar type of direct-to-consumer public awareness campaign in two cities; Atlanta, Georgia and Denver, Colorado. There were some independent groups that analyzed the data that came out of that, and while it was true that clearly more women called up their providers to ask about the genetic tests, and more women received the genetic test, it was not clear that those women were at true risk for developing familial breast cancer. There were also some

issues relating to the providers and that they did not really understand the implications. Ellen, could you speak to that?

Matloff That was a test done about four years ago, and as you say, it was in Denver and Atlanta. There was harsh criticism of the campaign and the ads did not include the very things that we say they do not include. It did not increase the referrals of the high-risk patients, whom this test is intended to reach. Many of us in the field were very naïve and thought, "Wow, it didn't work," but we were looking at it from a public awareness bent. They were obviously looking at it from a different bent. I would like to correct you by saying; this is not a public awareness campaign. This is an advertising campaign by a private company that holds a patent on this testing. Therefore, they have a forced monopoly. All the other labs in the country that were doing this testing were shut down. They are the only lab that can do it. So yes, they have invested interest in having people get this test, and not necessarily people who are at high risk. Many of us were naïve and were shocked when the campaign was repeated and they used exactly the same ad from the last campaign, but it worked well. It accomplished its goal. It made people think they needed the test even if they did not.

Chu Let me ask you a question Ellen. You direct the Cancer Genetic Counseling Program here at the Yale Cancer Center and work very closely with Allen Bale who is in genetics, and you are a member of genetics, if one of our patients happens to be concerned that there is familial breast cancer, and we want to do the BRCA-1 and BRCA-2 testing, can our core laboratory here at Yale do that test or are we bound by this patent and Myriad Genetics has to do that testing?

Matloff We are all bound by the patent so all of our labs have been shut down. We may only send this test to Myriad Genetics in Salt Lake City, Utah.

Miller Attorney General, at this point what is your office doing to look into this and what are some of the actions that may be taken?

Blumenthal We are in the fact-finding mode. We are doing an investigation, and it may sound sort of commonsensical as to what the questions are, but obviously the key question is whether the company should be permitted to continue this advertising campaign or be required to modify it. There is also another question that Ellen has highlighted very well as to the potential anti-trust implications; the anti-competitive affects of its general practices. What we are doing right now, very specifically, is that we have issued a subpoena for information. The company says it will cooperate and provide that information, which we will analyze in terms of the support, the scientific evidence provided to support the claims implied or explicit in these ads. Then we will have to make a judgment about whether the ads were truthful and accurate and what remedies might be appropriate. In the classic consumer protection case, when a consumer is misled

and buys something that they were misled into purchasing, they can receive money back. There can be financial damages. There also can be injunctive relief. That is relief looking forward saying you have to change the ad campaign in certain common sense ways. The question is, our consumers being told the full truth or are they being misled somehow? It is unique, to go back to the word that was used initially insofar as genetics testing is involved, but it is hardly unique in terms of consumer protection. The basic question is the product and the pitch, is it accurate?

Miller Thank you. We would like to remind our listeners to e-mail their questions to us at canceranswers@yale.edu. We are going to take a short break for a medical minute. Please stay tuned to learn more from the Attorney General, Richard Blumenthal, and Ellen Matloff from the Yale Cancer Center.

Medical Minute

There are over 10 million cancer survivors in the US and the numbers keep growing. Completing treatment for cancer is a very exciting milestone, but cancer and its treatment can be a life-changing experience. After treatment, the return to normal activities and relationships can be difficult and cancer survivors may face other long-term effects of cancer including heart problems, osteoporosis, fertility issues and an increased risk of a second cancer. Resources for cancer survivors are available at federally designated comprehensive cancer centers such as the one at Yale Cancer Center to keep cancer survivors well and focused on healthy living.

This has been a medical minute brought to you by Yale Cancer Center. More information is available at yalecancercenter.org.

Miller Welcome back to Yale Cancer Center Answers. This is Dr. Ken Miller. I am here with my co-host, Dr. Edward Chu, and also with Attorney General, Richard Blumenthal, and Ellen Matloff, Director of the Yale Cancer Center Genetic Counseling Program. This is a fascinating discussion we have been having and I want to focus now on who should have the test. Ellen, how would a woman and her doctor determine if this would be an important test for her?

Matloff There are six questions that a woman or man can ask themselves to find out if they would be a good candidate for this test. The first question is, has anyone in my family had breast cancer at age 45 or younger? The second question, are there multiple members on the same side of our family who have all had breast cancer? The third question, has there been an ovarian cancer, fallopian tube cancer or a primary peritoneal cancer on the same side of the family with breast cancer? The fourth question, is our family of Ashkenazi or Eastern European Jewish ancestry? This question is because we know that these mutations are more common in that

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ethnic background. The fifth question, is there any male breast cancer in the family? This is an important one. The last question, has anyone in the family had both breast and ovarian cancer or more than one primary breast cancer? I know that is a lot of information, but listeners can go to www.yalecancercenter.org and right from the homepage you can click on BRCA testing and those facts will come up.

Blumenthal If there are other kinds of cancer in the family, for example, colon cancer or skin cancer, is that an indication to take the test?

Matloff I am so glad that you brought this up because we are focusing today on BRCA-1 and 2 testing because that is what this company is advertising, but there are genes for all different types of cancers. Hereditary colon cancer, melanoma, thyroid cancer and pancreatic cancer are all types of cancer in which we would order a different test. In fact, and this is a really critical point, for some families with breast cancer we would order a different test. If the family had both breast cancer and thyroid cancer, or breast cancer and a multitude of other cancers, we would not order BRCA-1 and 2 testing, because those are the wrong genes to test for. You would never know that from this advertisement campaign.

Blumenthal Exactly and I think that is an important point here from a legal standpoint. The ad implies that if anybody in your family has breast cancer, this test is the only test you can take. In fact, there may be more appropriate tests. It is a little bit like any pharmaceutical drug, if the advertiser says this drug is the only one that is appropriate for headaches or arthritis or whatever, the FDA, or your friendly Attorney General lets say, will say no, this is misleading and deceptive. We have not reached any conclusions here, but the same kind of scrutiny is appropriate.

Chu Ellen, one thing that you have always emphasized to us clinicians is the importance of having cancer genetic counselors who have an in depth understanding, the training and experience to know how to interpret the data. As a clinician, I know we do not have that same level of expertise. We are very fortunate to have you as head of our Cancer Genetic Counseling here at the Yale Cancer Center, but can you discuss that a little bit more for our listeners out there?

Matloff Genetic counselors have graduate training in this field. They also can be certified by the American Board of Genetic Counseling. This isn't a one-hour course that you receive through the company that sells the test. It is graduate training in the area. We are lucky in the Northeast to have many-many genetic counselors. If anyone is looking for a genetic counselor in their area, probably the fastest thing to do would be to Google National Society of Genetic Counselors. It will take you to the website where you can find a genetic counselor in your area. You could also go to the National Cancer Institutes' cancer genetics page which will bring up the information you need.

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Chu I do not know if I should bring this up Mr. Attorney General.

Blumenthal I have the right to remain silent.

Chu Yesterday in the mail I received from Myriad Genetics what looks to be a direct to provider campaign. They actually outlined not only the BRCA-1 and BRCA-2 test, but some of the genes that Ellen talked about for colorectal cancer and melanoma. Basically what it said is that they were able to train the providers as to what tests should be performed and how to interpret them. I am just curious what are your thoughts?

Blumenthal That is a very important point. This ad campaign is directed at the general public, but it is also directed at health care providers. We have done investigations in the past on pitches and incentives, some of them monetary incentives, offered to providers by either pharmaceutical drug companies or manufacturers of health care equipment and so forth, and so we are very interested in that aspect of the campaign as well. The exaggerations that may be given to health care providers and clinicians like yourselves who deal with patients, or counselors, fail to state accurately what the limitations are, what the potential risk of misinterpretation is or what care has to be taken in securing good advice. To emphasize again, I am a layman, but my brother is a doctor and never tires of telling me how little I know about health care. He is a very eminent doctor, well I should not use the word eminent, but he has the Samuel O. Thier Chair at Harvard Medical School.

Miller That is pretty eminent.

Blumenthal That has a special significance in the Yale community and in my family, but I know how limited the layman's knowledge may be and also how doctors themselves need to be educated in new techniques and new advances. With this ad campaign, or the marketing pitch insofar, providers also could be problematic.

Miller Looking at it from the other point of view, what are some of the rights that a company has in terms of what they can provide? How best can they do that responsibly?

Blumenthal A company certainly has rights to free speech just as you and I do. There is a line of first amendment cases that have to do with commercial speak, and yet, if it is untruthful or deceptive, those rights have to yield to a broader public policy. The policy is that the consumer and the medical community, everyone involved, has some right to correct that kind of deception. They obviously have the right to the patent and the right to sell and market a test for the right purposes in the right way. They can do the public a service by providing a test as long as its benefits are not exaggerated. Those are a series of rights in our free enterprise system. There is a lot of stuff sold out there and a lot of pitches are made that certainly

concern me. I am not at a loss for things to do in the course of the day, but I would emphasize this final point, everyone in our society today has a concern about cancer. This investigation is not to discourage people from learning or being aware, as Ellen pointed out so accurately. This is not about trying to discourage people from getting information. In fact, on the contrary, it is about correct and truthful information.

Miller We would like to thank the Attorney General, Richard Blumenthal, and Ellen Matloff for joining us on Yale Cancer Center Answers for what has really been a fascinating discussion.

Chu I agree. Thank you so much for joining us today. It has been very informative for our listeners. Again, for those who want more information about BRCA-1 and 2 testing, please go to our website www.yalecancercenter.org. Until next week, this is Dr. Ed Chu and Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.

If you have questions, or would like to subscribe to our Podcast, go to www.yalecancercenter.org where you will also find past broadcasts in written form. Next week, we look at new developments in the study of Chinese herbal medicines.