



■ Personalized Medicine and Wellness Survey
Executive Summary

Burrill & Company/ChangeWave Research



Life Sciences: Venture Capital, Private Equity, Merchant Banking, Media



Consumers are worried about developing genetic-based diseases, but remain reluctant to use genetic tests that will provide early warning signs.

Companies need to make the case for the benefits of testing, allay privacy concerns, and would be wise to work through doctors.

As a spate of consumer genetic tests enter the market, a new Burrill & Company/ChangeWave Research survey finds consumers remain wary of these products, the benefits they offer, and the personal risks users may encounter.

The findings of the Personalized Medicine and Wellness Survey (conducted May 27 through May 30, 2008) of 550 upscale business professionals, show that while consumers are warming to the availability of genetic tests, they still need to be convinced of the value of the information these new tools provide.

To be successful, the industry will need to demonstrate that the information gleaned from genetic testing is actionable through lifestyle changes or other preventative measures, and not just bad news.

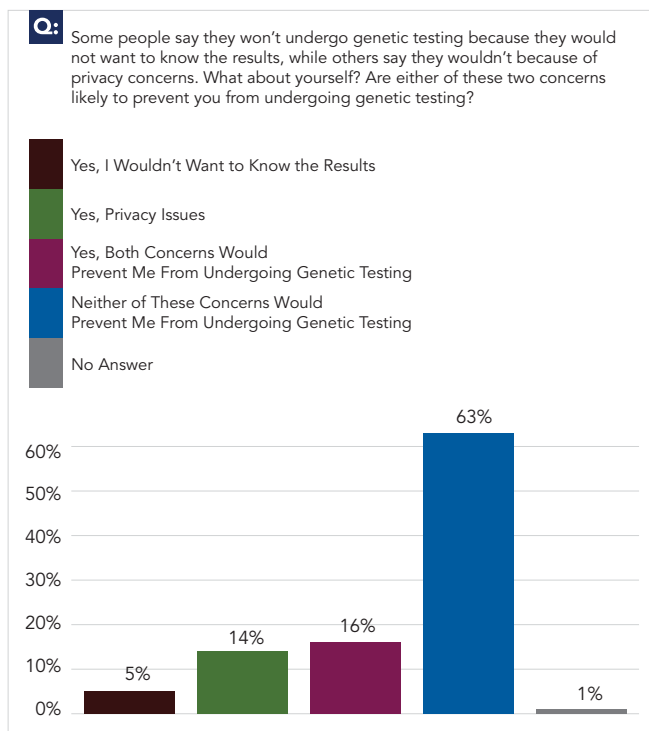
The industry would also be wise to reach out to physicians, who remain a critical source of information to consumers. The survey found that among the consumers who have had a genetic test, the leading reason why they did so was because a physician recommended they do so.

KEY SURVEY FINDINGS:

- **Benefits of genetic tests need to be made clear:** Genetic test makers will need to make a case that the information they provide consumers is something on which they can act upon such as lifestyle changes or use of preventative therapies, and not just a source of dire news to come.
- **Privacy issues remain a barrier to use of new genetic tests:** Despite the recent passage of new privacy laws protecting an individuals genetic “fingerprint,” consumers remain concerned about who will have access to their information and how it will be used.
- **Primary motivation to get a genetic test:** Consumers are sensitive to the costs of tests. Lower cost will become a primary motivator for people to get tested, but concerns about family history and concerns about a specific disease also will drive use of genetic tests.
- **Doctors are the gatekeepers for the use of genetic tests:** Despite the proliferation of information through the Internet, doctors remain the most likely place consumers will turn to for information. A doctor’s recommendation is the most likely reason someone will get tested.
- **Legislative action helpful—but even more protection wanted:** New legal protection under the Genetic Information Non-discrimination Act has increased consumers comfort level with genetic testing, but consumers still want additional issues addressed.

The Findings

Benefits of genetic tests need to be made clear: Genetic test makers will need to make a case that the information they provide consumers is something on which they can act upon such as lifestyle changes or use of preventative therapies, and not just a source of dire news to come.

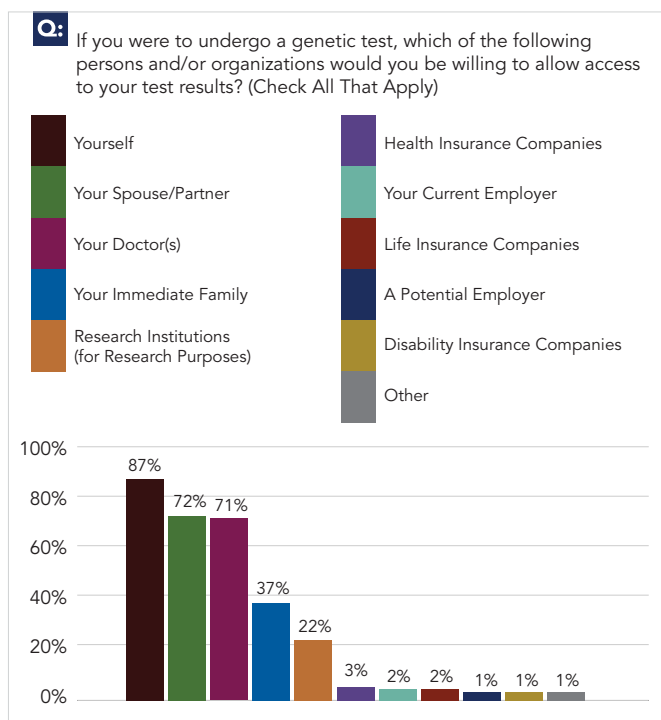


Only one in five consumers said it was very likely (5 percent) or likely (15 percent) that they would get a test in the next few years to measure their genetic risk for certain diseases. A total of 35 percent of those surveyed said that they wouldn't undergo genetic testing either because of privacy concerns (14 percent), because they wouldn't want to know the results (5 percent) or both (16 percent). Even though the majority (63 percent) did not see these concerns as a barrier, the findings suggest consumer genetics companies will need to convince consumers that information gleaned from genetics tests are actionable.

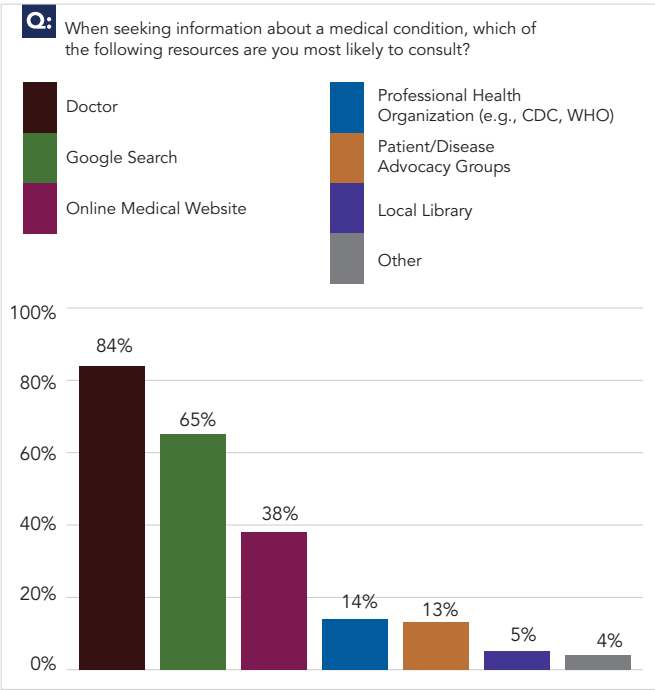
Privacy issues remain a barrier to use of new genetic tests: Despite the recent passage of new privacy laws protecting an individual's genetic fingerprint, consumers remain concerned about who will have access to their information and how it will be used.

When asked about who they would be willing to give access to their genetic test results, 72 percent said a spouse or partner and 71 percent said their doctor. A total of 22 percent said they would share the results with research institutions for research purposes, but only a fraction of consumers would share such results with health insurance companies (3 percent), their current employer (2 percent), a life insurance company (2 percent), or a perspective employer (1 percent).

Concerns about the benefits and privacy risks associated with electronic medical records services from providers such as Google or Microsoft that promise to securely store their medical histories in a single place and make it easier to change healthcare providers. Though 39 percent said it was either very likely (13 percent) or somewhat likely (26 percent) they would use such a service, nearly half of the respondent said it was unlikely they would do so.



Doctors are the gatekeepers for the use of genetic tests: Despite the proliferation of information through the Internet, doctors remain the most likely place consumers will turn to for information. A doctor's recommendation is the most likely reason someone will get tested.



Just 4 percent of those surveyed said they have ever had a genetic test to determine their risk for a particular disease, but two-thirds of those who did so because it was recommended by a doctor. The finding suggests that makers of these tests might have more success penetrating the market by working through doctors rather than trying to make the case for their products directly to the consumer. A total of 20 percent said they believe it was either very likely (5 percent) or somewhat likely (15 percent) that they would have a genetic test within the next few years to assess their risk for developing a specific disease.

Doctors (84 percent) also remain the top choice as a source to turn to for medical information as the most likely place consumers when seeking medical information. This makes it important that even if providers don't sell through doctors that they communicate with them about their tests and their value. Other important sources consumers turn to for information include Google (65 percent) and online medical web sites (38 percent). This suggests that makers of test should use the Internet to provide information to consumers and should have a robust communication strategy to speak to leading information sources consumers use.

Q: How concerned are you personally about developing each of the following conditions?

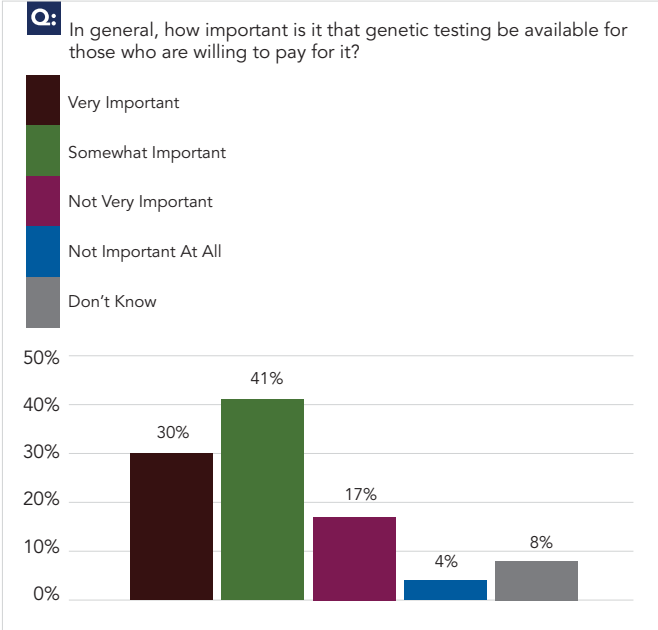
	VERY CONCERNED	MODERATELY CONCERNED	SLIGHTLY CONCERNED	NOT CONCERNED AT ALL	NO ANSWER
Cancer (Any Type)	22%	32%	30%	14%	2%
Heart Disease	22%	32%	28%	16%	3%
Diabetes	14%	22%	29%	32%	3%
Alzheimer's Disease	10%	29%	35%	25%	1%
Parkinson's Disease	8%	16%	30%	43%	2%
Multiple Sclerosis	6%	11%	28%	52%	3%
Asthma	4%	10%	20%	62%	4%
Other	1%	2%	2%	13%	82%

Primary motivation to get a genetic test: Consumers are sensitive to the costs of tests. Lower cost will become a primary motivator for people to get tested, but concerns about family history and concerns about a specific disease also will drive use of genetic tests.

Consumers responded that cost (24 percent) would motivate them to get a genetic test when asked in an open-ended question about what would motivate them to get a genetic test. This topped the list, which also drew strong sentiments that a family history of a genetic-based illness (23 percent) and to diagnose a health problem (20 percent) also ranked highly.

Heart disease and cancer are the two diseases consumers said they are most concerned about developing, however, between 70 and 80 percent said they would be very willing or somewhat willing to get a genetic test to for heart disease, cancer, Alzheimer’s or diabetes, with about half of them saying they were “very willing.” Between 20 and 25 percent said they would not be willing.

Even though consumers may not plan on getting a genetic test, many think it’s important that these



tests be available to those willing to pay for them. A total of 70 percent scored this as either very important (30 percent) or somewhat important (41 percent). When asked how important that such tests were available to them personally, these numbers dropped to 37 percent of respondents scoring this either as very important (10 percent) or somewhat important (27 percent).

Q: Genetic testing is currently available to assess the risk of developing a wide range of medical conditions. For each of the following, please indicate how willing you would be to take a genetic test to determine your risk for developing any of these medical conditions.

	VERY WILLING	SOMEWHAT WILLING	NOT WILLING	NO ANSWER
Heart Disease	40%	37%	20%	3%
Cancer (Any Type)	39%	37%	22%	2%
Alzheimer’s Disease	36%	39%	23%	2%
Diabetes	34%	38%	24%	4%
Parkinson’s Disease	33%	38%	25%	4%
Multiple Sclerosis	29%	39%	28%	4%
Asthma	24%	35%	37%	4%

Legislative action helpful— but even more protection wanted: New legal protection under the Genetic Information Non-discrimination Act has increased consumers comfort level with genetic testing, but consumers still want additional issues addressed.

The Genetic Information Nondiscrimination Act or GINA, which President Bush recently signed into law, makes it illegal for employers and health insurance providers to discriminate based on a person’s genetic code. Yet, only just over a quarter of respondents (28 percent) said the passage of GINA made it significantly more likely (7 percent) or somewhat more likely (21 percent) that they would undergo genetic testing. A total of 68 percent said the passage of the law would have no effect on their decision to get a genetic test.

While consumers broadly supported provisions in GINA that prohibited health insurance providers from using genetic information to deny benefits or raise premiums on individual policies, consumers were divided over other provisions. Repsondents were divided as to whether health insurance companies should be permitted to ask individuals to take genetic tests that could lead to preventative therapies respondents were divided.

Similar consumers were divided on a provision that protects employers from lawsuits stemming from insurance company violations of the bill and places a \$300,000 limit on damages for individuals who have faced job discrimination due to genetic information, although they tended to favor these provision slightly.

They did have much stronger feelings about GINA not going far enough in extending protections against genetic discrimination to include the areas of life and disability insurance. A total of 79 percent considered such protections as either very important (50 percent) or somewhat important (29 percent), and said that such protection should be provided in future legislation.

Q: Here is a list of provisions included in the Genetic Information Nondiscrimination Act (GINA). Please rate on a scale from 1 to 10 how strongly you agree with each of the following, where 1 means you Strongly Oppose and 10 means you Strongly Agree.

PROVISIONS	MEAN (SD)	STRONGLY OPPOSE					STRONGLY AGREE					No Answer
		1	2	3	4	5	6	7	8	9	10	
Health insurance providers are prohibited from using genetic information to deny benefits or raise premiums for individual policies	8.4 (2.7)	3%	1%	2%	3%	6%	2%	2%	6%	7%	65%	2%
Health insurance companies are permitted to ask individuals to take genetic tests they believe could lead to preventive therapies	5.2 (3.3)	23%	5%	5%	3%	13%	7%	11%	11%	5%	13%	2%
Employers are protected from lawsuits stemming from insurance company violations of the bill	6.3 (3.5)	15%	3%	5%	3%	13%	5%	5%	8%	9%	31%	3%
Individuals who are found to have faced job discrimination due to genetics will be allowed to sue for up to \$300,000 in damages, depending on the employer's size	6.8 (3.3)	11%	3%	4%	3%	13%	4%	7%	11%	6%	36%	3%

About the The Personalized Medicine and Wellness Survey

The Personalized Medicine and Wellness Survey is a joint project of Burrill & Company and ChangeWave Research. The survey, conducted through ChangeWave's proprietary network between May 27 and May 30, 2008, is based upon responses from 550 consumers. These results represent the first part of a three-pronged benchmark personalized medicine and wellness survey that is being undertaken by Burrill & Company. Companion surveys of physicians and industry professionals will be joined with this study for the final report, which will be made available this summer.

The Burrill & Company/ChangeWave Research Survey

The Burrill & Company/ChangeWave Research Survey are an ongoing series of regular surveys that capitalizes on Burrill's expertise in the life sciences and ChangeWave's proprietary network of business, technology and medical professionals. Burrill publishes the Personalized Medicine Report and sponsors an annual Personalized Medicine meeting. The two also provide custom survey's to the pharmaceutical, biotech and medical device industry. For information about this, please contact Peter Winter at Burrill & Company (415) 591-5474 or pwinter@b-c.com



Founded in 1994, Burrill & Company is a San Francisco-based global leader in life sciences with activities in Venture Capital, Private Equity, Merchant Banking and Media. The Burrill family of venture capital funds has over \$950 million under management and its merchant banking business is one of the industry leaders in life sciences transactions.

Burrill is also the creator, sponsor and facilitator of over a dozen leading industry conferences worldwide and publishes a wide range of bio-intelligence reports. Burrill's flagship publication is its annual State of the Industry report, the 22nd Edition is entitled Biotech 2008: Life Sciences—A 20/20 Vision to 2020.

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ChangeWave runs a proprietary network of more than 15,000 highly qualified business, technology, and medical professionals in leading companies of select industries—credentialed experts who spend their everyday lives working on the frontline of technological change. ChangeWave surveys its members on a range of business and investment research topics, collects feedback from them electronically, and converts the information into quantitative and qualitative reports. It has assembled its membership team from senior technology and business executives in leading companies of select industries. Nearly 3 out of every 5 members have advanced degrees and 93 percent have at least a four-year bachelor's degree. The business and investment intelligence provided by the Alliance provides a real-time view of companies, technologies and business trends in key market sectors, along with an in-depth perspective of the macro economy—well in advance of other available sources.

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