

When Should Judges Admit or Compel Genetic Tests?

Diane E. Hoffmann and Karen H. Rothenberg

During the past two decades, the use of DNA tests has revolutionized court proceedings in criminal and paternity cases. The tests' availability has arguably eliminated the need for "judging" as the tests provide virtually conclusive evidence of identity. On the horizon is a new challenge for judges—whether to admit or compel genetic tests to confirm or predict genetic diseases and conditions in other judicial contexts, including decisions regarding culpability, sentencing, liability, causation, and damages. Although the bulk of these new uses of genetic tests are in the torts area (1, 2), their use has also been reported or proposed in criminal, family law, employment, and discrimination cases (3).

In civil cases, courts may compel a genetic test pursuant to Rule 35 of the Federal Rules of Civil Procedure or comparable state law. Rule 35 allows a court to order physical or mental examinations if the person subject to examination has placed her mental or physical condition "in controversy" and if "good cause" exists for the examination. "Good cause" depends on relevance and need, including whether the information may be obtained by other means. In personal injury actions, failure to comply with an order for a medical exam may result in dismissal of the case.

In criminal cases, a request to compel a saliva sample for purposes of genetic testing has been determined to constitute a search under the Fourth Amendment. Such searches must be reasonable, i.e., strike a balance between individual privacy interests and law enforcement needs.

Sometimes, the test result may already exist as a result of medical care, and the judge must decide whether to admit the information. In addition to meeting the standard for admissibility of scientific evidence in a given jurisdiction, the evidence must be relevant (make some fact that is of consequence to the outcome of the case more or less probable). The probative value of a genetic test result may depend on a variety of factors, including the accuracy

and reliability of the test, the penetrance of the gene, the severity of the disease, and the impact of environmental causes. Even relevant evidence may be excluded, however, if the judge concludes that its admission risks inflaming or confusing the jury, is cumulative of other evidence, or would unduly delay the case.

To better understand judicial perspectives about the value of genetic information, we conducted a survey of all trial court judges (state and federal) in Maryland. Among other questions, judges were given

Four hypotheticals involved civil cases: two in the context of causation for tort liability and two involving determination of damages. In the causation cases, the defendant sought to have the judge compel a genetic test to show that the plaintiff's developmental disabilities were due to a genetic defect rather than the defendant's negligence. The first was a malpractice case against an obstetrician for a birth injury. The second was a toxic torts case against a solvent manufacturer in which the genetic condition manifested only as a result of having both a gene mutation and exposure to a chemical solvent. In both cases the injured parties were children.

In the first damage case, the defendant asked the judge to compel the plaintiff to have a genetic test for neurofibromatosis type 2 (NF2), which would significantly shorten the plaintiff's life expectancy and thus the amount the defendant would be required to pay in damages. In the second

NUMBER OF RESPONSES TO SURVEY QUESTIONS – RAW DATA*

Survey question	State judges		Federal judges	
	Yes	No	Yes	No
Criminal cases				
Admit genetic test for schizophrenia?	50	42	5	8
Compel genetic test for condition leading to bouts of rage?	17	75	2	11
Civil tort cases: Causation				
Compel test for Fragile X syndrome?	77	14	9	3
Compel test for complex genetic condition caused by combination of environmental and genetic factors?	65	26	10	3
Civil tort cases: Damages				
Compel test for neurofibromatosis type 2?	39	50	5	8
Admit test for pain?	73	16	8	5

*Not all judges responded to each question.

several hypothetical cases and asked whether they would admit or compel a genetic test in a variety of scenarios (4). The hypotheticals (some based on actual cases) (5–8) were designed to glean information about the importance of different contextual factors, including whether the request was to admit or compel, the purpose of the information, and the characteristics of the genetic condition and test.

Two hypotheticals were based on criminal cases. Respondents were first asked whether they would admit a positive genetic test for schizophrenia to establish that the defendant did not have the necessary criminal intent (*mens rea*) to commit the crime. Respondents were also asked whether, in a sentencing proceeding, they would compel a test for a condition that predisposes an individual to bouts of rage (proclivity to "future dangerousness").

damage case, the plaintiff requested that the judge admit a genetic test to show that he had a heightened sensitivity to pain and thereby potentially increase his damage award. In each case, respondents were asked, assuming the relevant scientific evidentiary standard had been met, whether they would admit or compel the test. If they answered no, they were asked to provide the reasons for their decision.

Of 140 state trial court judges in Maryland, 101 responded to the written survey and 16 of the 25 federal district court judges in the state responded. After the results were tabulated, we met with groups of judges in five of the state circuits and the federal district court to share our findings and to solicit their reactions (see table, above).

The judges were almost equally divided on whether they would admit a positive test for schizophrenia in a criminal case to dis-

The authors are at the University of Maryland School of Law, Baltimore, MD 21210, USA.

*Author for correspondence. E-mail: dhoffman@law.umaryland.edu

prove *mens rea*. Several described this as a “gray area” where the ultimate question would be whether the information would be more prejudicial than probative. The judges differed on how a jury would interpret the test result: some thought a jury would give it more weight than it deserves; others felt that an expert could help jurors interpret the test results.

A large majority of judges said they would not compel a genetic test for a condition leading to bouts of rage in a criminal sentencing. Respondents felt that the test was an “inexact” instrument that could brand someone for life and would be especially stigmatizing in the context of mental health. A few judges, however, argued that because the defendant had been convicted, his privacy interest was already diminished. Furthermore, they reasoned, because judges must assess risk, this information might assist them in predicting future dangerousness, especially when the defendant has no prior criminal record.

In contrast to the criminal cases, the large majority of judges in the civil cases for tort liability would compel a test to establish that the defendant’s negligence was not the cause of the plaintiff’s injury. The judges reasoned that since the plaintiff’s health was at issue, the defendant had a right to use this information to show that it was the plaintiff’s genetic condition that caused the injury. Moreover, they commented that the test was being used to confirm a diagnosis, not for prediction, and that compelling medical tests in these circumstances was well established.

In the first torts case involving damages, the judges were almost evenly divided on whether they would compel a genetic test for neurofibromatosis for an asymptomatic 21-year-old plaintiff with a family history of NF2. Reasons for not compelling the test varied but focused on the psychological impact of predictive testing in the context of a damage calculation. Some judges indicated that a jury would have difficulty understanding the information; others, however, felt that life tables could be used with an instruction about the meaning of the test. Those troubled by compelling the test raised the specter of predictive tests being used for breast cancer, heart disease, or other late-onset disorders. Some judges, in contrast, commented that they might admit predictive information in some cases, for example, when the plaintiff smokes and statistically has a reduced life expectancy.

The majority of judges agreed to admit, at the plaintiff’s request, a positive genetic test for heightened sensitivity to pain. A few judges thought it would be very helpful to have an “objective” test for pain. Others said they were more likely to admit

a test than to compel one. The few who would not admit the test expressed concern that the “test was not sufficiently predictive” or that the jury would weigh the test result inappropriately.

In sum, while many of the judicial respondents recognized the complexity of these decisions, these cases raise new challenges for judges. In addition to the concerns raised by respondents about relevancy and juror understanding, these genetic tests have impacts that are distinct from genetic tests used only for purposes of identity. Many genetic tests for health and behavioral traits have the potential to predict diseases and conditions that have no prospect of treatment or cure, as well as the ability to affect both family members and individuals. We therefore recommend that judges scrutinize the admitting or compelling of each of these new tests in the context in which its use is proposed. This scrutiny is particularly important because, if compelled, individuals and their families are forced to obtain genetic information without consent. Furthermore, for those individuals who have chosen to be tested in a medical setting, the informed consent process for genetic testing does not currently take into consideration the risk that genetic information may be admitted in future court proceedings.

We encourage judges to be cautious and to consider the following when evaluating the need for genetic information in legal cases:

1) What is the evidentiary context? Is it to admit or compel the test? Is it a civil or criminal case? Is it being requested by the prosecution or the defense or the plaintiff or defendant? Whereas a decision to admit requires an understanding of the scientific value of the test in the context of a specific case, a request to compel deserves elevated scrutiny in light of the involuntary nature and psychological impact of the testing. Moreover, given the potential constitutional infringement and impact on individual liberty, requests by a prosecutor to admit or compel a test in a preconviction criminal case should require a higher showing of “need” and “probative value” before the request is granted.

2) What is the nature of the genetic condition at issue? Is it a mental or physical condition? Is it congenital or late onset? How serious are the symptoms? Is there a cure or treatment? Information regarding a mental condition may raise heightened concerns about privacy and stigma, whereas information about the possibility of developing a serious, incurable disease in the future may have a serious psychological impact on an individual or their relatives who may not wish to know their own

genetic status. Furthermore, if the party to be tested is a child, unable to provide informed consent, additional consideration should be given to the psychological impact and stigma associated with disclosure of the information.

3) How predictive is the test for the genetic condition? Is the condition caused by a single gene mutation or is it a more complex disorder resulting from interaction between gene mutations and environmental factors? For a late-onset disease, use of the test for predictive purposes requires greater caution as, for most complex genetic disorders, the test will only indicate that an individual has a susceptibility to a disease; it will not be determinative. Even if a test indicates that someone has a high probability of developing the genetic disease or condition, it cannot be used to determine the age at which someone will exhibit symptoms or the seriousness with which the condition will manifest. Moreover, although a positive genetic test may not rule out negligence or environmental factors as the cause of a developmental disability, it may change the damage calculation in torts cases and challenge the ability of medical experts and scientists to determine the degree of damage attributable to different causes.

4) What are the social policy implications of judges routinely compelling or admitting health-related genetic tests? Will this impact the willingness of individuals to obtain beneficial genetic tests in the health care setting or participate in genetic research? Will it validate claims of genetic determinism and contribute to the development of an unintended social norm regarding the meaning of genetic makeup?

In conclusion, decision-making in these cases will be complex and will require judges to simultaneously consider multiple factors. We hope that these recommended questions for consideration will provide guidance to judges as they are increasingly asked to decide whether to admit or compel this new generation of genetic tests.

References and Notes

1. See, e.g., A. S. Niedwiecki, *Univ. of San Francisco L. Rev.* 34, 295 (2000).
2. G. E. Marchant, *Seton Hall L. Rev.* 31, 949 (2001).
3. See, e.g., D. K. Casey, *Judicature* 83, 105 (1999).
4. The full text of the questions are available as supporting material on *Science Online*.
5. *Bennett v. Fieser*, No. 93-1004-MLB, 1994 U.S. Dist. LEXIS 4050 (D. Kan. 25 February 1994).
6. *Harris v. Mercy Hospital*, 231 Ill. App. 3d 105; 596 N.E. 2d 160 (1992).
7. *Wintz v. Northrop Corp.*, 110 F.3d 508 (7th Cir. 1997).
8. *Mobley v. State*, 265 Ga. 292, 455 S.E. 2d 261 (Ga. 1995).

Supporting Online Material

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