on the other offenses, we vacate all of the sentences and remand for resentencing.

Convictions affirmed; sentences vacated; remanded for resentencing.

NADEAU, J., concurred; MURPHY, C.J., and SMITH and GALWAY, JJ., superior court justices, specially assigned under RSA 490:3, concurred.

[redacted]

Concord District Court
No. 99-510

THE STATE OF NEW HAMPSHIRE

v.

MICHAEL DAHOOD

Submitted: August 27, 2002
Opinion Issued: December 20, 2002

[redacted]

[redacted]

Philip T. McLaughlin, attorney general (*Constance N. Stratton*, assistant attorney general, on the brief and orally, and *Brian M. Quirk* and *Jeffery A. Strelzin*, assistant attorneys general, on the supplemental memorandum), for the State.

Jenifer Bensinger Ackerman, assistant appellate defender, of Concord, and *Carl Olsen*, assistant appellate defender, of Littleton (*Ms. Ackerman* on the brief, and *Mr. Olsen* orally, and *Albert E. Scherr* and *Keith Barnaby*, of Concord, on the supplemental memorandum), for the defendant.

Kerry P. Steckowych, of Goffstown, and *George E. Wattendorf*, of Dover, on the brief, for the New Hampshire Association of Chief's of Police, Inc., as *amicus curiae*.

DALIANIS, J. The defendant, Michael Dahood, appeals his conviction for driving while under the influence of intoxicating liquor, second offense, *see* RSA 265:82-b (1993 & Supp. 2002), following a jury trial in the Concord District Court. The sole issue presented on appeal is whether the Horizontal Gaze Nystagmus (HGN) test, as administered in New Hampshire, is admissible at trial. We hold that the test is admissible and affirm the defendant's conviction.

This is the second time this case has reached us on appeal. *See State v. Dahood*, 143 N.H. 471 (1999) (*Dahood I*). In discussing the facts of this case, we incorporate by reference the underlying facts detailed in our earlier opinion.

In *Dahood I*, we reversed the defendant's conviction for driving while under the influence of intoxicating liquor, second offense, on the ground that the State improperly introduced expert testimony regarding the defendant's estimated blood alcohol concentration (BAC) level and remanded the case for a new trial. *See Dahood I*, 143 N.H. at 475. On remand, the defendant filed a motion *in limine* to exclude all testimony concerning the HGN test unless the State first laid a proper foundation for the admission of such evidence. Specifically, the defendant requested that the court hold a preliminary hearing to determine whether the HGN test is reliable for purposes of New Hampshire Rule of Evidence (Rule) 702.

The Concord District Court (*Robbins*, J.) denied the defendant's motion and, instead, took judicial notice of the reliability of the HGN test.

At trial, the court allowed New Hampshire State Trooper Steven Puckett, the arresting officer, to testify as to the defendant's performance on the field sobriety tests, including the HGN test. Trooper Puckett testified that he administered several field sobriety tests, including the HGN test, and that the defendant failed each test. With respect to the HGN test, Trooper Puckett stated that the defendant "had [a] lack of smooth pursuit in both eyes . . . [and] a moderate to severe nystagmus at the maximum deviation. In other words, when the eye was all the way over it was bouncing. And that he had an onset of nystagmus at a predetermined location."

The defendant was subsequently convicted of driving while under the influence of intoxicating liquor, second offense. On appeal, he argued that the trial court erred by taking judicial notice of the reliability of the HGN test and that the State should be required to establish the test's reliability under Rule 702. Because we could not conclude from the record whether the HGN test, as administered in New Hampshire, is scientific evidence, we remanded the case to the trial court, but retained jurisdiction. *State v. Dahood*, No. 99-510 (N.H. June 5, 2001). We ordered the district court to hold an evidentiary hearing to determine whether the HGN test incorporated scientific principles within the meaning of Rule 702 and, if so, whether the test is reliable under the Rule. *Id.*

Upon remand, the parties stipulated that the HGN test incorporates scientific principles within the meaning of Rule 702 and that the court should determine the test's admissibility using the legal standard set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). In addition, the parties stipulated that the evidence regarding the HGN test was not to be used to calculate a defendant's specific BAC level. Following a five-day evidentiary hearing at which both parties introduced detailed expert testimony and exhibits, the court concluded that the HGN test as administered in New Hampshire is not reliable for purposes of Rule 702 and, therefore, is inadmissible as evidence of the defendant's intoxication. The court ruled, however, that HGN evidence may be admitted to establish probable cause to arrest. The parties thereafter filed supplemental memoranda in this court addressing the district court's ruling as to the first issue.

I. Standard of Review

Generally, we review the trial court's rulings on evidentiary matters, including those regarding the reliability of novel scientific evidence, with considerable deference, and will reverse the court's decision only if its

exercise of discretion is unsustainable. *State v. Hungerford*, 142 N.H. 110, 117 (1997); *see also State v. Lambert*, 147 N.H. 295, 296 (2001) (explaining unsustainable exercise of discretion standard). When the reliability or general acceptance of novel scientific evidence is not likely to vary according to the circumstances of a particular case, however, we review that evidence independently. *Hungerford*, 142 N.H. at 117; *see also State v. Vandebogart (DNA)*, 136 N.H. 365, 376 (1992). The defendant argues that we must review the trial court's decision under the deferential standard set forth in *Hungerford*. Specifically, he argues that HGN evidence is less like forensic DNA evidence, to which we have applied *de novo* review, *see Vandebogart (DNA)*, 136 N.H. at 376, and more like repressed memory syndrome evidence, to which we have applied deferential review, *see Hungerford*, 142 N.H. at 126. We disagree.

"The level of scrutiny we employ in our reliability inquiry will depend upon the complexity of the evidence involved and the impact the evidence likely will have on the trial itself." *Id.* at 117; *see Vandebogart (DNA)*, 136 N.H. at 376 (stating that question of whether scientific theory and technique are reliable and generally accepted does not vary according to the circumstances of each case). In *Hungerford*, our inquiry into repressed memory evidence was not purely a question of admissibility of scientific or expert evidence, but also one of witness competency. *See Hungerford*, 142 N.H. at 118. In contrast, our examination in *Vandebogart* of the reliability of DNA evidence was an inquiry as to scientific reliability only. Consequently, because the reliability of the scientific theory and technique underlying forensic DNA testing would not vary in each individual case, we reviewed the admissibility of such evidence *de novo*. *See Vandebogart (DNA)*, 136 N.H. at 376. Because the scientific reliability of the HGN test should not vary according to the circumstance of each case, *cf. State v. Garrett*, 811 P.2d 488, 490 (Idaho 1991), we review its scientific reliability independently and make our own determination, without regard to the findings of the trial court. *See Vandebogart (DNA)*, 136 N.H. at 376.

II. New Hampshire Rule of Evidence 702

We review the admissibility of HGN testing in this case under Rule 702, in accordance with the principles set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). *See Baker Valley Lumber v. Ingersoll-Rand*, 148 N.H. 609 (2002). Rule 702 provides: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." N.H. R. Ev. 702.

In *Baker Valley*, we adopted the following four factors of the *Daubert* test: (1) whether a theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential error rate of a particular technique; and (4) whether the theory or technique has been generally accepted in the relevant scientific community. *Baker Valley*, 148 N.H. at 614. When analyzing the known or potential error rate of a particular scientific technique, *Daubert* also provides that the court should consider "the existence and maintenance of standards controlling a scientific technique's operation." *Daubert*, 509 U.S. at 594. We did not apply this aspect of the known or potential error rate factor in *Baker Valley* because it was not relevant to those proceedings. Nonetheless, because the existence and maintenance of standards governing HGN testing is at issue here, we will consider this additional aspect when analyzing the reliability of the HGN test under Rule 702.

In summarizing the analytical framework of *Daubert*, the United States Supreme Court explained that:

> The inquiry envisioned by Rule 702 is ... a flexible one. Its overarching subject is the scientific validity — and thus the evidentiary relevance and reliability — of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.

Daubert, 509 U.S. at 594-95. Importantly, the *Daubert* test does not stand for the proposition that scientific knowledge must be absolute or irrefutable. *State v. Vandebogart*, 139 N.H. 145, 156 (1994). The Court acknowledged that "it would be unreasonable to conclude that the subject of scientific testimony must be known to a certainty; arguably, there are no certainties in science." *Daubert*, 509 U.S. at 590 (quotations omitted). Rather, the Court stated that the proposed scientific testimony "must be supported by appropriate validation — *i.e.*, good grounds, based on what is known." *Id.* (quotations omitted). Indeed, we have recognized that evidence does not have to be infallible to be admissible. If it is of aid to a judge or jury, its deficiencies or weaknesses are a matter of defense, which affect the weight of the evidence but do not determine its admissibility. *State v. Arsenault*, 115 N.H. 109, 111 (1975). Thus, provided the profferred scientific evidence rests on sound scientific reasoning or methodology and properly can be applied to the facts in issue, it meets the requirements of Rule 702, even if the conclusion is novel or controversial. *See State v.*

O'Key, 899 P.2d 663, 678 (Or. 1995) (interpreting Federal Rule of Evidence 702 under *Daubert* test).

III. HGN Testing

"The HGN test is one of several field sobriety tests recommended by the National Highway Traffic Safety Administration to aid officers in determining whether a driver is intoxicated." *City of Fargo v. McLaughlin*, 512 N.W.2d 700, 703 (N.D. 1994). It was designed to detect whether a person's eyes demonstrate nystagmus under certain conditions. *O'Key*, 899 P.2d at 673. Nystagmus is a well-known physiological phenomenon that has been defined as the involuntary rapid movement of the eyeball, which may be horizontal, vertical, rotary or mixed. *State v. Ito*, 978 P.2d 191, 196 (Haw. Ct. App. 1999). HGN, specifically, is the "involuntary, rapid oscillation of the eyes which occurs when a person looks to the side at an object, and is characterized by an involuntary pendular (back and forth) jerking movement of the eye. Stated differently, HGN is an inability of the eyes to maintain visual fixation as they are turned from side to side (in other words jerking or bounding)." *O'Key*, 899 P.2d at 673 (citations, quotations and brackets omitted). "The theory behind the gaze nystagmus test is that there is a strong correlation between the amount of alcohol a person consumes and the angle of onset of the nystagmus." *City of Fargo*, 512 N.W.2d at 703-04; *see O'Key*, 899 P.2d at 674 (HGN is premised on general proposition that the automatic tracking mechanisms of the eyes are affected by alcohol).

> The HGN test is based on the observation of three different physical manifestations which occur when a person is under the influence of alcohol: (1) the inability of a person to follow, visually, in a smooth way, an object that is moved laterally in front of the person's eyes; (2) the inability to retain focus and the likelihood of jerking of the eyeball when a person has moved his or her eyes to the extreme range of peripheral vision; and (3) the reported observation that this jerking of the eyeball begins before the eye has moved 45 degrees from the forward gaze if the individual's BAC . . . is .10 percent or higher.
>
> The only equipment needed to administer the HGN test is a stimulus, such as a pen, penlight, or the officer's finger. The stimulus is positioned about twelve to fifteen inches in front of a suspect's eyes. As the officer gradually moves the stimulus towards the suspect's ear and out of the suspect's field of vision, the officer observes the suspect's eyeballs to detect three signs of intoxication: an angle of onset of nystagmus (measured from the

> suspect's nose) of forty-five degrees or less; distinct or pronounced nystagmus at the eye's maximum horizontal deviation; and the inability of the eyes to smoothly pursue the stimulus.

Ito, 978 P.2d at 197 (citations, quotations and brackets omitted).

Many factors other than alcohol, however, can cause nystagmus, such as problems in an individual's inner ear labyrinth; physiological problems such as influenza and epilepsy; eye muscle fatigue, sunstroke, or glaucoma; and the consumption of substances such as caffeine or nicotine. *Id.* at 196. Nevertheless, "it has been well-documented through research studies over the years that alcohol intoxication affects eye movement and nystagmus becomes more pronounced with alcohol consumption." *Id.* at 197; *see Emerson v. State*, 880 S.W.2d 759, 766 (Tex. Crim. App. 1994). HGN testing has been used by law enforcement in all fifty States, and its characteristics, theory, and scientific acceptability have been the subject of many articles and judicial opinions. *Hawkins v. State*, 476 S.E.2d 803, 807 (Ga. Ct. App. 1996).

The issue of the admissibility of HGN test results as circumstantial evidence of intoxication has been scrutinized repeatedly in numerous cases, of which appellate review began as early as 1985. *See, e.g., Ballard v. State*, 955 P.2d 931 (Alaska Ct. App. 1998); *State v. Superior Court*, 718 P.2d 171 (Ariz. 1986); *People v. Joehnk*, 42 Cal. Rptr. 2d 6 (Ct. App. 1995); *Schultz v. State*, 664 A.2d 60, 65 n.4 (Md. Ct. Spec. App. 1995) (appellate courts began determining HGN admissibility as early as 1985); *State v. Baue*, 607 N.W.2d 191 (Neb. 2000); *State v. Hullinger*, 649 N.W.2d 253 (S.D. 2002). The seminal case addressing the admissibility of HGN test results at trial is *State v. Superior Court*. *See, e.g., State v. Taylor*, 694 A.2d 907, 911 (Me. 1997); *City of Fargo*, 512 N.W.2d at 704. In that case, the Arizona Supreme Court, after considering expert testimony, treatises, articles and empirical studies, concluded that HGN testing satisfied the *Frye* standard for admissibility because the test had gained general acceptance in the relevant scientific community. *State v. Superior Court*, 718 P.2d at 181; *cf. Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923). The court cautioned, however, that the HGN test results would not be admissible to quantify a driver's specific BAC level at trial. *State v. Superior Court*, 718 P.2d at 181.

Since that decision, courts around the country have addressed the issue of the admissibility of HGN testing at trial as circumstantial evidence of a driver's intoxication. In a minority of jurisdictions, courts have held that HGN testing is not scientific at all, but rather is similar to other field sobriety tests and is based upon a police officer's personal observations of a driver's physical characteristics. *See, e.g., State v. Murphy*, 451 N.W.2d

154, 157 (Iowa 1990); *State v. Sullivan*, 426 S.E.2d 766, 769 (S.C. 1993). In those jurisdictions in which HGN testing is considered scientific, however, a majority of courts have held that HGN testing is admissible in criminal trials as circumstantial evidence of intoxication. *E.g.*, *Ballard*, 955 P.2d at 940 (HGN testing satisfies *Frye* standard of admissibility); *Joehnk*, 42 Cal. Rptr. 2d at 12 n.3; *Zimmerman v. State*, 693 A.2d 311, 314 (Del. 1997); *Williams v. State*, 710 So. 2d 24, 32 (Fla. Dist. Ct. App. 1998); *Hawkins*, 476 S.E.2d at 808; *Taylor*, 694 A.2d at 911-12 (taking judicial notice of HGN reliability); *State v. Clark*, 762 P.2d 853, 856-57 (Mont. 1988); *Baue*, 607 N.W.2d at 204; *O'Key*, 899 P.2d at 687 (applying *Daubert* test); *Hullinger*, 649 N.W.2d at 256-58 (citing cases); *Emerson*, 880 S.W.2d at 768-69; *State v. Baity*, 911 P.2d 1151, 1159 (Wash. 2000).

These cases, like *State v. Superior Court*, hold that the results of HGN testing are admissible for a limited purpose, and may not be used to establish a BAC level at trial. *See, e.g.*, *Ballard*, 955 P.2d at 940; *Baue*, 607 N.W.2d at 204. The courts have stated that HGN testing is not sufficient to establish intoxication, but is merely a factor, along with other field sobriety tests, to be considered when determining whether a driver is intoxicated. *Ballard*, 955 P.2d at 940; *People v. Wiebler*, 640 N.E.2d 24, 27 (Ill. App. Ct. 1994).

IV. Daubert Application

Having reviewed the expert testimony in conjunction with the wealth of case law from around the country, we conclude that HGN evidence is admissible under New Hampshire Rule of Evidence 702 and *Daubert* for the limited purpose of providing circumstantial evidence of intoxication.

A. Whether the theory or technique can be and has been tested

First, the theory underlying the HGN field sobriety test, and the validity of the HGN test, can be and have been tested. "Numerous ... reports of both field tests and laboratory investigations and studies concerning the HGN test are published in the legal, medical, and optometric fields." *O'Key*, 899 P.2d at 682.

At the evidentiary hearing, the State introduced as one of its two expert witnesses, Doctor Marcelline Burns. Doctor Burns, a research psychologist and one of the founders of the Southern California Research Institute (Institute), has spent most of her career studying the effects of alcohol and drug use on human performance, with an emphasis on driving performance.

Doctor Burns testified that beginning in 1975, she and other researchers at the Institute began conducting research for the NHTSA into the development of a group of field sobriety tests, including HGN, that officers could perform at the roadside. Following the initial laboratory research in

1977, the Institute published a report recommending three field sobriety tests to be used by law enforcement: the one-leg stand test, the walk-and-turn test, and the HGN test. Further studies were conducted into the HGN test in 1981 that involved both laboratory and field research, and three separate field studies were conducted in the 1990s.

In terms of the accuracy of Doctor Burns' studies, it was determined that police made the correct arrest decision regarding the suspect's BAC level approximately 76% of the time during the 1977 studies. The percentage of correct arrest decisions rose to approximately 95% in the later studies.

Another State expert, Doctor Jack Richman, an optometrist, also performed a study in 1994 concerning the effect of alcohol on eye movements. Doctor Richman has extensive training in the HGN test, and has consulted for numerous law enforcement agencies on the proper instruction required to administer the HGN test. He testified that the purpose of his 1994 study was to instruct new police officers on how to properly administer the HGN test and evaluate nystagmus. He stated that officers were correct approximately 87% of the time in predicting that individuals who failed the HGN test had BAC levels at or above .08. There was some criticism at the hearing of the reliability and validity of the studies conducted by Doctors Burns and Richman. This criticism, however, does not obviate the fact that the underlying theory and validity of the HGN test can be and have been tested.

B. Whether the theory or technique has been subjected to peer review and publication

Second, "there is extensive scientific literature dating back to the 1950s that thoroughly examines and critiques the HGN test and the theory underlying that test — that there is a strong correlation between the amount of alcohol a person consumes and the onset of nystagmus." *State v. Ruthardt*, 680 A.2d 349, 357 (Del. Super. Ct. 1996); *see O'Key*, 899 P.2d at 684; *State v. Superior Court*, 718 P.2d at 182-84. Thus, the HGN test has been thoroughly scrutinized by the relevant scientific disciplines, and we conclude that the HGN test has been subjected to peer review and publication.

C. The known or potential error rate of a particular technique and the existence and maintenance of standards controlling the technique's operation

Third, we consider the known or potential error rate of HGN testing and the existence and maintenance of standards controlling HGN testing. Doctor Burns testified that when administered according to NHTSA standards, the HGN test is the most accurate and reliable of the three field

sobriety tests used, thereby rendering its rate of error lower than the other field sobriety tests.

Both defense experts testified that in their opinion, the known and potential error rates generated by the HGN test are too high. For example, it was established that the rate of incorrect decisions by officers for subjects who had a BAC level below the target level (false positives) in Doctor Burns' initial 1977 study was approximately 47%. The false positive rate dropped to 9% in the 1981 study, but rose to between 18% and 24% in later field studies. Doctor Joseph Rizzo, a neuro-ophthalmologist, testified that the level of statistical significance that is generally acceptable in the medical-scientific community is 5%, which means that there is only a 5% probability that the results presented have occurred by chance. Consequently, he testified that the false positive rates for HGN testing were too high, and that the HGN test is, therefore, not a good test.

The defense experts testified that the HGN test was unreliable because there were other causes for nystagmus that could cause false readings, and that officers could have difficulty administering the test properly in the field. The defense experts were concerned that if officers do not ask suspects preliminary medical questions prior to administering the HGN test, which is not required under the NHTSA manuals, HGN test results could be erroneous because they are produced by other medical causes. Further, the use of the maximum gaze component of the HGN test was criticized as an unreliable indicator of intoxication because approximately 50% of the general population exhibit nystagmus at maximum deviation. Both Doctor Burns and Doctor Joseph Citron, a defense witness who is an ophthalmologist, testified, however, that some forms of nystagmus that naturally occur would not be observable to an officer administering the HGN test and, therefore, would not lead to confusion over the results. Moreover, Doctor Rizzo testified that the most common cause of HGN is drugs and alcohol.

While concerns regarding false positive readings are no doubt valid, they do not undermine the scientific foundation of the HGN test: intoxicated people exhibit nystagmus, and a properly administered HGN test will detect the nystagmus. *City of Fargo*, 512 N.W.2d at 707. Concerns regarding false positive readings would apply equally to other field sobriety tests administered in the field, which are regularly admitted into evidence. *Id.* Since these factors can be explored through cross-examination or expert testimony offered at trial, they go to the weight of the HGN evidence rather than its admissibility. *Id.*; *Baity*, 991 P.2d at 1159.

Furthermore, standards controlling the HGN test do exist. *O'Key*, 899 P.2d at 684. Beginning in 1984, the NHTSA published a manual to teach police officers how to administer and evaluate the results of field sobriety tests, including the HGN test. *Id.* The manual, which was revised in 1995

and 2001, is used nationwide by law enforcement and has been the subject of "exhaustive testing and refinement." *Id.* Sergeant William Quigley testified at the hearing that New Hampshire police officers are trained to follow the exact procedures in the NHTSA manuals. Doctors Burns and Richman both testified that the methods set forth in the NHTSA training manuals are an appropriate way to teach an officer to administer and evaluate the HGN test. Even Doctor Citron agreed that HGN testing is a valuable screening test to detect nystagmus if performed correctly, and that he had observed officers perform the test correctly in the past.

There was evidence of the possibility that some officers do not receive proper training in HGN testing because all officers are not personally observed practicing the HGN test. It was also established that an officer could pass the field sobriety test program written examination without answering the HGN questions correctly. In addition, there is no requirement for police officers that were trained prior to the adoption of the HGN test to participate in HGN training.

While there is a plausible concern that some officers may not receive proper training in HGN, we disagree that this adversely affects the general admissibility of the HGN test. Rather, this concern generally goes to the weight of the evidence sought to be introduced. There could be circumstances, however, where a demonstrable lack of training affects the admissibility of the evidence. *See Ito*, 978 P.2d at 205 (any attacks on the accuracy of HGN test results or the administration of the test go to the weight of the evidence).

D. Whether there is general acceptance of the theory or technique in the relevant scientific community

Finally, we conclude that the theory and technique of HGN testing is generally accepted in the relevant scientific community. In *State v. Superior Court*, the Arizona Supreme Court determined that the appropriate disciplines that comprise the relevant scientific community include behavioral psychology, highway safety, neurology, and criminalistics. *See State v. Superior Court*, 718 P.2d at 180. Subsequently, the Oregon Supreme Court expanded the scope of the relevant scientific community to include pharmacology, ophthalmology and, to a lesser extent, optometry. *O'Key*, 899 P.2d at 686; *see Ruthardt*, 680 A.2d at 357 n.13.

Here, Doctor Burns, a research and behavioral psychologist, and Doctor Richman, an optometrist, testified that HGN testing, as it is utilized as a field sobriety test, is generally accepted in their scientific communities. While both defense experts were unwilling to agree that the HGN test is generally accepted in their scientific communities, they agreed nevertheless that HGN is an indicator of alcohol consumption and that the amount

of alcohol consumed will affect the amplitude of nystagmus. In addition, they both conceded that HGN has been correlated with certain blood alcohol levels. In fact, Doctor Citron agreed that the HGN test, when administered correctly, can detect whether a person is under the influence of alcohol, and that officers have administered the test correctly in the past. Further, while Doctor Rizzo was critical of the HGN test and its usefulness, he admitted that he had relatively little background in the HGN field sobriety test and did not discuss its application with others in his field.

Having reviewed the record in this case as well as the relevant case law, we conclude that the theory underlying HGN testing — that alcohol consumption causes nystagmus, and that a trained officer can detect such nystagmus — has gained general acceptance in the relevant scientific communities. *See, e.g., Joehnk*, 42 Cal. Rptr. 2d at 17; *Garrett*, 811 P.2d at 491; *City of Fargo*, 512 N.W.2d at 706; *O'Key*, 899 P.2d at 686. *But see State v. Witte*, 836 P.2d 1110, 1121 (Kan. 1992) (reliability of HGN evidence not settled in scientific community). Consequently, we find that the following principles have received general acceptance in the relevant scientific communities:

> (1) HGN occurs in conjunction with alcohol consumption; (2) its onset and distinctness are correlated to BAC; (3) BAC in excess of .10 percent can be estimated with reasonable accuracy from the combination of the eyes' tracking ability, the angle of onset of nystagmus and the degree of nystagmus at maximum deviation; and (4) officers can be trained to observe these phenomena sufficiently to estimate accurately whether BAC is above or below .10 percent.

State v. Superior Court, 718 P.2d at 181; *see O'Key*, 899 P.2d at 686.

Accordingly, we hold that the HGN field sobriety test satisfies the *Daubert* test of admissibility, and the results are admissible as circumstantial evidence of intoxication. We also hold that: 1) HGN results cannot be introduced at trial for the purpose of establishing a defendant's BAC level; and 2) the results are not sufficient alone to establish intoxication. *Baue*, 607 N.W.2d at 204; *Ballard*, 955 P.2d at 940. Finally, we note that under the doctrine of *stare decisis*, our decision today will be binding and, as a result, courts will not be required to establish the scientific reliability of the HGN test under New Hampshire Rule of Evidence 702 in future cases. *See Providence Mut. Fire Ins. Co. v. Scanlon*, 138 N.H. 301, 303-04 (1994) (explaining *stare decisis* doctrine).

V. Testimony at Trial

While HGN test results are admissible under the *Daubert* test, the proponent of such evidence must still present a qualified witness who can testify about the subject. *See Ballard*, 955 P.2d at 941.

[redacted] A majority of jurisdictions allow the police officer who administered and evaluated the HGN test to testify at trial regarding the test results, provided the proper foundation is established. *E.g.*, *Joehnk*, 42 Cal. Rptr. 2d at 18; *Taylor*, 694 A.2d at 912; *State v. Berger*, 551 N.W.2d 421, 424 (Mich. Ct. App. 1996); *Baue*, 607 N.W.2d at 205 (citing cases). These courts agree generally that to establish a proper foundation, the State must put forth evidence that the police officer who administered the HGN test is trained in the procedure and that the test was properly administered at that time. *See Taylor*, 694 A.2d at 912; *Berger*, 551 N.W.2d at 424; *Wiebler*, 640 N.E.2d at 27 (proper foundation should consist of describing officer's education and experience in administering HGN test and showing that officer correctly followed procedure). Since we have already determined that the scientific principles underlying the HGN test are reliable, a properly trained and qualified police officer may introduce the HGN test results at trial. *See Joehnk*, 42 Cal. Rptr. 2d at 18.

In light of our holdings above, we find no reversible error in the admission of HGN testing evidence at the defendant's trial. Accordingly, we affirm his conviction.

Affirmed.

BROCK, C.J., and BRODERICK and NADEAU, JJ., concurred.

[redacted]

Strafford
No. 2000-193

THE STATE OF NEW HAMPSHIRE

v.

LAWRENCE COOK

Argued: October 9, 2002
Opinion Issued: December 20, 2002

[redacted]