SESSION III

DEVELOPMENT AND EFFECTIVENESS OF THE DRUG EVALUATION AND CLASSIFICATION PROGRAM

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Upon successfully completing this session the student will be able to:

- State the origin and evolution of the Drug Evaluation and Classification program.
- Describe research and demonstration project results that validate the effectiveness of the program.
- State the impact of legal precedents established by case law.
- Correctly answer the "topics for study" questions at the end of this session.

A. Origin and Evolution of the Program

The Drug Evaluation and Classification program was developed by personnel of the Los Angeles Police Department (LAPD). The initial impetus for the program stemmed from the frequent encounters, by experienced traffic enforcement officers, with drivers who were clearly impaired but whose blood alcohol concentrations were very low or zero. The logical suspicion was that these drivers were under the influence of drugs other than alcohol. But obtaining convincing evidence to back up that suspicion was not easy. Occasionally, officers succeeded in having physicians examine their low BAC subjects, sometimes resulting in a medical diagnosis of drug influence. But medical personnel typically receive little or no training in the recognition of specific signs of drug impairment, particularly at street level doses; therefore, they often were unable or reluctant to offer a judgment about a subject's condition. As a result, many drivers who almost certainly were under the influence were not prosecuted or convicted.

Two LAPD sergeants were instrumental in organizing a program to help police officers develop the skills needed to perform their own assessments of drug-impaired drivers. One was Dick Studdard, a traffic officer, the other was Len Leeds, a narcotics officer. They undertook independent research by consulting with physicians, enrolling in relevant courses, studying text books and technical articles, etc. Also, they secured management level support within LAPD to continue and accelerate the research and development effort. With the assistance of many others, Sergeants Studdard and Leeds ultimately succeeded in developing a drug recognition program based on a three-step process:

STEP ONE
Verify that the subject is impaired, and verify that the subject's blood alcohol concentration is not consistent with the degree of impairment that is evident.

STEP TWO
Determine whether the impairment is drug or medically related (i.e. injury or illness).

STEP THREE
Use proven diagnostic procedures to determine the category (or combination of categories) of drugs that is the likely cause of the impairment.

In 1979, the drug recognition program received the official recognition of the LAPD.

Persons unfamiliar with drugs sometimes wonder why it is necessary to use an elaborate set of diagnostic procedures to point toward the likely category of drugs. At first glance, it might seem that the easily observable inconsistency between the subject's impairment and his or her BAC would be sufficient. In other words, if the subject is obviously impaired, and if the alcohol level in the subject's blood is not enough to account for that impairment, why not simply obtain a blood sample and analyze it for drugs? For several reasons, this simplistic approach would not work.

- The request for a blood or urine sample should be based on (at least) the strongest articulable evidence of drugs that is available. The mere inconsistency between BAC and observable impairment might not be deemed (by courts or by motor vehicle licensing agencies) as sufficient to justify the subsequent chemical

test. For example, it could be argued that the subject is ill or injured, or is simply very susceptible to the effects of even low doses of alcohol. It is preferable if the officer who initiates the chemical test for drugs can articulate a credible basis for believing that those drugs are present.

- The subject may simply refuse to submit to the test. Although that action might put the subject's driver's license in jeopardy of suspension or revocation, it also will deny the prosecution access to the scientific evidence of drug involvement. Conviction or acquittal in such a case may hinge on the officer's ability to submit detailed and convincing testimony concerning the signs pointing toward a specific category or categories of drugs.

- Chemical tests of blood or urine usually disclose only whether or not a particular drug was recently used. The chemical test cannot be relied upon to determine whether the drug was psychoactive in the subject at that time (i.e. whether the subject was "under the influence" of the drug, within the meaning of the law). The DRE is needed to establish the fact that the drug was indeed causing impairment.

- Analysis of blood (or urine) samples for "drugs" can be very expensive, and may require a large volume. Practical constraints require that the officer requesting the chemical analysis be able to point the laboratory technician toward the type of drugs most likely to be found in the sample.

- Several new and innovative methods for drug toxicological analysis are currently being researched. These include, but are not limited to, saliva and hair sampling. As these methods are accepted in the scientific community, they will be evaluated for incorporation into the DEC program.

- There is always the possibility that a person suspected of drug impairment is actually suffering from an illness or injury requiring medical attention. If the subject's sample is simply drawn for subsequent analysis, and they are not examined by someone qualified to recognize the presence -- or absence -- of symptoms of drug impairment, the medical problem may not be discovered until it is too late. DRE's take justifiable pride in the numerous instances where they have secured prompt medical care for persons initially suspected of drug abuse.

B. Evidence of Program Effectiveness

Proof of the effectiveness of the DEC program began to be accumulated from the very outset of the program. LAPD personnel demonstrated that they could conduct examinations that led directly to the conviction of drug impaired drivers and other drug law violators. They also demonstrated that they could train others to conduct these examinations successfully.

Scientific evidence that the examinations provide accurate indicators of drug categories began to be accumulated in the early 1980's. The National Highway Traffic Safety Administration sponsored a controlled, laboratory evaluation of the LAPD drug recognition procedures. The evaluation was conducted by researchers from Johns Hopkins University, assisted by senior

drug recognition experts from LAPD. The researchers recruited volunteers who agreed to consume a variety of drugs, and other substances, under the researchers' supervision. During each experimental session, each volunteer swallowed a "pill" and smoked a "cigarette". Subsequently, each volunteer was examined independently by four LAPD DREs.

The "pills" given to volunteers contained one of the following:

- a placebo (i.e. no drug at all)
- Secobarbital (a CNS Depressant)
- Valium (i.e. Diazepam -- another CNS Depressant)
- d-amphetamine (a CNS Stimulant)

The "cigarette" contained marijuana or a placebo (i.e. no drug) marijuana that either actually contained THC or from which the THC had been removed (i.e., a placebo).

No combinations of drug categories were administered to any volunteer on any session. That is, if a volunteer received a marijuana cigarette, then that volunteer received a placebo pill. If the volunteer received a "loaded" pill (i.e. with a drug), then his or her cigarette was a placebo. Some volunteers on some sessions received no drug at all i.e. both the "pill" and the "cigarette" were placebos.

Two different dose levels of marijuana, diazepam and d-amphetamine were used. That is, some of the marijuana cigarettes were "weak" and some were "strong". Similarly, some of the diazepam and d-amphetamine pills were "weak" and some "were strong". All of the secobarbital pills were "strong". Note: The "strong" dose levels were significantly weaker than the drugs typically abused by impaired drivers encountered by police officers.

A most important condition of this laboratory experiment was that neither the volunteers nor the LAPD officers knew what drugs the volunteers had received. Also, the DRE's were not allowed to "compare notes" concerning their examinations of the subjects. Each DRE conducted his or her examinations in a separate room, and each had to reach an independent judgment as to what category (if any) of drug was present.

The DREs' performance in the laboratory experiment was excellent. They correctly classified 95% of the placebos only subjects as "not impaired". Conversely, they correctly classified 98.7% of the subjects who received "strong" drug doses as "impaired". Furthermore they correctly identified the category of drugs for 91.7% of those "strong" dose subjects.

The DREs were less successful in identifying the volunteers who received "weak" drug doses. For example, they classified as "impaired" about one-third of the subjects who received "weak" marijuana cigarettes, and about one-sixth of those who received "weak" d-amphetamine pills. However, it is unlikely that those "weak" dose subjects would have been stopped by officers, if they actually had been driving.

NHTSA followed up the laboratory experiment by sponsoring a Field Validation Study, in Los Angeles. Arrangements were made to have an independent laboratory analyze blood samples drawn from persons actually arrested on suspicion of drug impaired driving. Any subject who was involved in a crash was excluded from the study, since injuries could have confounded the drug examination. Similarly, any subject who refused to submit to the blood test was excluded, since there would have been no way to substantiate or refute the DRE's conclusions.

Ultimately 173 suspected drug impaired drivers were included in the Field Validation Study. Each was examined by a DRE and subsequently provided a blood sample for analysis by the independent laboratory.

A number of important facts emerged from the Field Validation Study:

1. When a trained drug recognition expert concludes that a subject is under the influence of drugs, chances are very good that the subject actually has drugs in his or her body. Only one of the 173 subjects were found to have no alcohol or other drug. Only ten others were found to have alcohol only. Thus, 93.6% of the subjects were confirmed to have drugs other than alcohol in their bodies. Of the 173 subjects, 125, or 72%, had ingested two or more drugs other than alcohol.

2. Polydrug use is very common. Only 21% of the subjects had consumed one drug other than alcohol. The study found 47% had two drugs in their system other than alcohol. Also 25% had three or more drugs other than alcohol in their system. Among the more common combinations were the following:

   - Alcohol and PCP (23 subjects)
   - Alcohol and Cannabis (19 subjects)
   - Alcohol, PCP and Cannabis (18 subjects)
   - Cannabis and PCP (20 subjects)

3. The independent blood analyses confirmed the DREs' opinions in most cases. Overall, for more than nine out of ten subjects (92.5%), the blood test confirmed the presence of at least one drug category "predicted" by the DREs.

4. Confirmation rates varied among the categories, as follows:

Category	Percent Confirmed by Blood
PCP*	92%
Narcotic Analgesics	85%
Cannabis	78%
Depressants (other than alcohol)	50%
CNS Stimulants	33%

*Study data for PCP was collected when PCP was considered a DRE drug category.

5. The relatively low confirmation rates for CNS Depressants and CNS Stimulants may have been due to limitations in the laboratory rather than because of misjudgments

by the DREs. For example, the laboratory analyzed the blood only for the subcategories of Depressants known as the Barbiturates and the Benzodiazepines; there are many Depressant drugs that do not belong to those two groupings. In addition, the blood samples were not frozen prior to their shipment to the laboratory. Unfortunately, Cocaine continues to metabolize in unfrozen blood samples. Therefore, it is possible that in some samples obtained from Stimulant abusers, the Cocaine simply disappeared before the samples were analyzed.

In a study conducted in 1990, the Arizona Department of Public Safety's Central Regional Crime Laboratory compiled records of the toxicological analyses corresponding to DREs' opinions from 1987 to 1990. A total of 526 cases were analyzed showing that a laboratory confirmation rate of 86.5% had been achieved.

Numerous other states have conducted comparisons of laboratory analysis and DRE opinions, with the correlation rates generally exceeding 80%.

The overall conclusion of both the laboratory and field studies is that the Drug Evaluation and Classification program is a worthwhile tool for enforcement of drug-impaired driving. The tool is not 100% accurate, especially in a climate of polydrug use. However, it will furnish reliable evidence of the link between a particular subject and a particular category of drugs in more than a majority of cases.

C. Case Law Review

American courts employ either the *Frye* or *Daubert* Standard for determining the admissibility of scientific evidence. The Frye Standard is the traditional test for determining the admissibility of scientific evidence. The standard derives from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), a case involving the admissibility of the systolic blood pressure deception test (the precursor to today's polygraph test). Essentially, *Frye* courts admit new or novel scientific evidence only if the evidence is "generally accepted" in the "relevant scientific communities." The "general acceptance" standard does not require "unanimity of view." The Frye Standard does not apply to evidence that has passed from the stage of experimentation to reasonable demonstrability. This distinction makes sense because the purpose of requiring general acceptance is to ensure that a party cannot gain an unfair advantage by finding an obscure witness who will attest to obscure techniques or "junk science" without being subject to any kind of real scrutiny. The *Frye* general acceptance standard applies to methods and techniques only; it does not apply to pure expert opinion testimony based on training and experience. In other words, an expert's opinion itself need not be generally accepted. If the evidence is not new or novel, the evidence is admissible if it is sufficiently reliable to be relevant.

The DEC Program is receiving increasingly favorable attention in court. Courts in various states have ruled favorably on the program the DRE process. Some judges have held that the DRE examination procedures meet the Frye Standard for admissibility of "new" scientific

evidence, while others have ruled that the Frye Standard need not apply. The Frye Standard is set by the U.S. Supreme Court to govern the admissibility of "new" scientific evidence. In effect, these courts took judicial notice of the DEC Program, so that it is no longer necessary -- within the jurisdictions of those specific courts -- to introduce expert scientific testimony to secure the admissibility of the results of a drug influence examination.

Some of the courts which have rendered decisions are (1) the Municipal Court of the City of Tucson, County of Pima, State of Arizona (acting in "State of Arizona vs. Dayton Johnson and Samuel Rodriguez, et al.", numbers 90056865 and 90035883). The court ruled that the Frye Standard was met. This decision was appealed to the Arizona Supreme court which ruled that the Frye standard did not apply to the DEC Program. (2) the Municipal Court of Minneapolis,

State of Minnesota (acting in State of Minnesota, City of Minneapolis vs. Larry Michael Klawitter, 518 N.W. 2nd 577), ruled that outside of nystagmus, the DEC Program is not subject to the Frye Standard. (3) the County Court of Boulder, State of Colorado (State of Colorado vs. Daniel Hernandez, 92M181) also ruled that the procedures utilized by DRE's are not new or novel and that the Frye Standard did not apply. (4) Washington v. Baity, 991 P. 2d 1151, 140 Wn. 2d 1 (Washington 2000), the court determined that Frye applies to the protocol because the
process has "scientific elements." These are examples of decisions illustrating the acceptance the DEC Program in many courts across the nation.

One key element of the drug influence evaluation namely, Horizontal Gaze Nystagmus (HGN) has been found to meet the Frye Standard by several State Supreme Courts. The first case that led to statewide judicial notice of HGN is commonly known as "State vs. Blake" (718 P.2d 171; Arizona, 1986). See also "State vs, Superior Court of County of Cochise, 149 Ariz 269, 718 P.2d 171, 60 ALR 4th, 1103). In this landmark ruling, the Arizona Supreme Court also set standards governing the training of officers who would be qualified to testify about HGN. The court also explicitly ruled that HGN cannot be used to establish BAC quantitatively in the absence of a chemical test.

To Summarize:

The prevailing trend in court is to accept HGN as evidence of impairment, provided the proper scientific foundation is laid. However, courts consistently reject any attempt to derive a quantitative estimate of BAC from nystagmus. Keep in mind that neither nystagmus nor any other elements of the drug influence evaluation are intended to substitute for chemical testing. It is true that there is an approximate, statistical relationship between BAC and angle of onset, but this approximate relationship is not sufficiently reliable to permit BAC "prediction" in any individual case.

Topics for Study

1. State four reasons why it is important not to rely simply on a chemical test to establish a subject's drug impairment.

2. What categories of drugs were included in the Johns Hopkins Laboratory Study

3. In what percentage of cases in the Los Angeles Field Validation Study did blood tests confirm the DREs' opinion that PCP was present?

4. What percentage of subjects were found to be polydrug users in the LAPD Field Validation Study?

5. What was the landmark State Supreme Court case that upheld the use of HGN as evidence of impairment?

6. What do we call the standards for admissibility of scientific evidence, set by the U.S. Supreme Court?

7. Which State first found the Drug Evaluation and Classification procedures met the standards of scientific evidence?

ATTACHMENT A

"Frye" Decisions Regarding Admissibility of Drug Recognition Expert Testimony

"Frye" refers to a United States Federal Court opinion dealing with the admissibility of scientific evidence. The court established that new or novel scientific evidence, or the novel application of scientific principles, must be shown to have met with general acceptance in the relevant scientific community before it can be admitted.

1990
State of Arizona v. Dayton Johnson and Samuel Rodriguez, et al. Defendants Nos 90056865 & 90035883 (Unpublished Opinion).
The Municipal Court of the City of Tucson, County of Pima, State of Arizona

"Virtually all the witnesses agreed that the scientific procedures utilized by trained drug recognition experts are reliable and are generally accepted in the scientific community. The methodology in place, used by trained law enforcement personnel in the field, has been shown to produce reasonably reliable and uniform results that will contribute materially to the ascertainment of the truth."

On May 7, 1992, the Arizona Supreme Court heard oral arguments in a special proceeding regarding this case. The Justices uniformly rejected the application of "Frye" to the DRE procedures. The Chief Justice observed that the component examination procedures had been established for fifty years.

The prosecutors in this case were Tom Rankin (Tucson) and Cliff Vanell (Phoenix).
Expert witnesses for the prosecution included: Sgt. Richard Studdard, LAPD, Marcelline Burns, Ph.D., Sgt. Thomas Page, LAPD, Zenon Zuk, M.D., and Eugene Adler, toxicologist.

1992
County Court, Boulder, Colorado
Case No. 92M181 (Unpublished Opinion)
People of the State of Colorado v. Daniel Hernandez

"The DRE methods are accepted within the scientific community because they have found to be reliable."

"The Court finds that the expert does have sufficient specialized knowledge to assist the jurors in better deciding whether the defendant drove his car when under the influence of a specific drug. The DRE testimony can be used at trial provided a sufficient foundation is laid." Overall, this court ruled that the procedures used by DRE's are not new or novel scientific techniques that must meet the "Frye" standard.

The prosecutor in this case was David Archeluta (Boulder County). Expert witnesses for the prosecution include: Sergeant Thomas Page, LAPD, Zenon Zuk, M.D., Marcelline Burns, Ph.D.,

Rick Abbott, M.D., and Laurel Farrell (chemist).

1993

State of Minnesota in Supreme Court, C6-93-2092, filed June 30, 1994. (Unpublished Opinion)

State of Minnesota, City of Minneapolis vs. Larry Michael Klawitter, 518 N.W.2d 577 (1994)

"Given proper foundation and subject to other qualifications, opinion testimony by experienced police officers trained in use of so-called drug recognition protocol is generally admissible in evidence in a trial of a defendant for driving while under the influence of a controlled substance."

The Court determined that the gaze nystagmus test satisfies the requirements of "Frye".

"We agree with the trial court that the officer should be allowed to give an opinion based on the officer's training and experience and his or her observations following the 12-step drug recognition protocol, as long as (a) there is sufficient foundation for the specific opinion expressed, (b) the state does not attempt to exaggerate the officer's credentials by referring to the officer as a "Drug Recognition Expert" or to unfairly suggest that the officer's opinion is entitled to greater weight than it deserves, and..." "We add only that it should be obvious that the mere fact that such opinion testimony by itself will be sufficient to support a guilty verdict."

The court also determined that, outside of nystagmus, the components of a DRE examination are not scientifically new and are not subject to the "Frye" test.

The trial court stated, "...there is nothing scientifically new, novel, or controversial about any component of the DRE protocol itself. The symptomatology matrix used by DRE's to reach their conclusions is not new and is generally accepted in the medical community as an accurate compilation of signs and symptoms or impairment by the various drug categories."

The prosecutor in this case was Karen Herland (City of Minneapolis). Expert witnesses for the prosecution included: Sergeant Thomas Page, LAPD, Dr. Marcelline Burns (psychologist), Dr. David Peed (optometrist), Dr. Zenon Zuk (medical doctor), Eugene Adler (criminalist), Dr. S.J. Jejurikar (Minnesota Bureau of Criminal Apprehension), and Robert Meyer (toxicologist).

1994
11th Judicial Circuit in and for Dade County, Florida
Case No. 256998,9-I (Unpublished Opinion)
State of Florida v. Frederick Williams
Judge Maxine Cohen Lando
Original filed January 19, 1995

"Given proper foundation and subject to other qualifications, opinion testimony by an experienced police officer trained in the use of the drug recognition protocol is generally admissible in evidence in a trial of a defendant charged with driving under the influence of a controlled or chemical substance. Furthermore, Horizontal Gaze Nystagmus (HGN) test results are generally admissible to establish (1) that the defendant was impaired; and/or (2) that the defendant was over the legal limit; and/or (3) the defendant's specific breath or blood alcohol level at the time he performed the test."

This court found that the "Frye" standard is inapplicable to the DRE Protocol because neither the protocol nor any of its subsets (including HGN, VGN, and Lack of Convergence) are "scientific".

Further, these tests are neither new nor novel. The Court also state that "Frye" is inapplicable to HGN, VGN, and LOC because none of them are new or novel. "None of these tests or the theories and procedures they encompass, are new, novel, or emerging scientific techniques. The medical and psychological professions have acknowledged the tests' underlying theories and procedures for decades."

The Court concluded:

"Drug recognition training is not designed to qualify police officers as scientists, but to train them as observers. The training is intended to refine and enhance the skill of acute observation...and to focus that power...in a particular situation."

This court followed the Klawitter (Minnesota) decision, that it requires the state to "lay a proper predicate before referring to a DRE as anything other than a DRE or Drug Recognition Evaluator or Examiner."

"The real issue is not the admissibility of the evidence, but the weight it should receive. That is a matter for the jury to decide."

The prosecutor in this case was Steve Talpins (Dade County). Expert witnesses for the prosecution in this case included: Marcelline Burns, Ph.D., Zenon Zuk, M.D., Robert Dobie, M.D., Sergeant Thomas Page, LAPD, and others.

2000
Case No. 66876-1
State of Washington vs. Michael Baity
Judge J. Talmadge, WA Supreme Court
Original filed 2000

In this case, the court was asked to determine if a drug recognition protocol, used by trained drug recognition officers to determine if a suspect's driving is impaired by a drug other than alcohol, meets the requirements of *Frye v. United States*, 293 F. 1013,34 A.L.R. 145 (1923), for novel scientific evidence.

The issue brought before the court was; Is a drug recognition program novel scientific evidence generally accepted in the scientific community, thus satisfying the *Frye* test for admissibility?

The facts in this case were:
The state charged Baity with one count of DUI, in violation of RCW 46.61.502 (l) (b) (c), and one count of driving while license suspended in the third degree, in violation of RCW 46.20.342(l)(c), after he failed roadside SFST's and showed signs of drug impairments.
In a pretrial motion in Baity's case, the State sought to qualify the DREs as experts and to obtain a ruling on the admissibility of DRE evidence with respect to the defendant's drug impairment and the evaluation process used to determine that impairment. Specifically, the State sought to admit testimony that Baity's impairment was consistent with the symptoms associated with one of seven categories of drugs. Additionally, the state moved to admit testimony regarding the use of the horizontal gaze nystagmus (HGN) test, both for the detection of alcohol and for the detection of drugs. Baity moved to suppress all DRE evidence, including the HGN test, on the basis that the DRE program and protocol constitute novel scientific evidence subject to the Frye test for admissibility.

On May 19, 1998, the Pierce County District Court judges issued their opinion titled, *"Opinion Regarding Admissibility of HGN and DRE."* In that opinion, they denied the defendants' motions to suppress the field sobriety tests (SFSTs) as to their alcohol impairment, holding those tests are "reasonably understandable to the ordinary person" and therefore not subject to *Frye*. Clerk's Papers at 56. The court also noted some features of the DRE protocol were either not of a scientific nature or were scientific, but not novel.

The court ruled that after analyzing the DRE protocol and the approach of other courts to its admissibility, that the DRE protocol and the chart used to classify the behavioral patterns associated with seven categories of drugs have scientific elements meriting evaluation under *Frye*. They also found that the protocol to be accepted in the relevant scientific communities. However, the court ruled that there is confined situations where all 12-steps of the protocol have been undertaken. Moreover, an officer may not testify in a fashion that casts an aura of scientific certainty to the testimony. The officer also may not predict the specific level of drugs present in a suspect. The DRE officer, properly qualified, may express an opinion that a suspect's behavior and physical attributes are or are not consistent with the behavioral and physical signs associated with certain categories of drugs.

The court also held that the protocol meets the mandate of Frye. An officer may testify concerning such drug impairment, subject to the limitations set forth in this opinion, upon meeting the requirements of ER 702 and 703 for the admission of expert opinion testimony. The court reversed the suppression orders of the Pierce County District Court and remanded the cases for further proceedings consistent with this opinion.

2003
Case No. CR-2003-00025
State of New Mexico vs. Miriam Aleman
State of New Mexico, County of Dona Ana
Third Judicial District
Judge Silvia E. Cano-Garica

Defendant made a motion *In Limme* to exclude the testimony of the DRE officer. They heard the testimony of various witnesses and reviewed the State's Brief in support of the DRE testing. Testimony and other applicable documents found that:

The DRE officer was recognized as an expert of DRE testing based upon his specialized knowledge and experience, the DRE evaluation method is generally accepted in the particular scientific field of forensic toxicology, the DRE evaluation provides critical information which assists the toxicologist in forming an opinion as to whether the driver was impaired by the use of drugs at or near the time the driver was driving the motor vehicle.

The DRE protocols are the application or incorporation of traditional techniques in the biology, physiology, anatomy, chemistry, pharmacology and toxicology fields, and the ultimate decision as to the driver's alleged impairment, based on all of the testimony received, rests with the jury.

2004
Case No. CR 03-8203
State of Nebraska vs. Timothy J. Cubrich
Judge Todd J. Hutton, Sarpy Co. Court

The court was asked to determine the admissibility of the law enforcement officer's opinion that the defendant was under the influence of a drug, other than alcohol, to the extent that his abilities to safely operate the vehicle were appreciable impaired.

To this end the court applied the standards set forth in Schafersman v. Agland Coop, 262 Neb. 215, 631 N.W. 2d 862 (2001), having adopted Daubert v. Merrel Dow Pharmaceuticals, Inc., 509 U.S.579 (1993), as the controlling authority in determining the admissibility of expert opinion testimony.

The court concluded: Since Daubert, the court now serves in the "gatekeeping" role in which it is called upon to determine the reliability and relevance of expert testimony. There is no Case Law in Nebraska which has specifically addressed the issue of expert testimony relating to impaired drivers suspected of using drugs. Nor is there a statutory procedure by which Drug Recognition Examinations or the opinions derived there from have been codified.

Application of the Daubert standard provided a number of considerations the court used in determining the admissibility of evidence through the testimony of an expert, which included:

The 12-step protocol which relies on determining if a person is drug impaired has been recognized in the scientific community, including physicians, ophthalmologists, and forensic toxicologists, as a dependable methodology by which an officer, properly trained, can identify impairment and the category of drug(s) which are impairing the suspect's cognitive and physical capabilities.

The methodology is reliable because it is dependent on a fixed set of assessments which are verified by a toxicology test. The evaluation process includes HGN testing which has been found to meet the Frye standard of admissibility. Additionally, the HGN and VGN tests have been subject to peer review and publication. The remaining tests serve to screen the suspect's mental and physical condition documenting clues explaining why the person may or may not be impaired and if so the source(s) involved.

The drug recognition assessment is a tool by which a specially trained officer can conclude "based on the totality of results" whether or not a person is impaired by a drug other than alcohol.

The court found that the DREs opinion was correct in that the Defendant showed signs of impairment from a drug, other than alcohol, which caused him to seek a toxicological examination. The category of drug is admissible for the limited purpose of establishing foundation for drug screen conducted by the toxicologists.

ATTACHMENT B

American Prosecutors Research Institute
National Traffic Law Center

HORIZONTAL GAZE NYSTAGMUS
STATE CASE LAW SUMMARY

INTRODUCTION

The following state case law summary contains the seminal cases for each state, the District of Columbia and the Federal courts on the admissibility of HGN. Three main issues regarding the admissibility of the HGN test are set out under each state: evidentiary admissibility, police officer testimony, and purpose and limits of the HGN test results. The case or cases that address each issue are then briefly summarized and cited.

Alabama

I. Evidentiary Admissibility

HGN is a scientific test that must satisfy the *Frye* standard of admissibility. The Supreme Court of Alabama found that the State had not presented "sufficient evidence regarding the HGN test's reliability or its acceptance by the scientific community to determine if the Court of Criminal Appeals correctly determined that the test meets the Frye standards." *Malone v. City of Silverhill*, 575 So.2d 106 (Ala. 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Alaska

I. Evidentiary Admissibility

HGN is a scientific test. It is generally accepted within the relevant scientific community. *Ballard v. Alaska,* 955 P.2d 931, 939 (Alaska Ct. App. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of HGN testing as long as the government establishes a foundation that the officer has been adequately trained in the test.

Ballard, 955 P.2d at 941.

III. Purpose and Limits of HGN

HGN testing is "a reliable indicator of a person's alcohol consumption and, to that extent, HGN results are relevant." The court cautioned that the HGN test could not be used to correlate the results with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment. *Ballard,* 955 P.2d at 940.

Arizona

I. Evidentiary Admissibility

HGN is a scientific test that needs to satisfy the *Frye* standard of admissibility. State has shown that HGN satisfies the *Frye* standard. *State v. Superior Court* (*Blake*), 718 P.2d 171, 181 (Ariz. 1986) (seminal case on the admissibility of HGN).

II. Police Officer Testimony Needed to Admit HGN Test Result

"The proper foundation for [admitting HGN test results] . . . includes a description of the officer's training, education, and experience in administering the test and showing that proper procedures were followed."
Arizona ex. rel. Hamilton v. City Court of Mesa, 799 P.2d 855, 860 (Ariz. 1990).
See also Arizona ex. Rel. McDougall v. Ricke, 778 P.2d 1358, 1361 (Ariz. Ct. App. 1989).

III. Purpose and Limits of HGN

HGN test results are admissible to establish probable cause to arrest in a criminal hearing. *State v. Superior Court* (*Blake*), 718 P.2d at 182.

"Where a chemical analysis has been conducted, the parties may introduce HGN test results in the form of estimates of BAC over .10% to challenge or corroborate that chemical analysis." *Ricke*, 778 P.2d at 1361.

When no chemical analysis is conducted, the use of HGN test results "is to be limited to showing a symptom or clue of impairment." *Hamilton*, 799 P.2d at 858.

Arkansas

I. Evidentiary Admissibility

Novel scientific evidence must meet the *Prater* (relevancy) standard for admissibility. Because law enforcement has used HGN for over thirty-five years, a *Prater* inquiry is not necessary as the test is not "novel" scientific evidence. *Whitson v. Arkansas*, 863 S.W.2d 794, 798 (Ark. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

HGN may be admitted as evidence of impairment, but is not admissible to prove a specific BAC. *Whitson*, 863 S.W.2d at 798.

California

I. Evidentiary Admissibility

HGN is a scientific test and the *Kelly/Frye* "general acceptance" standard must be applied. *California v. Leahy*, 882 P.2d 321 (Cal. 1994). *California v. Joehnk*, 35 Cal. App. 4th 1488, 1493, 42 Cal. Rptr. 2d 6, 8 (Cal. Ct. App. 1995).

"…A consensus drawn from a typical cross-section of the relevant, qualified scientific community accepts the HGN testing procedures…."
Joehnk, 35 Cal. App. 4th at 1507, 42 Cal. Rptr. 2d at 17.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testimony is insufficient to establish "general acceptance in the relevant scientific community." *Leahy*, 882 P2d. at 609. Also see *People v. Williams*, 3 Cal. App. 4th 1326 (Cal. Ct. App. 1992).

Police officer can give opinion, based on HGN and other test results, that defendant was intoxicated. Furthermore, police officer must testify as to the administration and result of the test. *Joehnk*, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 18.

III. Purpose and Limits of HGN

HGN may be used, along with other scientific tests, as some evidence that defendant was impaired. *Joehnk*, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 17.

HGN test results may not be used to quantify the BAC level of the defendant.
California v. Loomis, 156 Cal. App. 3d Supp. 1, 5-6, 203 Cal. Rptr. 767, 769-70 (1984).

Connecticut

I. Evidentiary Admissibility

Proper foundation must be established in accordance with *Daubert* prior to the introduction of HGN test results. *State v. Russo*, 773 A. 2d 965 (Conn. App. Ct. 2001).

Also see, *Connecticut v. Merritt*, 647 A.2d 1021, 1028 (Conn. App. Ct. 1994). HGN must

meet the *Frye* test of admissibility. In this case, the state presented no evidence to meet its burden under the *Frye* test.

HGN satisfies the *Porter* standards and is admissible. (In *State v. Porter,* 698 A.2d 739 (1997), the Connecticut Supreme Court held the *Daubert* approach should govern the admissibility of scientific evidence and expressed factors to be considered in assessing evidence.) *Connecticut v. Carlson*, 720 A.2d 886 (Conn. Super. Ct. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

Must lay a proper foundation with a showing that the officer administering the test had the necessary qualifications and followed proper procedures. *Connecticut v. Merritt,* 647 A.2d 1021, 1028 (Conn. App. Ct. 1994).

III. Purpose and Limits of HGN

HGN test results can be used to establish probable cause to arrest in a criminal hearing. *Connecticut v. Royce*, 616 A.2d 284, 287 (Conn. App. Ct. 1992).

Delaware

I. Evidentiary Admissibility

HGN evidence is scientific and must satisfy the Delaware Rules of Evidence standard. *Delaware v. Ruthardt*, 680 A.2d 349, 356 (Del. Super. Ct. 1996).

HGN evidence is acceptable scientific testimony under the Delaware Rules of Evidence. *Ruthardt*, 680 A.2d at 362.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may be qualified as an expert to testify about the underlying scientific principles that correlate HGN and alcohol. Delaware police receiving three-day (twenty-four hour) instruction on HGN test administration are not qualified to do this.
Ruthardt, 680 A.2d at 361-62.

Police officer testimony about training and experience alone, without expert testimony, is not enough foundation to admit HGN test results.
Zimmerman v. Delaware, 693 A.2d 311, 314 (Del. 1997).

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a criminal hearing.
Ruthardt, 680 A.2d at 355.

HGN test results admissible to show probable cause in a civil hearing.
Cantrell v. Division of Motor Vehicles, 1996 Del. Super. LEXIS 265 (Del. Super. Ct. Apr. 9, 1996).

HGN test results cannot be used to quantify the defendant's BAC. However, they can be used as substantive evidence that the defendant was "under the influence of intoxicating liquor." *Ruthardt*, 680 A.2d at 361-62.

District of Columbia

I. Evidentiary Admissibility

The Court does not address this issue.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court used the case law of other jurisdictions to come to the conclusion that the Officer in the case could testify as an expert on the administration and the results of the HGN test. Therefore, in this case, the evidence was properly admitted using the Officer as the expert. See Karamychev v. District of Columbia, 772 A. 2d 806 (D.C. App. 2001).

III. Purpose and Limits of HGN

The Court has not yet addressed this issue.

Florida

I. Evidentiary Admissibility

The 3rd District Court found HGN to be a "quasi-scientific" test. Its application is dependent on a scientific proposition and requires a particular expertise outside the realm of common knowledge of the average person. It does not have to meet the *Frye* standard because HGN has been established and generally accepted in the relevant scientific community, and has been *Frye* tested in the legal community. The court took judicial notice that HGN is reliable based on supportive case law from other jurisdictions, numerous testifying witnesses and studies submitted. It is "no longer 'new or novel' and there is simply no need to reapply a *Frye* analysis." *Williams v. Florida,* 710 So. 2d 24 (Fla. Dist. Ct. App. 1998).

The 4th District Court found HGN to be a scientific test. However, because it is not novel, the *Frye* standard is not applicable. However, "[e]ven if not involving a new scientific technique, evidence of scientific tests is admissible only after demonstration of the traditional predicates for scientific evidence including the test's general reliability, the qualifications of test administrators and technicians, and the meaning of the results." Without this predicate, "the danger of unfair prejudice, confusion of issues or misleading the jury from admitting HGN test results outweighs any probative value." The state did not establish the appropriate foundation for the admissibility of HGN test results.
Florida v. Meador, 674 So. 2d 826, 835 (Fla. Dist. Ct. App. 1996), *review denied*, 686 So. 2d 580 (Fla. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

"We take judicial notice that HGN test results are generally accepted as reliable and thus are admissible into evidence once a proper foundation has been laid that the test was correctly administered by a qualified DRE [Drug Recognition Expert]."
Williams, 710 So. 2d at 32.

Also see *Bown v. Florida*, 745 So. 2d 1108 (Fl. Dist. Ct. App. 1999) which expands *Williams*. Allows trooper to explain HGN, but district requires confirmatory blood, breath or urine test before admitting HGN into evidence.

No evidence presented as to the police officer's qualifications nor administration of the HGN test in this case. *Meador*, 674 So. 2d at 835.

III. Purpose and Limits of HGN

The HGN test results alone, in the absence of a chemical analysis of blood, breath, or urine, are inadmissible to trigger the presumption provided by the DUI statute, and may not be used to establish a BAC of .08 percent or more. *Williams,* 710 So. 2d at 36.

Georgia

I. Evidentiary Admissibility

The HGN test is admissible as a "scientifically reliable field sobriety evaluation" under the *Harper* "verifiable certainty" standard. *Manley v. Georgia*, 424 S.E.2d 818, 819-20 (Ga. Ct. App. 1992).

HGN testing is judicially noticed as a scientifically reliable test and therefore expert testimony is no longer required before the test results can be admitted.
Hawkins v. Georgia, 476 S.E.2d 803, 808-09 (Ga. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer, who received specialized training in DUI detection and worked with a DUI task force for two years, was permitted to testify that, in his opinion, defendant was under the influence. *Sieveking v. Georgia*, 469 S.E.2d 235, 219-20 (Ga. Ct. App. 1996).

A police officer who testifies to the results, administration, and procedure of HGN may be cross-examined about those areas even if the state only offers him as a POST-certified officer. This is because the analysis and expertise needed for HGN go far beyond those needed by a lay person who observes the walk and turn or one leg stance tests. *James v. State,* 2003 WL 1540235 (Ga. App.).

III. Purpose and Limits of HGN

HGN test can be admitted to show that the defendant "was under the influence of alcohol to the extent that it was less safe for him to drive." *Sieveking*, 469 S.E.2d at 219.

Hawaii

I. Evidentiary Admissibility

HGN is a scientific test. The HGN test is reliable under the Hawaii Rules of Evidence and admissible as "evidence that police had probable cause to believe that a defendant was DUI." Judicial notice of the "validity of the principles underlying HGN testing and the reliability of HGN test results" is appropriate. HGN test results can be admitted into evidence if the officer administering the test was duly qualified to conduct the test and the test was performed properly. *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999).

II. Police Officer Testimony Needed to Admit HGN Test Result

Before HGN test results can be admitted into evidence in a particular case, however, it must be shown that (1) the officer administering the test was duly qualified to conduct and grade the test; and (2) the test was performed properly in the instant case. *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999), *See also Hawaii v. Toyomura*, 904 P.2d 893, 911 (Haw. 1992) and *Hawaii v. Montalbo,* 828 P2d. 1274, 1281 (Haw. 1992).

III. Purpose and Limits of HGN

HGN test can be admitted as "evidence that police had probable cause to believe that a defendant was DUI." *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999).

Idaho

I. Evidentiary Admissibility

HGN test results admitted under the Idaho Rules of Evidence. Rule 702 is the correct test in determining the admissibility of HGN. *State v. Gleason*, 844 P.2d 691, 694 (Idaho 1992).

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify as to administration of HGN test, but not correlation of HGN and BAC. *State v. Garrett*, 811 P.2d 488, 493 (Idaho 1991).

III. Purpose and Limits of HGN

"HGN test results may not be used at trial to establish the defendant's blood alcohol level. Although we note that in conjunction with other field sobriety tests, a positive HGN test result does supply probable cause for arrest, standing alone that result does not provide proof positive of DUI…." *Garrett*, 811 P.2d at 493.

HGN may be "admitted for the same purpose as other field sobriety test evidence -- a physical act on the part of [defendant] observed by the officer contributing to the cumulative portrait of [defendant] intimating intoxication in the officer's opinion." *Gleason*, 844 P.2d at 695.

Illinois

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility.
People v. Buening, 592 N.E.2d 1222, 1227 (Ill. App. Ct. 1992).
Despite the ruling of the *Buening* appellate court, the Fourth District Court of Appeals declined to recognize HGN's general acceptance without a *Frye* hearing. The court criticized the *Buening* court for taking judicial notice of HGN's reliability based on the decisions of other jurisdictions. *People v. Kirk*, 681 N.E.2d 1073, 1077 (Ill. App. Ct. 1997).

The state supreme court held that the state was <u>no longer required to show than an HGN test satisfied the Frye standard</u> before introducing the results of the test into evidence. Absent <u>proof</u> by the defense that the HGN test was unsound, the State only had to show that the officer who gave the test was trained in the procedure and that the test was properly administered. *The People of the State of Illinois v. Linda Basler,* 740 N.E.2d 1 (Ill. 2000), 2000 Ill. LEXIS 1698 (Ill. 2000). (Plurality Opinion) According to Fourth Circuit, a Frye hearing must be held for HGN to be admitted. *People v. Herring*, 762 N.E.2d 1186.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered." *Buening*, 592 N.E.2d at 1227.

III. Purpose and Limits of HGN

HGN test results may be used to establish probable cause in a criminal hearing. *People v. Furness*, 526 N.E.2d 947, 949 (Ill. App. Ct. 1988).

HGN test results admissible to show probable cause in a civil hearing. *People v. Hood*, 638 N.E.2d 264, 274 (Ill. App. Ct. 1994).

HGN test results may be used "to prove that the defendant is under the influence of alcohol." *Buening*, 592 N.E.2d at 1228.

Indiana

I. Evidentiary Admissibility

Results of properly administered HGN test are admissible to show impairment which may be caused by alcohol and, when accompanied by other evidence, will be sufficient to establish probable cause to believe a person may be intoxicated. *Cooper v. Indiana*, 751 N.E.2d 900, 903 (Ind. Ct. App. Feb. 2002)

II. Police Officer Testimony Needed to Admit HGN Test Result

The proper foundation for admitting HGN evidence should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered. *Cooper*, 751 N.E.2d at 903.

The question of whether a trained officer might express an opinion that defendant was intoxicated based upon the results of field sobriety tests was not before the court, and thus, the court expressed no opinion concerning the admissibility of such testimony. *Cooper,* 751 N.E. 2d at 902, n. 1.

III. Purpose and Limits of HGN

HGN test results, when accompanied by other evidence, will be sufficient to establish probable cause that the person may be intoxicated. *Cooper*, 751 N.E.2d at 903.

Iowa

I. Evidentiary Admissibility

HGN admissible as a field test under the Iowa Rules of Evidence. "[T]estimony by a properly trained police officer with respect to the administration and results of the horizontal gaze nystagmus test are admissible without need for further scientific evidence." *State v. Murphy*, 451 N.W.2d 154, 158 (Iowa 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify about HGN test results under Rule 702 if the officer is properly trained to administer the test and objectively records the results.
Murphy, 451 N.W.2d at 158.

III. Purpose and Limits of HGN

HGN test results may be used as an indicator of intoxication. *Murphy*, 451 N.W.2d at 158.

Kansas

I. Evidentiary Admissibility

HGN must meet *Frye* standard of admissibility and a *Frye* hearing is required at the trial level. There was no *Frye* hearing conducted and the appellate court refused to make a determination based on the record it had. *State v. Witte*, 836 P.2d 1110, 1121 (Kan. 1992).

HGN test has not achieved general acceptance within the relevant scientific community and its exclusion was appropriate. *State v. Chastain*, 960 P.2d 756 (Kan. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Kentucky

I. Evidentiary Admissibility

HGN test results admitted due to defendant's failure to object.
Commonwealth v. Rhodes, 949 S.W.2d 621, 623 (Ky. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Louisiana

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility and with proper foundation my be admitted as evidence of intoxication.

State v. Breitung, 623 So. 2d 23, 25-6 (La. Ct. App. 1993).
State v. Regan, 601 So. 2d 5, 8 (La. Ct. App. 1992).
State v. Armstrong, 561 So. 2d 883, 887 (La. Ct. App. 1990).

The standard of admissibility for scientific evidence is currently the Louisiana Rules of Evidence. *State v. Foret*, 628 So. 2d 1116 (La. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify as to training in HGN procedure, certification in the administration of HGN test and that the HGN test was properly administered.
Armstrong, 561 So. 2d at 887.

III. Purpose and Limits of HGN

The HGN test may be used by the officer "to determine whether or not he [needs] to 'go any further' and proceed with other field tests." *Breitung*, 623 So. 2d at 25.
HGN test results may be admitted as evidence of intoxication.
Armstrong, 561 So. 2d at 887.

Maine

I. Evidentiary Admissibility

Because the HGN test relies on greater scientific principles than other field sobriety tests, the reliability of the test must first be established. Either *Daubert* or *Frye* standard must be met. *State v. Taylor*, 694 A.2d 907, 912 (Me. 1997).

The Maine Supreme Court took judicial notice of the reliability of the HGN test to detect impaired drivers. *Taylor*, 694 A.2d at 910.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation shall consist of evidence that the officer or administrator of the HGN test is trained in the procedure and the [HGN] test was properly administered."
Taylor, 694 A.2d at 912.

III. Purpose and Limits of HGN

HGN test results may only be used as "evidence of probable cause to arrest without a warrant or as circumstantial evidence of intoxication. The HGN test may not be used by an officer to quantify a particular blood alcohol level in an individual case."
Taylor, 694 A.2d at 912.

Maryland

I. Evidentiary Admissibility

HGN is scientific and must satisfy the *Frye*/*Reed* standard of admissibility. The Court of Appeals took judicial notice of HGN's reliability and its acceptance in the relevant scientific communities. *Schultz v. State*, 664 A.2d 60, 74 (Md. Ct. Spec. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be properly trained or certified to administer the HGN test. [NOTE: In *Schultz*, the police officer failed to articulate the training he received in HGN testing and the evidence was excluded.] *Schultz*, 664 A.2d at 77.

III. Purpose and Limits of HGN

HGN testing may not be used to establish a specific blood alcohol level.
Wilson v. State, 723 A.2d 494 (Md. Ct. Spec. App. 1999).

Massachusetts

I. Evidentiary Admissibility

HGN is scientific and is admissible on a showing of <u>either</u> general acceptance in the scientific community or reliability of the scientific theory. *See Commonwealth v. Lanigan*, 641 N.E.2d 1342 (Mass. 1994). HGN test results are inadmissible until the Commonwealth introduces expert testimony to establish that the HGN test satisfies one of these two standards. *Commonwealth v. Sands*, 675 N.E.2d 370, 373 (Mass. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

"There must be a determination as to the qualification of the individual administering the HGN test and the appropriate procedure to be followed." In this case there was no testimony as to these facts, thus denying the defendant the opportunity to challenge the officer's qualifications and administration of the test. *Sands*, 675 N.E.2d at 373.

III. Purpose and Limits of HGN

The Court did not address this issue.

Michigan

I. Evidentiary Admissibility

Court found that HGN test is scientific evidence and is admissible under the *Frye* standard of admissibility. *State v. Berger*, 551 N.W.2d 421, 424 (Mich. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Only foundation necessary for the introduction of HGN test results is evidence that the police officer properly performed the test and that the officer administering the test was qualified to perform it. *Berger*, 551 N.W.2d at 424.

III. Purpose and Limits of HGN

HGN test results are admissible to indicate the presence of alcohol.
Berger, 551 N.W.2d at 424 n.1.

Minnesota

I. Evidentiary Admissibility

Court found that HGN meets the *Frye* standard of admissibility.
State v. Klawitter, 518 N.W.2d 577, 585 (Minn. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers must testify about their training in and experience with the HGN test.
See generally Klawitter, 518 N.W.2d at 585-86.

III. Purpose and Limits of HGN

HGN admissible as evidence of impairment as part of a Drug Evaluation Examination in the prosecution of a person charged with driving while under the influence of drugs.
See generally Klawitter, 518 N.W.2d at 585.

Mississippi

I. Evidentiary Admissibility

HGN is a scientific test. However, it is not generally accepted within the relevant scientific community and is inadmissible at trial in the State of Mississippi.
Young v. City of Brookhaven, 693 So.2d 1355, 1360-61 (Miss. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers cannot testify about the correlation between the HGN test and precise blood alcohol content. *Young*, 693 So.2d at 1361.

III. Purpose and Limits of HGN

HGN test results are admissible only to prove probable cause to arrest.
Young, 693 So.2d at 1361.

HGN test results cannot be used as scientific evidence to prove intoxication or as a mere showing of impairment. *Young*, 693 So.2d at 1361.

Missouri

I. Evidentiary Admissibility

Court found that HGN test meets the *Frye* standard of admissibility. *State v. Hill*, 865 S.W.2d 702, 704 (Mo. Ct. App. 1993), *rev'd on other grounds*, *State v. Carson*, 941 S.W.2d 518, 520 (Mo. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be adequately trained and able to properly administer the test.
Hill, 865 S.W.2d at 704.

See also, *Duffy v. Director of Revenue*, 966 S.W. 2d 372 (Mo. Ct. App. 1998). HGN not admitted at trial because the administering officer was not aware of hot to properly score the test and interpret its results.

III. Purpose and Limits of HGN

HGN can be admitted as evidence of intoxication. *Hill*, 865 S.W.2d at 704.

Montana

I. Evidentiary Admissibility

Court found that HGN is neither new nor novel; thus, *Daubert* does not apply. Court still finds that HGN must meet the state's rules of evidence that are identical to the Federal Rules of Evidence. *Hulse v. DOJ, Motor Vehicle Div.,* 961 P.2d 75, 88 (Mont. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The court held that before an arresting officer may testify as to HGN results, a proper foundation must show that the officer was properly trained to administer the HGN test and that he administered the test in accordance with this training. Before the officer can testify

as to the correlation between alcohol and nystagmus, a foundation must be established that the officer has special training in the underlying scientific basis of the HGN test.
Hulse, 961 P.2d 75 (Mont. 1998).

See Also, *State v. Crawford*, 315 Mont. 480, 68 P.3d 848 (2003), in which the court ruled that the officer's credentials were sufficient to establish his expertise, along with evidence that he was previously qualified as an expert. They relied on *Russette* (2002 MT 200), stating that to establish an expert's qualifications, the proponent of the testimony must show that the expert has special training or education and adequate knowledge on which to base an opinion.

III. Purpose and Limits of HGN

HGN test results admissible as evidence of impairment.
State v. Clark, 762 P.2d 853, 856 (Mont. 1988).

Nebraska

I. Evidentiary Admissibility

HGN meets the *Frye* standard for acceptance in the relevant scientific communities, and when the test is given in conjunction with other field sobriety tests, the results are admissible for the limited purpose of establishing impairment that may be caused by alcohol. *State v. Baue*, 607 N.W.2d 191 (Neb. 2000)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of **HGN** testing if it is shown that the officer has been adequately trained in the administration and assessment of the **HGN** test and has conducted the testing and assessment in accordance with that training.
State v. Baue, 607 N.W.2d 191 (Neb. 2000)

III. Purpose and Limits of HGN

"Testimony concerning **HGN** is admissible on the issue of impairment, provided that the prosecution claims no greater reliability or weight for the **HGN** evidence than it does for evidence of the defendant's performance on any of the other standard field sobriety tests, and provided further that the prosecution makes no attempt to correlate the **HGN** test result with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment." *State v. Baue*, 607 N.W.2d 191 (Neb. 2000) (quoting *Ballard v. State*, 955 P.2d 931, 940 (Alaska App. 1998))

New Hampshire

I. Evidentiary Admissibility

In *State v. Dahoo* (Dec. 20, 2002), the N.H. Supreme Court ruled that the HGN test is admissible under N.H. Rule of Evidence 702 and *Daubert* for the limited purpose of providing circumstantial evidence of intoxication. HGN test is a scientifically reliable and valid test.

N.H. Supreme Court ruled their findings binding in *Dahoo* and that courts "will not be required to establish the scientific reliability of the HGN."

II. Police Officer Testimony Needed to Admit HGN Test Result

"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." *State v. Dahoo,* 2002 N.H. LEXIS 179.

III. Purpose and Limits of HGN

"HGN results cannot be introduced at trial for the purpose of establishing a defendant's BAC level….[T]he results are not sufficient alone to establish intoxication."
State v. Dahoo, Id.

New Jersey

I. Evidentiary Admissibility

In New Jersey, the party offering the results of a scientific procedure into evidence must comply with Frye and show that the procedure is generally accepted in the relevant scientific communities. A party may prove this general acceptance via "(1) testimony of knowledgeable experts[,] (2) authoritative scientific literature[, or] (3) [p]ersuasive judicial decision." Based on the testimony of Dr. Marcelline Burns and Dr. Jack Richman, the Court found the HGN test to be generally accepted and the results thus admissible. The Court also noted the "significant number" of jurisdictions that have accepted the HGN test as admissible scientific evidence. *State v. Maida*, 2000 N.J. Super. LEXIS 276 (N.J. Super. Ct. Law Div. 2000).

***But See**, *State v. Doriguzzi*, 760 A.2d 336 (N.J. Super. 2000), which held that HGN is scientific evidence that must meet Frye Standard. However, in each trial, sufficient foundation evidence must be laid by expert testimony to assure defendants that a conviction for DUI, when based in part on HGN testing, is grounded in reliable scientific data. In this case, the appellate court reversed defendant's conviction because at trial no such foundation was presented. The court found that because HGN testing has not achieved general acceptance in the community, it is not a matter of which a court can take judicial notice.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court found the HGN test admissible "as a reliable scientific indicator of likely intoxication."

New Mexico

I. Evidentiary Admissibility

HGN is a scientific test. New Mexico follows the *Daubert* standard, which requires a showing of reliability before scientific evidence can be admitted. The court held that a scientific expert must testify to the underlying scientific reliability of HGN and that a police officer cannot qualify as a scientific expert. Because the State failed to present sufficient evidence regarding the HGN test's reliability, the court remanded the case stating it would be appropriate for the trial court, on remand, to make the initial determination of whether HGN testing satisfies *Daubert*. In addition, the court found HGN to be "beyond common and general knowledge" and declined to take judicial notice of HGN reliability.
State v. Torres, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Results of HGN test were inadmissible at trial (State v. Torres, 976 P.2d 20 (N.M. 1999). The State needed to prove that HGN was both valid and reliable.

State called Dr. Marceline Burns as a witness (reliability) but did not call an expert in a discipline such as biology or medicine to explain how the amount of alcohol a person consumes correlates with HGN (validity).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers can qualify as non-scientific experts based on their training and experience. Non-scientific experts may testify about the administration of the test and specific results of the test provided another scientific expert first establishes the reliability of the scientific principles underlying the test. In order to establish the "technical or specialized knowledge" required to qualify as an expert in the administration of the HGN test, "there must be a showing: (1) that the expert has the ability and training to administer the HGN test properly, and (2) that the expert did, in fact, administer the HGN test properly at the time and upon the person in question." *State v. Torres*, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Court believed that state had to show that presence of HGN (BAC above .08) correlates with diminishment of driver's mental or physical driving skills (which it failed to do) & a correlation between presence of HGN and BAC above or below .08 (which it did through testimony of Dr. Burns). Court did not preclude use of results of HGN to establish probable cause for arrest or to establish grounds for administering a chemical BAC test.

III. Purpose and Limits of HGN

The Court did not address this issue.

New York

I. Evidentiary Admissibility

Prue holds that HGN test results are admissible under *Frye* standard of "general acceptance." *People v. Prue*, Indictment No. I-5-2001, Franklin County Court (November 2001).

In *Gallup*, the court said that it was only necessary to conduct a foundational inquiry into the techniques and the tester's qualifications for admissibility.
People v. Gallup, Memorandum and order #13094, 302 A.D.2d 681 (3rd Dept)(2003).

The Court allowed the introduction of HGN and the results because it was properly administered and the burden of establishing that HGN is a reliable indicator of intoxication is generally accepted in the relevant scientific community was satisfied.
People v. William Miley, NYLJ 12/6/02 p.30 col. 6 (Nassau Co. Ct 2002).

II. Police Officer Testimony Needed to Admit HGN Test Result

The People must lay a proper evidentiary foundation in order for HGN results to be admissible at trial.

III. Purpose and Limits of HGN

The Court held that HGN is generally accepted in the relevant scientific community as a reliable indicator of intoxication.

North Carolina

I. Evidentiary Admissibility

HGN is a scientific test. It "does not measure behavior a lay person would commonly associate with intoxication but rather represents specialized knowledge that must be presented to the jury by a qualified expert." As a result, "until there is sufficient scientifically reliable evidence as to the correlation between intoxication and nystagmus, it is improper to permit a lay person to testify as to the meaning of HGN test results."
State v. Helms, 504 S.E.2d 293 (N.C. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

Testimony of one police officer, whose training consisted of a "forty hour training class dealing with the HGN test", was inadequate foundation for admission of HGN test results.
Helms, 504 S.E.2d 293 (N.C. 1998).

III. Purpose and Limits of HGN

HGN test results are evidence of impairment. *Helms*, 504 S.E.2d 293 (N.C. 1998).

North Dakota

I. Evidentiary Admissibility

Court found that HGN test is admissible as a standard field sobriety test.
City of Fargo v. McLaughin, 512 N.W.2d 700, 706 (N.D. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must testify as to training and experience and that the test was properly administered. *City of Fargo*, 512 N.W.2d at 708.

III. Purpose and Limits of HGN

" . . . HGN test results admissible only as circumstantial evidence of intoxication, and the officer may not attempt to quantify a specific BAC based upon the HGN test."
City of Fargo, 512 N.W.2d at 708.

Ohio

I. Evidentiary Admissibility

HGN test is objective in nature and does not require an expert interpretation.
State v. Nagel, 506 N.E.2d 285, 286 (Ohio Ct. App. 1986).

Court determined that HGN was a reliable indicator of intoxication without specifically ruling on whether HGN meets *Frye* or some other standard of admissibility.
State v. Bresson, 554 N.E.2d 1330, 1334 (Ohio 1990).

Court held that SFSTs, including HGN, must be administered in *strict compliance* with NHTSA's directives in order for the test results to be admissible.
State v. Homan, 732 N.E.2d 952 (Ohio 2000).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify to training in HGN procedure, knowledge of the test and ability to interpret results. *Bresson*, 554 N.E.2d at 1336.

III. Purpose and Limits of HGN

HGN can be used to establish probable cause to arrest and as substantive evidence of a defendant's guilt or innocence in a trial for DUI, but not to determine defendant's BAC. *Bresson*, 554 N.E.2d at 1336.

Oklahoma

I. Evidentiary Admissibility

HGN test results excluded because state failed to lay adequate foundation regarding HGN's scientific admissibility under the *Frye* standard of admissibility. Police officer's testimony alone was insufficient. *Yell v. State*, 856 P.2d 996, 996-97 (Okla. Crim. App. 1993).

The *Daubert* rationale replaces the *Frye* standard as the admissibility standard for scientific evidence. *Taylor v. State*, 889 P.2d 319, 328-29 (Okla. Crim. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testified to training on how to administer HGN test and how the test was administered in this case. Officer also testified as to his training in analyzing HGN test results. *Yell*, 856 P.2d at 997.

III. Purpose and Limits of HGN

If HGN testing was found to satisfy the *Frye* standard of admissibility, HGN test results would be considered in the same manner as other field sobriety test results. HGN test results are inadmissible as scientific evidence creating a presumption of intoxication. *Yell*, 856 P.2d at 997.

Oregon

I. Evidentiary Admissibility

HGN test results are admissible under the Oregon Rules of Evidence. HGN test results are scientific in nature, are relevant in a DUI trial, and are not unfairly prejudicial to the defendant. *State v. O'Key*, 899 P.2d 663, 687 (Or. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

"Admissibility is subject to a foundational showing that the officer who administered the test was properly qualified, that the test was administered properly, and that the test results were recorded accurately." *O'Key*, 899 P.2d at 670.

III. Purpose and Limits of HGN

"… HGN test results are admissible to establish that a person was under the influence of intoxicating liquor, but is not admissible…to establish a person's BAC…."
O'Key, 899 P.2d at 689-90.

Officer may not testify that, based on HGN test results, the defendant's BAC was over .10.
State v. Fisken, 909 P.2d 206, 207 (Or. Ct. App. 1996).

Pennsylvania

I. Evidentiary Admissibility

The state laid an inadequate foundation for the admissibility of HGN under the *Frye*/*Topa* standard.
Commonwealth v. Moore, 635 A.2d 625, 629 (Pa. Super. Ct. 1993).
Commonwealth v. Apollo, 603 A.2d 1023, 1028 (Pa. Super. Ct. 1992).
Commonwealth v. Miller, 532 A.2d 1186, 1189-90 (Pa. Super. Ct. 1987).

Testimony of police officer is insufficient to establish scientific reliability of HGN test.
Moore, 635 A.2d at 692.
Miller, 532 A.2d at 1189-90.

Testimony of behavioral optometrist did not establish general acceptance of HGN test.
Apollo, 603 A.2d at 1027-28.

II. Police Officer Testimony Needed to Admit HGN Test Result

County detective certified as HGN instructor. Court did not comment on whether this would be enough foundation to allow the detective to testify about HGN test results.
Moore, 635 A.2d 629.

Police officer had one-day course on HGN. Court did not comment on whether this would be enough foundation to allow the officer to testify about HGN test results.
Miller, 603 A.2d at 1189.

III. Purpose and Limits of HGN

Not addressed by court.

South Carolina

I. Evidentiary Admissibility

HGN admissible in conjunction with other field sobriety tests. By implication, HGN is not regarded as a scientific test. *State v. Sullivan*, 426 S.E.2d 766, 769 (S.C. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer given twenty hours of HGN training. *Sullivan*, 426 S.E.2d at 769.

III. Purpose and Limits of HGN

HGN test results admissible "to elicit objective manifestations of soberness or insobriety . . . Evidence from HGN tests is not conclusive proof of DUI. A positive HGN test result is to be regarded as merely circumstantial evidence of DUI. Furthermore, HGN test shall not constitute evidence to establish a specific degree of blood alcohol content."
Sullivan, 426 S.E.2d at 769.

South Dakota

I. Evidentiary Admissibility

If it can be shown that a horizontal gaze nystagmus test was properly administered by a trained officer, such evidence should be admitted for a jury to consider at trial along with evidence of the other accepted field sobriety tests administered in South Dakota.
STATE v. HULLINGER, 2002 SD 83; 649 N.W.2d 253 (S.D.S.Ct. 2002); 2002 S.D. LEXIS 99

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify if properly trained and test properly administered. At the pretrial hearing, the State presented three witnesses: 1) Monte Farnsworth, training director for the Office of Highway Safety at the Division of Criminal Investigation Law Enforcement Training Academy; 2) Deputy Ludwig; and 3) Dr. Larry Menning, optometrist and expert witness. South Dakota follows a *Daubert* standard in use of expert witnesses.

III. Purpose and Limits of HGN

The Court did not address this issue.

Tennessee

I. Evidentiary Admissibility

HGN is a scientific test. To be admissible at trial, such evidence must satisfy the requirements of Tenn. Rules of Evidence 702 and 703. State provided an inadequate amount of evidence to allow the court to conclude that HGN evidence meets this standard.
State v. Murphy, 953 S.W.2d 200 (Tenn. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

HGN must be offered through an expert witness. To qualify as an expert, a police officer must establish that he is qualified by his "knowledge, skill, experience, training or education" to provide expert testimony to "substantially assist the trier of fact to

understand the evidence or determine a fact in issue." Although the court did not rule out the possibility that the officer can be considered an expert, the court set a high level of proof. In this case, the court felt that although the officer had attended law enforcement training in DUI offender apprehension and the HGN test, this training was not enough to establish him as an expert. *State v. Grindstaff,* 1998 Tenn. Crim. App. Lexis 339 (March 23, 1998).

III. Purpose and Limits of HGN

The Court did not address this issue.

Texas

I. Evidentiary Admissibility

HGN admissible under the Texas Rules of Evidence.
Emerson v. State, 880 S.W.2d 759, 769 (Tex. Crim. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer must qualify as an expert on the HGN test, specifically concerning its administration and technique, before testifying about a defendant's performance on the test. Proof that the police officer is certified in the administration of the HGN test by the Texas Commission on Law Enforcement Officer Standards and Education satisfies this requirement. *Emerson*, 880 S.W.2d at 769.

III. Purpose and Limits of HGN

HGN admissible to prove intoxication, but not accurate enough to prove precise BAC.
Emerson, 880 S.W.2d at 769.

Utah

I. Evidentiary Admissibility

HGN test admissible as other field sobriety test. Court reserved judgment as to the scientific reliability of HGN. *Salt Lake City v. Garcia*, 912 P.2d 997, 1001 (Utah Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify as to training, experience and observations when HGN admitted as a field test. *Garcia*, 912 P.2d at 1001.

III. Purpose and Limits of HGN

Admissible as any other field sobriety test. *Garcia*, 912 P.2d at 1000-01.

Washington

I. Evidentiary Admissibility

It is "undisputed" in the relevant scientific communities that "an intoxicated person will exhibit nystagmus". HGN testing is not novel and has been used as a field sobriety test for "decades" and is administered the same whether investigating alcohol impairment or drug impairment. Thus, the use of HGN in drug and alcohol impaired driving cases is acceptable.
State v. Baity, 140 Wn.2d 1, 991 P.2d 1151 (Wash. 2000).

"[T]he *Frye* standard applies to the admission of evidence based on HGN testing, unless . . . the State is able to prove that it rests on scientific principles and uses techniques which are not 'novel' and are readily understandable by ordinary persons." The state failed to present any evidence to this fact and the court declined to take judicial notice of HGN.
State v. Cissne, 865 P.2d 564, 569 (Wash. Ct. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

West Virginia

I. Evidentiary Admissibility

The state did not present evidence for the court to reach "the question of whether the HGN test is sufficiently reliable to be admissible." However, the court did conclude "that even if the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissible only as evidence that the driver was under the influence. Estimates of blood alcohol content based on the HGN test are inadmissible."
State v. Barker, 366 S.E.2d 642, 646 (W. Va. 1988).

The West Virginia Supreme Court modified *State v. Barker* to the extent that the *Daubert* analysis of FRE 702 is applicable to the question of admissibility of expert testimony under the West Virginia Rules of Evidence Rule 702.
Wilt v. Buracker, 443 S.E. 2d 196 (W.Va. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer's training consisted of a one-day, eight-hour training session conducted by the state police. Officer testified to giving the HGN test about 100 times. Court did not reach

question of whether this would be enough to allow the officer to testify about the HGN test results. *Barker*, 366 S.E.2d at 644.

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a civil hearing.
Muscatell v. Cline, 474 S.E.2d 518, 525 (W. Va. 1996).
Boley v. Cline, 456 S.E.2d 38, 41 (W. Va. 1995).

"If the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissible only as evidence that the driver was under the influence," the same as other field sobriety tests. *Barker*, 366 S.E.2d at 646.

Wisconsin

I. Evidentiary Admissibility

The court held that the HGN test results are admissible in this case because the test results were not the only evidence. The results were accompanied by the expert testimony of the officer. *State v. Zivcic*, 598 N.W.2d 565 (Wisc. Ct. App. 1999).
See also*, State v. Maxon*, 633 N.W. 2d 278 (Wisc. Ct. App. 2001)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer who is properly trained to administer and evaluate the HGN test can testify to the test results. A second expert witness is not needed. *State v. Zivcic*, 598 N.W.2d 565 (Wisc. Ct. App. 1999).

III. Purpose and Limits of HGN

The Court did not address this issue.

Wyoming

I. Evidentiary Admissibility

SFSTs, including HGN, are admissible to establish probable cause when administered in *substantial compliance* with NHTSA guidelines. Strict compliance is not necessary. The court took judicial notice of the number of states that allow HGN evidence on the basis of the "officer's training, experience and ability to administer the test". *Smith v. Wyoming*, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer that is properly trained to administer and evaluate the HGN test can testify to HGN results. *Smith v. Wyoming*, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

III. Purpose and Limits of HGN

HGN test results are admissible to show probable cause.
Smith v. Wyoming, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

United States

I. Evidentiary Admissibility

U.S. V. Eric D. Horn, 185 F. Supp. 2d 530 (D. Maryland 2002) In this case, U.S. District Court in Maryland made the first application of the newly revised FRE 702 to the HGN and other SFSTs.

Results of properly administered WAT, OLS and HGN, SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC.

Officer must first establish his qualifications to administer the test - training and experience, not opinion about accuracy rate of test or causal connection between alcohol consumption and exaggerated HGN.

Government may prove causal connection by: judicial notice, expert testimony, or learned treatise. Horn may prove other causes by: judicial notice, cross-examination of state's expert, defense expert, or learned treatise.

U.S. V. Daras, 1998 WL 726748 (4th Cir. 1998)(Unpublished opinion). WAT and OLS were not scientific so no expert needed. Court would have applied *Daubert* to HGN test, but there was no need to because breathalyzer, WAT and OLS were sufficient.

HGN test was admitted as part of series of field tests. Its admission was not challenged on appeal. *U.S. v. Van Griffin*, 874 F.2d 634 (9th Cir. 1989).

II. Police Officer Testimony Needed to Admit HGN Test Result

Foundation for HGN must address validity & reliability under FRE 702. In *Horn*, prosecution had a medical doctor and a police officer, but defense used behavioral psychologist to attack HGN literature of Dr. Marceline Burns and others.

III. Purpose and Limits of HGN

SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC. *Horn*.

Properly qualified, Officer may give opinion of intoxication or impairment by alcohol. *Horn*.

Note: The following states were not listed above due to a lack of case law discussion on HGN:
Colorado
Nevada
Rhode Island
Vermont(HGN was mentioned in the context of a refusal being admissible as evidence of probative guilt. State v. Blouin, 168 Vt. 119 (Vt. 1998)
Virginia

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Or
Visit their website www.ndaa-apri.org.

ATTACHMENT C

SCIENTIFIC PUBLICATIONS AND RESEARCH REPORTS ADDRESSING NYSTAGMUS

1. Anderson, Schweitz & Snyder, Field Evaluation of Behavioral Test Battery for DWI, U.S. Dept. of Transportation Rep. No. DOT-HS-806-475 (1983) (field evaluation of the Standardized Field Sobriety Test battery (HGN, one-leg stand, and walk and turn) conducted by police officers from four jurisdictions indicated that the battery was approximately 80% effective in determining BAC above and below .10 percent).

2. Aschan, Different Types of Alcohol Nystagmus, 140 ACTA OTOLARYNGOL SUPP. 69 (Sweden 1958) ("From a medico-legal viewpoint, simultaneous recording of AGN (Alcohol Gaze Nystagmus) and PAN (positional alcoholic nystagmus) should be of value, since it will show in which phase the patient's blood alcohol curve is...").

3. Aschan & Bergstedt, Positional Alcoholic Nystagmus in Man Following Repeated Alcohol Doses, 80 ACTA OTOLARYNGOL SUPP. 330 (Sweden 1975) (abstract available on DIALOG, file 173: Embase 1975-79) (degree of intoxication influences both PAN I and PAN II).

4. Aschan, Bergstedt, Goldberg & Laurell, Positional Nystagmus in Man During and After Alcohol Intoxication, 17 Q.J. OF STUD. ON ALCOHOL, Sept. 1956, at 381. Study distinguishing two types of alcohol-induced nystagmus, PAN (positional alcoholic nystagmus) I and PAN II, found intensity of PAN I, with onset about one-half hour after alcohol ingestion, was proportional to amount of alcohol taken.

5. Baloh, Sharma, Moskowitz & Griffith, Effect of Alcohol and Marijuana on Eye Movements, 50 AVIAT. SPACE ENVIRON. MED., Jan 1979, at 18 (abstract available on DIALOG, file 153: Medline 1979-79) (smooth pursuit eye movement effects of alcohol overshadowed those of marijuana).

6. Barnes, The Effects of Ethyl Alcohol on Visual Pursuit and Suppression of the Vestibulo-Ocular Reflex, 406 ACTA OTOLARYNGOL SUPP. 161 (Sweden 1984) (ethyl alcohol disrupted visual pursuit eye movement by increasing number of nystagmic "catch-up saccades").

7. Burns & Moskowitz, Psychophysical Tests for DWI Arrest, U.S. Dept. of Transportation Rep. No. DOT-HS-802-424 (1977) (recommended the three-test battery developed by SCRI (one-leg stand, walk and turn, and HGN) to aid officers in discriminating BAC level).

8. Burns, The Robustness of the Horizontal Gaze Nystagmus (HGN) Test, U.S. Dept. of Transportation 2004. Concludes that HGN as used by law enforcement is a robust

procedure and the data obtained in this report does not support changes or revisions to the current testing or procedure

9. Church & Williams, Dose- and Time-Dependent Effects of Ethanol, 54 ELECTROENCEPHALOGRAPHY & CLIN. NEUROPHYSIOL., Aug. 1982, at 161 (abstract available on DIALOG, file 11: Psychinfo 1967-85 or file 72: Embase 1982-85) (positional alcohol nystagmus increased with dose levels of ethanol).

10. Citek, Ball and Rutledge, Nystagmus Testing in Intoxicated Individuals, Vol. 74, No. 11, Nov. 2003, Optometry, established that the HGN test administered in the standing, seated, and supine postures is able to discriminate impairment at criterion BAC's of 0.08% and 0.10%.

11. Compton, Use of the Gaze Nystagmus Test to Screen Drivers at DWI Sobriety Checkpoints, U.S. Dept. of Transportation (1984) (field evaluation of HGN test administered to drivers through car window in approximately 40 seconds: "the nystagmus test scored identified 95% of the impaired drivers" at 2; 15% false positive for sober drivers, id.).

12. Fregly, Bergstedt & Graybiel, Relationships Between Blood Alcohol, Positional Alcohol Nystagmus and Postural Equilibrium, 28 Q.J. OF STUD. ON ALCOHOL, March 1967, at 11, 17 (declines from baseline performance levels correlated with peak PAN I responses and peak blood alcohol levels).

13. Goldberg, Effects and After-Effects of Alcohol, Tranquilizers and Fatigue on Ocular Phenomena, ALCOHOL AND ROAD TRAFFIC 123 (1963) (of different types of nystagmus, alcohol gaze nystagmus is the most easily observed).

14. Helzer, Detection DUIs Through the Use of Nystagmus, LAW AND ORDER, Oct. 1984, at 93 (nystagmus is "a powerful tool for officers to use at roadside to determine BAC of stopped drivers...(O)fficers can learn to estimate BACs to within an average of 0.02 percent of chemical test readings." Id. at 94).

15. L.R. Erwin, DEFENSE OF DRUNK DRIVING CASES (3d ed. 1985) ("A strong correlation exists between the BAC and the angle of onset of (gaze) nystagmus." Id. at 8.15A(3).

16. Lehti, The Effect of Blood Alcohol Concentration on the Onset of Gaze Nystagmus, 136 BLUTALKOHOL 414 (West Germany 1976) (abstract available on DIALOG, file 173: Embase 1975-79) (noted a statistically highly significant correlation between BAC and the angle of onset of nystagmus with respect to the midpoint of the field of vision).

17. Misoi, Hishida & Maeba, Diagnosis of Alcohol Intoxication by the Optokinetic Test, 30 Q.J. OF STUD. ON ALCOHOL 1 (March-June 1969) (optokinetic nystagmus, ocular adaptation to movement of object before eyes, can also be used to detect central nervous system impairment caused by alcohol. Optokinetic nystagmus is inhibited at BAC of only .051 percent and can be detected by optokinetic nystagmus test. Before

dosage subjects could follow a speed of 90 degrees per second; after, less than 70 degrees per second).

18. Murphree, Price & Greenberg, Effect of Congeners in Alcohol Beverages on the Incidence of Nystagmus, 27 Q.J. OF STUD. ON ALCOHOL, June 1966, at 201 (positional nystagmus is a consistent, sensitive indicator of alcohol intoxication).

19. Nathan, Zare, Ferneau & Lowenstein, Effects of Congener Differences in Alcohol Beverages on the Behavior of Alcoholics, 5 Q.J. OF STUD. ON ALCOHOL SUPP., may 1970, at 87 (abstract available on DIALOG, file 11: Psychinfo 1967-85) (incidence of nystagmus and other nystagmoid movements increased with duration of drinking).

20. Norris, The Correlation of Angle of Onset of Nystagmus With Blood Alcohol Level: Report of a Field Trial, CALIF. ASS'N CRIMINALISTICS NEWSLETTER, June 1985, at 21 (The relationship between the ingestion of alcohol and the inset of various kinds of nystagmus "appears to be well documented." Id. "While nystagmus appears to be useful as a roadside sobriety test, at this time, its use to predict a person's blood alcohol level does not appear to be warranted." Id. at 22).

21. Nuotto, Palva & Seppala, Naloxone Ethanol Interaction in Experimental and Clinical Situations, 54 ACTA PHARMACOL. TOXICOL. 278 (1984) (abstract available on DIALOG, file 5: Biosis Previews 1981-86) (ethanol alone dose-dependently induced nystagmus).

22. Oosterveld, Meineri & Paolucci, Quantitative Effect of Linear Acceleration on Positional Alcohol Nystagmus, 45 AEROSPACE MEDICINE, July 1974, at 695 (G-loading brings about PAN even when subject has not ingested alcohol; however when subjects ingested alcohol, no PAN was found when subjects were in supine position, even with G-force at 3).

23. Penttila, Lehti & Lonnqvist, Nystagmus and Disturbances in Psychomotor Functions Induced by Psychotropic Drug Therapy, 1974 PSYCHIAT. FENN. 315 (abstract available on DIALOG, file 173: Embase 1975-79) (psychotropic drugs induce nystagmus).

24. Rashbass, The Relationship Between Saccadic and Smooth Tracking Eye Movements, 159 J. PHYSIOL. 326 (1961) (barbiturate drugs interfere with smooth tracking eye movement).

25. Richman, McAndrew, Decker and Mullaney, An Evaluation of Pupil Size Standards Used By Police Officers for Detecting Drug Impairment, Vol. 75, No. 3, March 2004, Opportunity, determined normative values and potential ranges for pupillary responses using the specific DEC program protocols for pupil testing in non-impaired persons.

26. Savolainen, Riihimaki, Vaheri & Linnoila, Effects of Xylene and Alcohol on Vestibular and Visual Functions in Man, SCAND. J. WORK ENVIRON. HEALTH 94 (Sweden

1980) (abstract available on DIALOG, file 172: Embase 1980-81 on file 5: Biosis Previews 1981-86) (the effects of alcohol on vestibular functions (e.g., positional nystagmus) were dose-dependent).

27. Seelmeyer, Nystagmus, A Valid DUI Test, LAW AND ORDER, July 1985, at 29 (Horizontal Gaze Nystagmus test is used in "at least one law enforcement agency in each of the 50 states" and is "a legitimate method of establishing probable cause." Id.).

28. Smith, Hayes, Yolton, Rutledge and Citek, Drug Recognition Expert Evaluations Made Using Limited Data, Forensic Science International 130 (2002), p. 167-173, demonstrated that DRE officers can make a correct positive identification of drug intoxication with limited information.

29. Tharp, Burns & Moskowitz, Circadian Effects on Alcohol Gaze Nystagmus (paper presented at 20th annual meeting of Society for Psychophysiological Research), abstract in 18 PSYCHOPHYSIOLOGY, March 1981 (highly significant correlation between angle of onset of AGN and BAC).

30. Tharp, Burns & Moskowitz, Development and Field Test of Psychophysical Tests for DWI Arrests, U.S. Dept. of Transportation Rep. No. DOT-HS-805-864 (1981) (standardized procedures for administering and scoring the SCRI three-test battery; participating officers able to classify 81% of volunteers above or below .10).

31. Umeda & Sakata, Alcohol and the Oculomotor System, 87 ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY, May-June 1978, at 392 (in volunteers whose "caloric eye tracking pattern" (CETP) was normal before alcohol intake, influence of alcohol on oculomotor system appeared consistently in the following order: (1) abnormality of CETP, (2) positional alcohol nystagmus, (3) abnormality of eye tracking pattern, (4) alcohol gaze nystagmus).

32. Wilkinson, Kime & Purnell, Alcohol and Human Eye Movement, 97 BRAIN 785 (1974) (oral dose of ethyl alcohol impaired smooth pursuit eye movement of all human subjects).

33. Zyo, Medico-legal and Psychiatric Studies on the Alcohol Intoxicated Offender, 30 JAPANESE J. OF LEGAL MED., No. 3, 1976, at 169 (abstract available on DIALOG, file 21: National Criminal Justice Reference Service 1972-85) (recommends use of nystagmus test to determine somatic and mental symptoms of alcohol intoxication as well as BAC).