

Patrick Barone of the Barone Defense Firm fights OWI charges in Michigan. The following is a legal analysis and strategy guide in the use of Drug Recognition Experts in OWI - Drugs cases. For more information on [OWI Drug cases](#) visit his [Michigan OWI defense website](#).

I. The New Drug Recognition Expert (DRE)

- A. A drug recognition expert is a police officer who indicates that they are able to recognize whether someone is on drugs, what kind of drug they are on, and whether their ability to drive has been impaired by this drug.**

The theory of the DRE program, and the claim of the DRE officer is that they are able to determine whether someone is under the influence of drugs through a visual evaluation.

Typically, a DRE is called in to assist an arresting officer to further evaluate a suspect arrested for drunk driving but who has passed a breath test. (See for example, the attached police report).

According to law enforcement, the DRE's testimony may provide better evidence for the prosecution than toxicology reports. The argument is that blood tests may not measure the quantity of drugs taken and, even if they do, may not show a level high enough to prove impairment. Urine tests do not accurately pinpoint when the drugs were ingested and may not show the quantity. Therefore blood and urine tests alone may not be sufficient to prove the person was affected by drugs when they were driving.

B. How a Drug Recognition Expert's is selected and "qualified".

DREs are usually experienced officers with a proven expertise in DWI detection and standardized field sobriety testing. A DRE candidate is typically nominated by a superior/commanding officer. Depending on the individual

department's policy, a candidate may be asked to submit a written application or to appear for an oral interview. Successful candidates will have a demonstrated proficiency in criminal investigations and court room testimony.

In order to become a DRE, the officer must attend a two day DRE Pre school, and then attend an intense seven-day DRE school. The officer then must complete twelve evaluations where he/she successfully determines three of the seven recognized drug categories. Then the officer must pass a final exam.

The DRE program has evolved the drug identification into a three-step process. The first step is to establish that the impairment is due to something other than alcohol. Second, to determine if impairment is due to a medical reason or injury. Third, to determine what category, or categories, of drugs is causing the impairment.

According to Tom Page, a retired Los Angeles DRE, in 1986, in recognition of the need to develop a formal curriculum, eighteen senior LAPD DREs were selected to develop and present the DRE curriculum.¹ A DRE school was conducted in May of 1986 in Los Angeles utilizing this initial cadre of instructors. NHTSA and other agencies monitored this school, with the goals of standardizing

¹The following Los Angeles Police Department officers were responsible for the development and presentation of the DRE curriculum: Patricia (Russell) Berry, James Brown, Milt Dodge, Ian Hall, Arthur Haversat, Clark John, Baron Laetzsch, Gary Lynch, Ron Moen, Michael Murray, Thomas Page, Craig Peters, Jerry Powell, Scott Sherman, Richard Studdard, Larry Voelker, Michael Widder, and Nicholas Zingo.

the curriculum, and developing a comprehensive curricula package for administrators, instructors, and students.² In 1987, NHTSA completed the development of these lesson plans. NHTSA also conducted an instructor development school in Los Angeles to prepare DREs to present the curriculum. A successful DRE school was then held in Los Angeles using this new standardized curriculum.

In the late 1980s, it was becoming clear to U.S. law enforcement and traffic safety officials that the DRE Program was poised for tremendous growth. Undoubtedly, for the DRE Program to expand, it needed administrative support and oversight on a national level. The International Association of Chiefs of Police (IACP) had for years maintained an ongoing relationship with NHTSA. The IACP supported NHTSA training programs for police officers, and advised NHTSA on research needs in traffic enforcement. The IACP was the logical organization to assume the oversight and administration of the growing DRE Program. In 1989, the IACP assumed this oversight, and became the regulating body for Drug Recognition Experts.

In 1988, the United States Congress passed the Omnibus Drug Bill. This legislation funded a large-scale expansion of DRE training. Due in large measure

² John "Jack" Oates, William Nash, and Bill Tower (on loan to NHTSA from the Maryland State Police), represented NHTSA at this course.

to this bill, law enforcement agencies in 34 states have adopted the DRE program. As of 2002, there are approximately 5,400 certified DREs nationwide, including nearly 900 DRE instructors. In addition, DREs now serve in Canada, Australia, Sweden, and Norway. South Africa, through the auspices of its Council on Scientific and Industrial Research, may adopt the DRE Program in the near future.

DRE training and certification records are now maintained by the IACP.¹ NHTSA has maintained its role in the DRE Program by sponsoring curriculum update conferences, coordinating DRE courses nationwide, developing and issuing training materials, and generally providing administrative support of the DRE Program. The DRE Program is now formally titled the Drug Evaluation and Classification Program (DECP).

**C. The seven recognized drug categories and drug categorization:
based on patterns of signs and symptoms.**

In the early 1980's the LAPD (Los Angeles Police Department) identified a need to more thoroughly evaluate those drivers who exhibited signs of impairment but who tested negative or below the legal limit for the presence or amount of alcohol. Releasing such persons with the admonishment not to drive was

¹ The IACP also supports a DRE Section, which serves as a resource and responds to the needs of DREs, program coordinators, and other traffic safety professionals. For information on membership requirements, the reader should contact the IACP at 1-800-THEIACP.

not a good option. Consequently, officers of the LAPD pioneered the development a new type of “field evaluation” of the driver, which culminated in the development of the DRE program’s seven drug categorizes. These categories were in turn based on information gleaned from various fields of medicine including psychiatry, physiology, toxicology, and other associated fields. In developing these categories, these officers claim that they did not invent new knowledge about the effects of the drugs, but instead collated information for a variety of sources.

This drug categorization system was developed in part in such a way as to make categorization conducive to the officer’s field investigation, and was based not on shared chemical structures or on the user's subjective experience, but instead on a shared pattern of physical manifestations or effects. These effects are called “signs and symptoms”, and form the source material of the DRE identification program. The seven categories are: (1) CNS Depressants; (2) CNS Stimulants; (3) Hallucinogens; (4) PCPs; (5) Narcotic Analgesics; (6) Inhalants; (7) Cannabis. [see **Appendix A**].

D. How the drug category is determined by a DRE; the standardized 12-step drug recognition process.

In part because of cost to the department in training a DRE another officer will usually make the initial stop. After concluding that the driver is not under the influence of alcohol, but still with the belief that the driver is impaired, the officer

Step Seven: Dark Room Examinations (includes examinations of eyes, nose and mouth).

Step Eight: Examination for Muscle Tone

Step Nine: Examination for Injection Site(s) (third pulse is taken)

Step Ten: Suspect's Statements and Other Observations

Step Eleven: Opinions of the Evaluator

Step Twelve: Toxicology Examination

E. How DRE's are Trained to Present Testimony.

Because only experienced officers are selected for the program, a great deal of time is not spent training the DRE in how to testify. It is assumed that they already know how to do this, and in fact, only officers that have demonstrated an ability to provide *clear and convincing* court room testimony are selected.

However, there is a section in the course dealing with "case preparation and testimony". During this part of the officer's training information is imparted relative to both direct as well as cross-examination.

Significantly, when testifying about the SFSTs, the DREs are specifically trained NOT to use the terms "pass" or "fail" or to refer to the suspect's "score" or the number of points produced. DRE's are trained to present their testimony clearly and convincingly so that the suspect's impairment "speaks for itself".

DRE's are also trained to keep in mind that an officer's demeanor is as much or

more important than the content of their testimony. The 1999 manual also describes how to answer certain questions (providing sample answers) and also indicates specifically “[b]e polite and courteous. Do not become agitated as a result of questions by the defense. Above all, if you don’t know the answer to a question, say so. Don’t guess at answers or compromise your honesty in any way”.

Because the DRE is essentially acting as and is offering expert testimony, they are also trained on resume preparation and maintenance. They are further trained that the principal purpose of the resume is to help establish their qualifications for testifying in court as a DRE.

During their training, the DRE is admonished that because they are “key” witnesses for the prosecution, the defense will “try very hard to cast doubt on your testimony”. The manual indicates that when the DRE is confronted with a defense challenge to other possible explanations for what was observed, they are to respond by making it clear that their conclusions about drug influence “are not simply one plausible interpretation of the observed facts, but the only logical interpretation”.

F. Attacking the DRE’s Qualifications and Opinions

General Requirements for Admission of Expert Testimony: The first requirement for the admission of expert testimony is that it relate to some technical or other specialized knowledge and be beyond the purview of the “average” layperson. The second requirement is that it meet the threshold of reliability. The

third requirement is that the proposed testimony be relevant. Generally it is the second requirement that is at issue in the drugged driver trial.

Davis/Frye Standard : Michigan courts evaluate the admissibility of novel scientific or medical evidence based on the “Davis-Frye” Test. This test is derived from the Michigan Supreme Court case of People v Davis, 343 Mich 348 (1955), and the Federal case of Frye v United States, 293 F 1013 (DC Cir 1923).

Under Davis- Frye a party who wishes to challenge scientific or medical evidence must first establish that it is novel. Craig v Oakwood Hospital, 249 Mich App 534 (2002). If a party cannot meet this initial burden of proof, then a Davis-Frye hearing is not required.

Error! Hyperlink reference not valid. On the other hand, if the Court is satisfied that the challenged evidence is novel, then an evidentiary hearing is mandatory. The responding party then bears the burden of proof to show that the evidence has general acceptance in the scientific or medical community. At least ostensibly the ultimate issue is the reliability of the proffered evidence. People v Beckley, 434 Mich 691 (1990).

A factor of significance to bear in mind, (and one that ought to always be raised with these types of evidence issues), is that in making its determination the Court may only consider the testimony of *impartial* experts whose livelihoods are not closely connected with the evidence in issue. Anton v State Farm Mutual

Automobile Insurance Co, 238 Mich App 673 (2000). Also, Michigan Courts appear to be trending toward a focus on the reliability of the methodology rather than the reliability of the principle or technique. Id.

MRE 702: In Addition to the Davis-Frye, Michigan Courts also may require an analysis based on MRE 702, which provides: “If the court determines that recognized scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise”. While there is at least one opinion that suggests that novel scientific evidence may be evaluated based only on MRE 702 [Nelson v American Sterilizer Co, 223 Mich App 485 (1997)], most published cases suggest that it is appropriate for the trial courts to use both standards in evaluating novel scientific evidence.

Under MRE 702 the focus should be whether the novel scientific evidence relies on proper scientific methodology and principles. At the evidentiary hearing, make the expert provide support for his opinion, then ask the court to determine if his supporting evidence is independent and objective and whether or not the principle or technique is found in recognized scientific and/or medical literature.

[Like the Daubert standard discussed below] an evidence challenge based on MRE 702 will cause the Court to consider whether the principle or technique

involved or challenged is “generally accepted as reliable within the relevant scientific or medical community”. This standard makes the issue of how “novel” the evidence might be is much less a focus so long as a foundation for trustworthiness is reached. If such a foundation is presented to the Court, then one may argue that the expert testimony is admissible no matter how novel.

The Recently Amended MRE 703: MRE 703 was amended on March 25, 2003, and the changes become effective beginning on September 1, 2003. These changes are significant, and may also have an impact on the admissibility of the DRE’s opinion. However, the Court first determine that the police officer is providing an “expert” rather than a “lay” opinion. The rule provides: “The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. The court may require that underlying facts or data essential to an opinion or inference be in evidence.”

If the rule applies, then it is probably safe to assume that the “facts” upon which the witnesses bases his opinion have been or will be admitted into evidence. These facts are usually case-specific. It is far less clear that the “data” upon which he bases his opinion will be admitted into evidence. Here “data” refers to extrinsic facts, experiments or authoritative writings.

However, the Michigan Advisory Committee Report, August 2000, at page 12 indicates “in the same vein, we emphasize that the facts or data that must be in evidence to support an expert opinion are the facts or data ‘in the particular case,’ as the rule states. As is perhaps obvious, the rule is not intended to require independent proof of the literature, studies, experiments, etc. that qualify a witness as an expert in the first instance”.

The Daubert/Kumho Tire Standard : Two cases that were decided in the 1990's by the United States Supreme Court have had a significant impact on the rules of evidence as they apply to expert testimony, at least at the Federal Level. These cases are Daubert v. Merrill Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) and Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137 (1999).

In following Daubert trial judges are required to become “gatekeepers” of scientific evidence and to decide whether expert testimony will assist the trier of fact, as well as whether the proffered testimony amounts to scientific knowledge. In other words, Daubert addresses both the foundational requirements of relevance and reliability.

Daubert requires trial judges to apply a non-definitive “checklist” in reaching their determinations. The factors set forth in Daubert include the following: (a) Whether the proposition is testable; (b) Whether the proposition has in fact been tested; c) Whether the proposition has been subjected to peer review

and publication; (d) Whether the methodology or technique has a known or potential error rate; (e) Whether there are standards for using the technique, and; (f) Whether the methodology is generally excepted.

In Kumho Tire, the Supreme Court held that the admissibility of expert testimony that is based on technical or specialized knowledge should also be subjected to the analysis set forth in Daubert. The Court also reaffirmed that the Daubert factors are not restrictive, but rather are flexible and are to be applied on a case-by-case basis. Kumho Tire has had a significant impact on so-called “soft science” including, among other things, DREs.

The Effect of Daubert: The following is an excerpt from the excellent resource Medical-Legal Aspects of Alcohol, Fourth Edition (2003): “Because of the substantial longevity of the Frye “general acceptance” standard, The Daubert case, which announced a clean break with the Frye tradition, quickly became an oft-cited decision of great significance in the legal field. But scientist and attorneys must take caution not to view Daubert for more than it means. While a pronouncement of the nations’s highest tribunal must necessarily be studied and reckoned with, Daubert deals strictly with the Federal Rules of Evidence, and their affect on Frye. As such, the Supreme Court’s opinion is determinative and binding only insofar as it pertains to admissibility standards in the federal court system. The individual states are not bound by the Federal Rules of Evidence.

Consequently, the Supreme Court opinion does not directly resolve, or even address, the admissibility of scientific evidence in state courts. Individual states may employ different criteria and have the discretion to reject the Daubert rationale in favor of continuing their own alternative evidentiary tests. A relevant factor in this consideration will likely be whether, and to what degree, the state jurisdiction had elected to adopt the provisions of the Federal Rules of Evidence as its own rules of evidence.

Predictably, state courts which have considered the issue have come to varied conclusions based upon these jurisdictions' historical treatment of the admission of expert testimony. For example, Iowa, Louisiana, Massachusetts, Montana, New Mexico, Oklahoma, South Dakota, Texas, Vermont and West Virginia have accepted Daubert as their own test of admissibility. In contrast California, Florida, Nebraska, New York and Utah have elected to adhere to the Frye test notwithstanding Daubert. Court opinions in the state of Washington suggest the potential for two standards of admissibility, one for civil cases and one for criminal cases. Still other jurisdictions, to the extent that only an intermediate appellate court has considered this issue, merely iterate the fundamental truth that their current standard of evidentiary admissibility continues unless and until their state Supreme Courts expressly determine what, if any, impact Daubert should have in those jurisdictions. As this disparity in judicial treatment makes evident,

while an understanding of the principles of Daubert is important, if for no other reason that the manner in which the Supreme Court's opinion has rapidly permeated this country's jurisprudence, the only judicial body with the authority to determine whether Daubert is binding in a particular state is the highest appellate court of that jurisdiction. Id. at 342, 343.

G. Preparing for the “Drugged Driver” Trial

As with all trial work, thorough preparation is essential. Because of the subject matter, this preparation will necessarily include learning as much as possible about the drugs at issue, including how those drugs are absorbed, distributed and eliminated. Also, how those drugs were analyzed, in other words, by what testing protocol. Usually blood is drawn and tested using gas chromatography/mass spectrometry, so it will be important to understand these testing methods. Finally, what factors observed in your case lead to the DRE's opinion.

In addition to understanding the science, the lawyer must also have a thorough understanding of the training and background of the DRE. Prior testimony of the DRE can be very helpful in this regard, and should be obtained whenever possible. It will also be helpful to obtain, review and understand the DRE Student Manual, and if feasible, to take a DRE training course.

Trial preparation should also include a thorough understanding of the rules of evidence, and the applicable case law, and to understand how they may apply to the admissibility of the proffered evidence.

Finally, because (to this writer's knowledge) there are currently no DREs employed in the State of Michigan, and therefore, no case law directly on point, defense counsel should challenge the admissibility of the DRE's conclusions in every case.

Obviously gaining an at least working understanding of such a large volume of information and material takes a great deal of time and effort, but doing so is essential to fulfill counsel's ethical duty of zealous advocacy.

APPENDIX A

DRE Drug Categorization: Based on Patterns of Signs and Symptoms

By

Thomas E. Page

Los Angeles Police Department (ret.)

Drug Recognition Experts (DRE) classify the drugs of abuse into seven categories. This categorization system is based on the premise that each drug within a category produces a pattern of effects, known as signs and symptoms. This DRE categorization system is analogous to a handwritten signature, rather than a fingerprint. Each time a signature is written, it will be slightly different. The signature will still be recognizable as identifying a specific individual. Fingerprints, on the other hand, do not change.

Practically, this means that although there are numerous drugs within each of the seven categories, the overall pattern of effects within the category at hand is the same. The effects can and do vary from drug to drug, primarily in terms of intensity and duration of action.

The effects of any drug depend upon many factors. A major factor is amount, that is, the dose. Generally, the effects of a drug are dose-dependent. More of the drug, such as alcohol, will generally produce more pronounced effects. The effects also depend on the user's tolerance to the drug, how the drug was administered, the drug's purity, the user's expectations, coexisting illness, fatigue, and the presence of other drugs. Also, for

many reasons, individuals vary in their response to the same drug. For example, people differ in metabolic rates. The effects of a drug also vary in the same individual. Indeed, rarely will a single individual experience or display all the effects associated with a drug.

Drug abusers use drugs for effects on the Central Nervous System (CNS), primarily the brain. If a drug does not affect the brain, then it will not be abused (although, of course, it may be misused).¹ The seven DRE drug categories are: CNS Depressants (including alcohol), Inhalants, Phencyclidine, Cannabis, CNS Stimulants, Hallucinogens, and Narcotic Analgesics.

Central Nervous System Depressants

This category includes the most widely abused drug, alcohol. In addition, the category consists of barbiturates, non-barbiturates that have barbiturate-like effects, anti-anxiety tranquilizers, anti-psychotic tranquilizers, certain anti-depressants, and certain pharmaceutical combinations that contain more than one type of CNS Depressant. The benzodiazepines², chloral hydrate, GHB²³, methaqualone (Mandrax), lithium, phenobarbital, the sedating antihistamines, and many other substances are included in this category. Commonly referred to as "downers," and also as sedative-hypnotics, the effects

¹Misuse refers to an inappropriate use of a drug. For example, taking an antibiotic for a viral infection is misuse. Abuse refers to the use of a substance for psychoactive (mind altering) effects.

²Benzodiazepines are anti-anxiety tranquilizers that share a similar chemical structure. Examples include: Valium (diazepam), Librium, Xanax, Halcion, flunitrazepam ("roofies" or Rohypnol), Klonopin (clonazepam) and many others.

of these drugs at intoxicating doses mirror the effects of alcohol. Importantly, however, they are not detected by an alcohol breath test, and do not produce an odor of an alcoholic beverage. Unlike the case with alcohol, there are generally no consistent correlations between the levels of these drugs ingested and the degree of intoxication. These drugs produce relaxation, drowsiness, impaired balance and coordination, slurred speech, a lowering of inhibitions, and increased risk taking. They also produce horizontal gaze nystagmus, do not generally affect pupil size, and typically depress the vital signs. The non-alcohol CNS Depressants are extremely dangerous when taken with alcohol. Pharmaceutical preparations of these drugs usually contain warnings advising the user not to drink alcohol at the same time, and to be aware that the drugs may impair driving.

Inhalants

The drugs in this category are usually inhaled. Three sub-categories comprise the inhalants: volatile solvents, aerosols, and anesthetic gases. The typical user of these drugs is young, and as a result, does not have ready access to more preferred drugs. Included are solvents, such as paint thinner, gasoline, toluene, turpentine, and paint. Nitrous oxide ("laughing gas"), Freon, ether, and many other substances are also included. Common indicators of the use of these drugs are the presence of chemical odors on the user, and residue of the substance on the user's face, clothing, and hands. Intoxicated individuals may look and act similar to one under the influence of alcohol. They may display impaired gait, slurred speech, bloodshot eyes, and a blank stare. Since these substances displace oxygen, the heart generally will accelerate, resulting in an increased pulse rate. Depending on the specific substance, blood pressure can be

elevated or depressed.²⁴ As with the CNS Depressants, these drugs generally produce horizontal gaze nystagmus, but do not usually affect pupil size.

Phencyclidine (PCP)

This drug is usually known as PCP, which represents its longer chemical name of phenylcyclohexyl piperidine. It is also commonly called phencyclidine. Although frequently classified as a hallucinogen, and sometimes as a depressant, a stimulant, or an analgesic, PCP is appropriately termed a dissociative anesthetic. The drug ketamine³⁵, which has uses in veterinary medicine, in pediatric surgery, and in other areas, is included in this category, as are chemical analogs of PCP.

The typical effects of PCP are elevated vital signs, accompanied by both horizontal and vertical gaze nystagmus. In addition, rigid skeletal muscles, a blank stare, an absence of pain, hallucinations, and many other effects may be evident. PCP users may become suddenly violent, and pose an extreme danger to police officers. Many non-lethal control devices, such as "taser"³⁶ dart guns, have been developed in order to subdue the PCP user.

4

29 The anesthetic gases cause blood vessels to enlarge or dilate. This may cause a drop in blood pressure.

5

30 Ketamine is used legitimately only in an injectable form. The Physician's Desk Reference (PDR) includes ketamine. Its effects are basically identical to that of PCP.

6

31 "Taser" is an acronym for Thomas A. Swift Electronic Rifle.

Cannabis

This category, which includes marijuana, hash, hash oil, and the synthetic drug dronabinol³⁷, is the most widely abused illicit drug. Although it has a popular reputation as a relatively benign drug, it is extremely impairing, affecting judgment, depth perception, ability to maintain attention, as well as having effects on the cardiovascular system. Cannabis causes blood shot eyes, accelerated heart rate (tachycardia), muscle tremors, forgetfulness, and many other effects. Unlike the first three categories (CNS Depressants, Inhalants, and PCP), this category does not produce horizontal gaze nystagmus. Users of cannabis frequently use alcohol, as well as other drugs, at the same time.

Central Nervous System Stimulants

This category includes the ubiquitous cocaine in all its various forms, amphetamine, methamphetamine, ephedrine, Ritalin, certain diet pills, and other related substances. Commonly known as the "uppers," the effects of these drugs mimic the body's "fight or flight" response, the autonomic nervous system's response to perceived danger.³⁸ Their effects include dilated pupils, elevated vital signs, hyper-alertness, rapid

³²Dronabinol's brand name is Marinol. Listed in the Physician's Desk Reference, it is a U.S. Drug Enforcement Administration Schedule II drug. Its uses include combating nausea induced by cancer chemotherapy. Dronabinol is synthetic tetrahydrocannabinol, the psychoactive component of marijuana.

³³These drugs are sometimes called sympathomimetics or adrenomimetics. This means that they mimic the naturally occurring and appropriate response of the body to danger.

and agitated body movements, extreme weight loss accompanied by deteriorating health and hygiene, and a diminished ability to "filter" environmental stimuli, such as noises and movement. CNS Stimulants do not produce horizontal gaze nystagmus. The user may overreact to seemingly minor events, and may view minor inconveniences as elaborate plots. As the effects wear off, the user may physiologically "crash," and may appear nearly the opposite of when he or she was under the influence of the drug. The user may then sleep for long periods, may wake voraciously hungry, and may be extremely dysphoric.

Hallucinogens

Hallucinogens are used for their distorted sensory perceptions known as hallucinations. In many respects, they are closely related to the CNS Stimulants, as is evidenced by the facts that they also cause dilated pupils and elevated vital signs, and do not produce horizontal gaze nystagmus. The user may experience a mixing of the senses, called synesthesia, in which the user may "hear" visual stimuli, such as colors, and may "see" sounds, such as music. LSD, psilocybin, mescaline, peyote, bufotenine, morning glory seeds, jimson weed, nutmeg and the psychedelic amphetamines are some of the drugs in this category. The psychedelic amphetamines include MDMA, or methylenedioxy methamphetamine, which is known in the vernacular as "Ecstasy," and many other related preparations. Very popular in the 1960s, these drugs experienced a resurgence of use in the 1990s.

Narcotic Analgesics

This final category includes the opiates, such as morphine, codeine, percodan, heroin, meperidine, methadone, fentanyl, OxyContin, and numerous others.³⁹ These drugs relieve pain, but also produce sedation. The specific effects include constricted pupils, depressed vital signs, slow and deliberate movements, and forgetfulness. These drugs do not produce horizontal gaze nystagmus. Although these drugs are frequently injected, more users, because of concern over the spread of infectious disease through the sharing of hypodermic needles, are insufflating (intranasal administration) and inhaling drugs such as heroin.³¹⁰ These drugs are known for their physically addictive qualities, as well as for the extremely unpleasant, though not life-threatening, withdrawal syndrome.

Poly-drug Use

Poly-drug use is the norm for today's drug user. Poly-drug use, also termed poly-pharmacy and multi-habitation, simply means that the drug user is using more than one category of drugs simultaneously or serially. Often, the drugs have nearly opposite effects. For example, an extremely common drug combination in many parts of the United States is the "speed ball." This slang term refers to combining a CNS stimulant,

³⁴The term "opioid" is often applied to this category. This means that the effects are similar to opium, although the substance may not contain any actual opium.

³⁵The National Institute of Drug Abuse and the National Institutes of Health sponsored the Heroin Use and Addiction: A National Conference on Prevention, Treatment, and Research, in Washington, DC in September of 1997. Researchers reported that the potency of street heroin has increased substantially, thus making insufflating (snorting) heroin more attractive and effective.

usually cocaine, with a narcotic analgesic, typically heroin. In many respects, these drugs have opposite effects. For example, cocaine dilates the pupils and elevates the vital signs, whereas heroin constricts the pupils and depresses the vitals. Contrary to what defense attorneys attempt to coax the DRE to say, neither drug "cures" the effects of the other. What typically occurs is that the user displays a mixture of signs and symptoms, such as dilated pupils with depressed vitals, that can best be explained by poly-drug use.

DREs apply four concepts to interpret poly-drug signs and symptoms: additive, antagonistic, overlapping, and null.

"Additive" means that each of the drugs used produce the same effect. Each of the drugs reinforces a specific effect of the other. For example, CNS stimulants and cannabis independently elevate pulse rate. Taken together, the user's pulse will be elevated, probably to a greater degree than either drug would separately. Each drug is reinforcing an effect of the other.

"Antagonistic" means that each of the drugs produces an opposite effect. Cocaine dilates the pupils, while heroin constricts them. When taken together, the user's pupils may be dilated, may be constricted, or may be within the normal range (3.0 mm to 6.5 mm diameter). The effects displayed are dependent on the dose of each of the drugs, the user's tolerance to each of the drugs, and importantly, the point in time that the user is evaluated by the DRE. Cocaine, a short-acting drug, may "wear off" quickly, and the effects of the heroin may then dominate.

An "overlapping" effect refers to the case in which one of the drugs produces the effect, but the other drug is neither additive nor antagonistic to it. For example, alcohol produces horizontal gaze nystagmus. If alcohol is taken with cocaine, a drug that does

not cause horizontal gaze nystagmus, the user will display nystagmus - again, due to the alcohol.

"Null" effect refers to a combination of drugs in which neither of the drugs used produces the effect. For example, cocaine does not produce horizontal gaze nystagmus; neither does heroin. Taken together, the user will not have nystagmus since neither of the drugs produces nystagmus. To paraphrase an old rock 'n roll song, "Nothin' and nothin' means nothin'.