Driver Risk Inventory-2

An Inventory of Scientific Findings

Volume 3

The *DRI-II Inventory of Scientific Findings* consists of two volumes. Volume 1 can be accessed on the DRI-II website (www.driver-risk-inventoryii.com) by clicking on the 'DRI-II Research' link.

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Preface

This document is the third in a series of volumes that present a cumulative record of the evolution of the DRI-II to the DRI-2. The DRI-II has been researched and standardized on over 1.75 million DUI/DWI offenders. Its database is now one of the largest DUI/DWI offender databases in the United States. The DRI-II database has been compiled since 1980, in over 34 states and two foreign countries.

- Volume 1: reviews 63 research studies chronologically from 1980 to 2008. Some of the early research includes original criterion validation studies conducted with established Minnesota Multiphasic Inventory (MMPI) scales, polygraph examinations, etc.

- Volume 2: Research conducted from 2009 – 2013 is summarized in Volume (Volume 2). Study results demonstrate the reliability, validity and accuracy of the DRI-II.

This volume represents the transition from the DSM-IV to DSM-5 Substance Use Disorder Classification schema. In addition, several other changes were made to enhance the psychometric properties of the DRI-2. Additional updates include a reduction from 140 items to 113 statistically supported items that comprise 6 scales. Behavior Data Systems, commitment to quality continues.

As with the past version, the DRI-2 report explains client's attained scores and makes specific intervention and treatment recommendations. It also presents Truth-Corrected scores, significant items, and continues to measure the severity of DUI/DWI offender problems with respect to driver risk, substance (alcohol and drugs) abuse and mental health. It is a risk and needs assessment instrument. It has demonstrated reliability, validity and accuracy, and it correlates impressively with both experienced staff judgment and other recognized tests. Research on the DRI-2 is continuous and results directly impact is ongoing improvements in test design to provide possible recidivism predictors. , This process ensures that evaluators have the most accurate information possible for decision-making and treatment planning.

The remainder of this volume will summarize the DRI-2, review the unique features of the test, describe the scale and items, as well as, provide a chronological summary of DRI-2 reliability and validity research results.

Driver Risk Inventory - 2

The DRI-2 has empirically-demonstrated reliability, validity, and accuracy and, is a popular and widely-used, DUI/DWI offender screening instrument, or self-report test. It was rated the best, DUI/DWI assessment, or test, by the National Highway Traffic Safety Administration (NHTSA). The NHTSA review noted that the DRI-2 was the only DUI/DWI offender assessment that incorporated a measure of driver risk.

DRI-2 has been administered to over 1.75 million DUI/DWI offenders, to date, and that number continues to grow. DRI-2-related studies have been published in peer review journals. In addition, the DRI-2 is currently being used in ongoing, longitudinal recidivism research. Those

interested can find a list, of DRI-2 research publications located at www.driver-risk-inventory-2.com or at www.bds-research.com

Risk Principle
The DRI-2 makes accurate, efficient, and timely, DUI/DWI violator screening possible. In most counseling and treatment settings, clients are screened to determine the presence of problems, and if problems are present, to measure their severity. Contingent upon these assessment results, clients can, then, be referred to appropriate levels of intervention, or treatment.

Research has shown that placing clients in erroneously intensive, or non-intensive programs, can be detrimental to both the client and society (Andrews, Bonta & Hoge, 1990). When low risk clients were placed in high risk (intensive) treatment programs, low risk clients had a higher likelihood of relapse. Low risk clients are better served in low intensity programs. Similarly, high risk (serious problems) clients benefit most, when placed in intensive treatment programs. The DRI-2 allows for appropriate matching, of DUI/DWI offender treatment with individual risk levels.

Trends
Tougher laws and increased awareness have helped to substantially decrease the number of alcohol-related, driving fatalities in the United States, but other emerging trends, in impaired driving, have become problematic. Illicit drug use, as well as the availability and potency of these drugs, has increased in recent years. Another disturbing trend is driving under the influence of multiple substances (polysubstance impairment). In addition, the number of women who use alcohol has increased, significantly, over the last several decades, naturally leading to an increase in the number of female drinking drivers (White, 2003). The DRI-2 accounts for these trends.

Not only does the DRI-2 measure alcohol use and the severity of abuse, the independent measure of drug use/abuse is also included. Poly-substance abuse is identified, when both Alcohol Scale and Drug Scale scores are problematic (at the 70th percentile or above). The DRI-2 has been standardized on both male and female, impaired drivers. The expanding, DRI-2 database is statistically analyzed each year. This feature represents a unique advantage of the DRI-2. As the DRI-2 database continues to grow, new research discoveries and innovative software updates are anticipated. Ongoing research and standardization ensure that the DRI-2 will remain at the forefront of DWI/DUI assessment and will, accommodate current and future changes in substance use, as well as demographic trends. Gender differences have already been identified (and remedies developed), as a result of this research.

Format/Versions
The DRI-2 was designed to provide relevant driver risk-related information for DUI/DWI staff decision-making. The DRI-2 measures (or scales) were chosen to further the understanding of behavioral patterns and traits relevant to understanding problem drinkers, substance (alcohol and other drugs) abusers, and high risk drivers. The DRI-2 can be administered individually or in groups and is appropriate for people with sixth grade or higher reading abilities (available in English and Spanish). The language is direct, non-offensive and uncomplicated. Automated scoring and interpretive procedures help ensure objectivity and accuracy.

The DRI-2 consists of 113 true/false and multiple-choice items test items and takes 25 minutes to complete. The DRI-2 is available on diskettes, USB flash drives, or on the internet. Tests can be administered in paper-pencil, test booklet format, or the respondent can complete the DRI-2 on a computer monitor. Regardless of how the DRI-2 is administered, fast and accurate computer-scoring and report printing are completed, within 2½ minutes.

The DRI-2 report is a comprehensive profile of a DUI/DWI offender. Scale scores are explained and presented graphically, and scale score-related recommendations are provided. Another useful component, of the DRI-2 report, is the *Significant Items* section where the item responses are printed in Section 3 of the DRI-2 report. Significant items represent self-admissions, or important self-report responses. They are provided for reference and do not determine the respondent's scale score. A DUI/DWI offender can have a high scale score and few significant items, or vice versa. Significant items augment scale scores and, sometimes, provide a more complete and individualized understanding of the offender.

Driver Risk Inventory Scales

1. Truthfulness Scale
2. Alcohol Scale
3. Drug Scale
4. Driver Risk Scale
5. Stress Coping Abilities Scale
6. Substance Use Disorder Classification

The scales listed above represent domains associated with DUI and repeat offending. Public health and safety research have formed the basis for these scales and the items contained therein. The DRI is to be used in conjunction with a review of available records, a focused interview and experienced staff judgment.

Unique Features

Truth Correction

A sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for DRI scales. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness Scale was developed. **The Truthfulness Scale establishes how honest or truthful a person is while completing the DRI.** Correlation's between the Truthfulness Scale and all other scales permit identification of error variance associated with untruthfulness. This error variance can then be added back into scale scores, resulting in more accurate "Truth-Corrected" scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide. Truth-Corrected scores are more accurate than raw scores.

The **Truthfulness Scale** is a unique feature of the DRI-2. Socially desirable responding can have a significant impact on assessment results (Blanchett, Robinson, Alksnis & Serin, 1997).

Offender denial and problem minimization has been shown to exacerbate lack of treatment progress (Murphy & Baxter, 1997; Scott & Wolfe, 2003) and increased probability of treatment dropout (Daly & Peloski, 2000), as well as increased probability of recidivism (Knopp, Hart, Webster & Eaves, 1995; Grann & Wedin, 2002). One of the first major psychological tests, to use a truthfulness scale and truth-corrected scores, was the Minnesota Multiphasic Personality Inventory (MMPI), which has become the most widely used test in the United States and, likely, in the world. The MMPI's truth-correction methodology has been influential in psychometrics ever since. The DRI-2 Truthfulness Scale has been correlated with the Alcohol Scale, Driver Risk Scale, Drug Scale, and Stress Management Scale.

- The DRI-2 truth-correction equation is similar to the MMPI's truth-correction procedure, and converts raw scale scores to truth-corrected scores. Truth-corrected scores are more accurate than raw scores. It is important to consider DUI/DWI offender truthfulness at the time of assessment. This is accomplished with the Driver Risk Inventory-2 (DRI-2).

Risk Range Percentile Scores: Each DRI scale is scored independently of the other scales. DRI scale scoring equations combine client pattern of responding to scale items, Truthfulness Scale and prior history that is contained on the DRI answer sheet. The Truthfulness Scale applies a truth-correction factor so that each scale score is referred to as a Truth-Corrected scale score. These Truth-Corrected scale scores are converted to the percentile scores that are reported in the client DRI report.

Risk Category	Risk Range Percentile	Expected Percentage
Low Risk	0 -39%	39%
Medium Risk	40 -69%	30%
Problem Risk	70 – 89%	20%
Severe Problem	90 – 100%	11%

DRI Database

Every time a DRI is scored the test data is automatically stored on the diskette for inclusion in the DRI database. This applies to DRI diskettes used anywhere in the United States and Canada. When the preset number of tests are administered (or used up) on a DRI diskette, the diskette is returned for replacement and the test data contained on these used diskettes is input, in a confidential (no names) manner, into the DRI database for later analysis. This database is statistically analyzed annually, at which time future DRI diskettes are adjusted to reflect demographic changes or trends that might have occurred. This unique and proprietary database also enables the formulation of annual summary reports that are descriptive of the populations tested. Summary reports provide important testing information, for budgeting, planning, management and program description.

Confidentiality (Delete Client Names)
Client privacy and security is of the utmost importance. When using the DRI-2, you can rest assured, knowing that your client's privacy and confidentiality are safe. Any identifying information (name, ID numbers, etc.) is encrypted, before being stored in our database. A secure algorithm, built into the DRI-2 software, unencrypts this information, before displaying it to you over the web. This ensures that only you can access the data and reports for your clients. This encryption method is HIPAA (federal regulation 45 C.F.R. 164.501) compliant.

Scale Descriptions

DRI-2 scales were developed from large item pools. Initial item selection was a rational process based upon clearly understood definitions of each scale. Subsequently, items and scales were analyzed for final test selection. The original pool of potential test items was analyzed and the items with the best statistical properties were retained. **Final test and item selection was based on each item's statistical properties**. It is important that users of the DRI familiarize themselves with the definition of each scale. For that purpose a description of each DRI scale follows.

1. Truthfulness Scale
Measures how truthful the DUI/DWI offender was, while completing the test. It identifies guarded and defensive people who attempt to fake good. Assessment results can be impacted by 'socially desirable responding' (Blanchett, Robinson, Alksnis, & Serin, 1997). Most, DUI/DWI offender tests do not incorporate a measure of truthfulness (Bishop, 2011). Truthfulness Scale scores, at or below the 89th percentile, mean that all DRI-2 scale scores are accurate. When the DRI-2 Truthfulness Scale score is in the 70 to 89th percentile range other DRI-2 scale scores are accurate, because they have been Truth-Corrected. In contrast, when the Truthfulness Scale score is at, or above the 90th percentile, this means that all DRI-2 scales are inaccurate (invalid), because the DUI/DWI offender or respondent was overly guarded, read things into test items that aren't there, was minimizing problems, or was caught faking answers. If not consciously deceptive, offenders, with elevated Truthfulness Scale scores, are uncooperative (likely in a passive-aggressive manner), fail to understand test items, or have a need to appear in a good light. Truthfulness Scale scores at, or below the 89th percentile, mean that all other DRI-2 scale scores are accurate. One of the first things to check, when reviewing a DRI-2 report, is the Truthfulness Scale score.

2. Alcohol Scale
Measures alcohol use and the severity of abuse. Alcohol refers to beer, wine, and other liquors. A recently-published study found that the Alcohol Scale, percentile score was a strong predictor of DUI/DWI offender recidivism (Bishop, 2011). An elevated (70 to 89th percentile), Alcohol Scale is indicative of an emerging, drinking problem. An Alcohol Scale score, in the severe problem (90 to 100th percentile) range, identifies established and serious drinking problems. Elevated, Alcohol Scale scores do not occur by chance.

Alcohol involvement can range from abstinence (non-drinking) to dependency (Maisto & Saitz, 2003). A history of alcohol problems (e.g., alcohol-related arrests, DUI/DWI convictions, etc.) could result in an abstainer (current non-drinker) attaining a low to medium risk, scale score. Consequently, safeguards have been built into the DRI-2, to identify "recovering alcoholics." For example, the offender's self-reported, court history is summarized on the first page of the DRI-2 report. And, on page 3 of the report,, the DUI/DWI offender's multiple choice (items 74 to 89) answers are printed for easy reference.
Scores, in the severe problem (90 to 100th percentile) range, are a malignant, prognostic sign. Concurrently, elevated, Alcohol Scale, Drug Scale, and Driver Risk Scale scores identify a, particularly, dangerous driver. Here, you have a person with poor driving skills, who is even further impaired, when drinking or using drugs.
In intervention and treatment settings, the offender's DRI-2 Alcohol Scale score can help staff work through offender denial. More people accept objective, standardized assessment results, as opposed to someone's subjective opinion. This is especially true, when it is explained that the DRI-2 has been given to over one million DUI/DWI offenders and, that elevated scores do not occur by chance. The Alcohol Scale can be interpreted independently, or in combination with other DRI-2 scales.

3. Drug Scale
Measures drug use and severity of drug abuse. Drugs refer to marijuana, ice, crack, cocaine, ecstasy, amphetamines, barbiturates, and heroin. DUI/DWI can be defined as driving under the influence, of any alcohol or drugs (Nochajski & Stasiewicz, 2006). Dupont (2011) noted that, in a 2009 study, approximately one-third (33.0%) of drivers, in fatal injury crashes (for whom drug test results were available), tested positive for drugs other than alcohol. An elevated (70 to 89th percentile), Drug Scale score identifies emerging drug problems. A Drug Scale score, in the severe problem (90 to 100th percentile) range, identifies established drug problems and drug abuse.

A history of drug-related problems (e.g., drug-related arrests, prior DUI/DWI convictions, drug treatment, etc.) could result in an abstainer (current non-user) attaining a low to medium risk, Drug Scale score. For this reason, precautions have been built into the DRI-2, to insure correct identification of "recovering" drug abusers. Many of these precautions are similar to those discussed in the above Alcohol Scale description.

Concurrently, elevated, Drug and Alcohol Scale scores are indications of polysubstance abuse, and the highest score reflects the offender's substance of choice. Very dangerous drivers are identified, when both the Drug Scale and the Driver Risk Scale are elevated. Any Drug Scale score, in the severe problem (90 to 100th percentile) range, should be taken seriously. The Drug Scale can be interpreted independently, or in combination with other DRI-2 scales.

4. Substance Use Disorder Classification Scale
The Driver Risk Inventory (DRI-2) incorporates two methods, classification and dimensional scaling, for assessing substance use severity. The DRI-2 employs separate Alcohol and Drug Scales, each focusing independently and exclusively, on alcohol or drug use. The DSM-5, on the other hand, blends alcohol and drug use in its Substance Use Disorder classification. DRI-2 scales use short-term, time referents, like recently or now; whereas, the DSM-5 uses longer term

or, even, lifetime referents. The DRI-2 scales use percentile scores to measure risk severity. The DSM-5 classifies risk, using endorsement of 11 criteria/symptoms, classifying substance use problems, as mild, moderate, and severe. Researchers (Kessler, 2002; Kline, 2009) advocate using both types of measurement methods, in one test.

> **Substance Use Disorder Scale:** Substance (alcohol/drug) use disorders span a wide variety of problems, arising from substance use, and cover 11 different criteria:
>
> 1. Taking the substance (alcohol/drug) in larger amounts, or for longer than the you meant to
> 2. Wanting to cut down or stop using the substance, but not managing to
> 3. Spending a lot of time getting, using, or recovering from use of the substance
> 4. Cravings and urges to use the substance
> 5. Not managing to do what you should at work, home, or school, because of substance use
> 6. Continuing to use, even when it causes problems in relationships
> 7. Giving up important social, occupational, or recreational activities, because of substance use
> 8. Using substances again and again, even when it puts the you in danger
> 9. Continuing to use, even when the you know you have a physical or psychological problem that could have been caused, or made worse by the substance
> 10. Needing more of the substance to get the effect you want (tolerance)
> 11. Development of withdrawal symptoms, which can be relieved by taking more of the substance.

Dimensional and Categorical Measures of Problem Behavior

Kessler (2002, 2008) advocates using both "dimensional" and "categorical" measures, in the same test. Dimensional measures use recent time frames (e.g., the past year, last month, or now), to measure the severity of alcohol and/or drug use. In contrast, categorical measures gather long term, or lifetime occurrence information, to help with treatment planning. DRI-2 Alcohol and Drug Scales are "dimensional," whereas, DSM-5 uses both. Even so, DSM-5's categorically-based measures can produce, seemingly, dissimilar results. For example, you could have a DRI-2 Alcohol or Drug Scale score in one severity range (e.g., low risk) and a DSM-5 Substance Use Disorder classification in another severity range (e.g., moderate risk). **Contributing factors to these different severity classifications includes**: Dimensional versus categorical measurement; the DSM-5's Substance Use Disorder category incorporates both alcohol and drugs, whereas, the DRI-2 independently assesses alcohol and drugs; DSM-5 expunged, or deleted the term "abuse," while the DRI-2 continues to use it; and, severity scale classification methodology differs. To sum up, DRI-2 Alcohol and Drug Scales enable matching of problem severity, with treatment intensity, whereas, DSM-5 substance Use Disorder results can guide treatment planning.

The American Society of Addiction Medicine (ASAM) states, there can be exceptions to DSM classifications and, these exceptions are made according to the **severity** of a person's substance abuse. The severity of a person's substance abuse determines their recommended level of intervention and/or treatment. In summary, the Alcohol and Drug Scales measure **severity** of substance (alcohol and other drugs) abuse, whereas the Substance Use Disorder Scale **classifies** people as no problem, mild, moderate, or severe substance (alcohol/drug) use disorder.

5. Driver Risk Scale

Measures driving risk, e.g., aggressive, irresponsible, or careless drivers. This scale is independent of the Alcohol, Drug, and Substance Abuse/ Dependency Scales. Some people are, simply, poor drivers. Elevated (70 to 89th percentile), Driver Risk Scale scores identify problem, prone drivers who would benefit from a driver improvement program. **Severe problem (90 to 100th percentile) scorers are, simply, dangerous drivers.** These are high probability, accident prone drivers. When the Driver Risk Scale and the Alcohol Scale and/or Drug Scale are elevated, a person's poor driving abilities are further impaired, by substance use, or abuse. According to the National Highway Traffic Safety Administration (NHTSA), which is the highest federal authority in the DUI/DWI field -- the DRI is the only, major DUI/DWI test that measures driver risk (Popkin, Kanneberg, Lacey, Waller, 1988). Consequently, other tests do not identify abstaining (non-drinking and non-drug use), dangerous drivers.

The Driver Risk Scale provides considerable insight into offender driving behavior and, that is overlooked by other DUI/DWI tests. DUI/DWI offenders tend to have poorer driving records, both prior to, and after their DUI/DWI arrests (Cavialoa, Stohmetz & Abreo, 2007). The Driver Risk Scale can be interpreted independently, or in combination with the DRI-2 Alcohol Scale, Drug Scale, and Stress Management Scale.

6. Stress Management Scale

Measures the DUI/DWI offender's ability to cope, effectively, with stress, tension, and pressure. How well a person manages stress, affects their driving safety. A recent study associated elevated stress levels, of individuals in a particular region, with a spike in the number of fatal traffic accidents (Association for Psychological Science, 2009). Furthermore, the DRI-2 Stress Management Scale percentile score was found to be a recidivism predictor for DUI/DUI offenders (Bishop, 2011). A Stress Management Scale score, in the elevated (e.g., problem risk) range, provides considerable insight into co-determinants, while suggesting, possible, intervention programs, like stress management. An offender scoring in the severe problem (90 to 100th percentile) range should be referred to a mental health specialist for further evaluation, diagnosis, and a treatment plan.

We know that stress exacerbates emotional and mental health problems. The Stress Management Scale is a non-introversive way to screen for established, (diagnosable) mental health problems. Stress coping problems can have a direct impact on a person's driving.

A particularly, unstable and perilous driving situation involves an elevated, Stress Management Scale, with an elevated Alcohol Scale, Drug Scale, or Driver Risk Scale. Poor driving abilities, along with substance abuse in an emotionally reactive person, who doesn't handle stress well operationally, defines a dangerous driver. **The higher the elevation of these scale scores -- the**

worse the prognosis. The Stress Management Scale can be interpreted independently, or in combination with other DRI-2 scales.

Additional Benefits and Services

A host of other, complimentary, benefits and features are included with test purchase. For example, these benefits include:

- Support Services
- Test Upgrades
- Annual Summary Reports (Program Summary)
- Human Voice Audio
- Scanner Scoring for high volume testing
- Data Input Verification Feature
- Available in English and Spanish (translation into other languages can be available upon request)

The DRI-2 combines comprehensive, time saving, and accurate DUI/DWI screening, with affordability and convenience.

Empirical Research

DRI-2 research is presented chronologically and represents internal examinations of items, score reliability, and evidence of validity. In addition, accuracy results are also presented for reader review. Readers interested in a comprehensive list of *Driver Risk Inventory* research can be found at www.bds-research.com.

76. Reliability Scores of the DRI-2 (2014)

This study marks one of the first examinations of the updated DRI-2 items. There were **985 DUI offenders in the sample.** Participants: The majority were single, Caucasian males, with at least a high school education. Offender Status: 61% were first-time offenders and 39% were repeat offenders. Accuracy: results were consistent with expected percentages except on the Driver Risk Scale, where Low Risk percentages exceeded expected percentages by about 20%.

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Colonial Community Corrections. Perfect reliability is 1.00 and the professionally accepted

standard of reliability for these types of instruments is .70 - .80 or higher (Murphy & Davidshofer, 2001).

Table. 177 DRI-2 Reliability Results (N=985, 2014)

Scales	Coefficient Alpha
Truthfulness	.86
Alcohol	.89
Driver Risk	.72
Drug	.87
Stress Management	.91

Results exceeded the professionally excepted standards and demonstrate score reliability of the DRI-2.

DSM-5 Substance Use Disorder Classification was also examined using the same sample of offenders. Results are provided in Table 178. The overwhelming majority of offenders (77%) did not meet the minimum established criteria.

Table 178. DSM-5 Classification Results (N = 985, 2014)

DSM-5 Classification	N	%
Not Met	761	77.3
Mild Problem	136	13.8
Moderate Problem	52	5.3
Severe Problem	36	3.7

An ad hoc analysis was conducted which examined first-time offenders and repeat offenders by the four DSM-5 classifications. Results are presented below in Table 179. As expected, repeat offenders were classified higher than first-time offenders. These results also underscore the validity of the DSM-5 classification system within the DRI-2; offenders with more problems are classified higher than first-time offenders.

Table 179. DSM-5 Classification by Offender Status (N = 985, 2014)

Offender Status		DSM5_Classification			
		Not Met	Mild Problem	Moderate Problem	Severe Problem
First-time	N	509	65	19	10
	%	84.4%	10.8%	3.2%	1.7%
Repeat	N	251	71	33	26
	%	65.9%	18.6%	8.7%	6.8%

77. Reliability Scores of the DRI-2 Using a Statewide Sample of DUI Offenders (2014)

This study marks one of the first examinations of the updated DRI-2 items. There were **1, 838 DUI offenders in the sample taken from a Statewide DUI evaluation program.** Participants: The majority were single, Caucasian males, with at least a high school education.

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Colonial Community Corrections. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 or higher (Murphy & Davidshofer, 2001).

Table 180. DRI-2 Reliability Results (N=1, 838, 2014)

Scales	Coefficient Alpha
Truthfulness	.84
Alcohol	.89
Driver Risk	.74
Drug	.89
Stress Management	.91

Results exceeded the professionally excepted standards and demonstrate score reliability of the DRI-2. The results are consistent with earlier reliability scores which provide evidence of score consistency for the DRI-2.

Using the same sample of 1, 838 DUI offenders, a correlation analysis was conducted to examine whether there was relationship between the DSM-5 total symptoms endorsed and Alcohol Scale and Drug Scale scores.

Table 181. Correlations for DSM-5, Alcohol & Drug Scales (N= 1, 838, 2014)

DSM5_PTS	Alcohol Scale	Drug Scale	
DSM5_PTS	1		
Alcohol Scale	.639**	1	
Drug Scale	.147**	.045	1

The result revealed a statistically significant relationship (p = .01) between the three variables, however the coefficients themselves demonstrate a low to moderate relationship. This supports the assertion that the Alcohol Scale and Drug Scale are not measuring the same constructs as the DSM-5. **The Alcohol Scale and Drug Scale are assessing similar issues, but are not redundant.**

78. Reliability Scores of the DRI-2 Using Statewide Offender Sample (2014)

This study marks one of the first examinations of the updated DRI-2 items. There were **1, 024 DUI offenders in the sample.** Participants: The majority were single (64%), Caucasian (67%), males (74%), with a high school education or higher (85.1%). Offender Status: 74% were first-time offenders and 26% were repeat offenders. Consequences of Current Arrest: 15% had charges reduced to reckless driving; 3% reporting another pending DUI at time of testing; 83% reported their license had been suspended or revoked, and 27% had already attending DUI schools. Accuracy: results were consistent with expected percentages except on the Driver Risk Scale, where Low Risk percentages exceeded expected percentages by about 20%.

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Colonial Community Corrections. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70 - .80 or higher (Murphy & Davidshofer, 2001).

Table 182. DRI-2 Reliability Results (N=1,024, 2014)

Scales	Coefficient Alpha
Truthfulness	.86
Alcohol	.89
Driver Risk	.72
Drug	.87
Stress Management	.91

Results exceeded the professionally excepted standards and demonstrate score reliability of the DRI-2.

DSM-5 Substance Use Disorder Classification was also examined using the same sample of offenders. Results are provided in Table 183. The overwhelming majority of offenders (82%) did not meet the minimum established criteria.

Table 183. DSM-5 Classification Results (N = 1,024, 2014)

DSM-5 Classification	N	%
Not Met	842	82.2
Mild Problem	108	10.5
Moderate Problem	43	4.2
Severe Problem	31	3.0

A secondary ad hoc analysis was conducted to examine DRI-2 risk range criteria (Problem Risk and Severe Problem) and DSM-5 classification (Moderate and Severe Risk). The purpose was to examine whether there was consistency is classification between these two approaches.

Table 184. Elevated Risk as Measured by DSM-5 and DRI-2 (N=1, 024, 2014)

	DRI-2 Alcohol Scale			
DSM-5 Classification	Problem Risk		Severe Problem	
	N	%	N	%
DSM-5 Moderate Risk	7	16.3	22	51.2
DSM-5 Severe Risk	4	12.9	17	54.8

As presented earlier, 7% (73) of the sample were classified as Moderate or Severe Risk using DSM-5 classification criteria; 5% (50) are represented in Table 184. Classification appears relatively consistent, however, there are 23 individuals had elevated risk on the DSM-5 criteria who were not classified as such on the DRI-2 scales. For these 23 individuals, areas of concern **may have been not have been directly related to alcohol and subsequently would not be reflected in the Alcohol Scale risk ranges.**

Table 185. Elevated Risk as Measured by DSM-5 and DRI-2 (N=1, 024, 2014)

	DRI-2 Drug Scale			
DSM-5 Classification	Problem Risk		Severe Problem	
	N	%	N	%
DSM-5 Moderate Risk	5	11.6	0	0
DSM-5 Severe Risk	4	12.9	4	12.9

Table 185 presents DSM-5 classifications and DRI-2 Drug Scale risk ranges. As noted earlier, 73 individuals met DSM-5 classification for elevated substance use risk. Only 13 individuals were classified by the DRI-2 as Problem Risk or Severe Problem. **The remaining 60 individuals were classified as Low Risk or Medium Risk on the DRI-2.** There may be several reasons which account for this, the Drug Scale measures specifically illegal drugs (not misuse or abuse of prescription drugs), and individual areas of concern may have been directly related to drug use and subsequently would not be reflected in Drug Scale Problem Risk and Severe Problem ranges.

Additional DRI-2 research will continue to explore reliability and the relationship between DRI-2 risk ranges and DSM-5 classifications.

79. Reliability Scores of the DRI-2 (2019)

This study is composed of DRI-2 tests administered by clients of Behavior Data Systems Ltd. There were **24,100 offenders tested in this sample.** Participants: The majority were single, Caucasian males, with at least a high school education. Offender Status: 65.9% were first-time offenders and 33.4% were repeat offenders. Accuracy: results were consistent with expected percentages except on the Alcohol Scale and Drug Scale. Greater than expected percentages of offenders in the Moderate and Severe Problem Range and on the Low Risk range on the Drug Scale.

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered. Perfect reliability is 1.00 and the professionally accept standard of reliability for these types of instruments is .70-.80 or higher (Murphy & Davidshofer, 2001).

Table. 186 DRI-2 Reliability Results (N=24,100 2019)

Scales	Coefficient Alpha
Truthfulness	.88
Alcohol	.91
Driver Risk	.90
Drug	.75
Stress Management	.94

Results exceed the professionally accepted standards and demonstrate score reliability of the DRI-2.

DSM-5 Substance Use Disorder Classification was also examined using the same sample of offenders. Results are provided in Table 186. The majority of offenders (63.8%) did not meet the minimum established criteria.

Table 187. DSM-5 Classification Results (N = 24,100, 2019)

DSM-5 Classification	N	%
Not Met	15369	63.8
Mild Problem	3706	15.4
Moderate Problem	1961	8.1
Severe Problem	3064	12.7

An ad hoc analysis was conducted which examined first-time offenders and repeat offenders by the four DSM-5 classifications. Results are presented below in Table 188. As expected, repeat offenders were classified higher than first-time offenders. These results also underscore the validity of the DSM-5 classification system within the DRI-2; offenders with more problems are classified higher than first-time offenders.

Table 188. DSM-5 Classification by Offender Status (N = 24,100, 2019)

		DSM5_Classification			
Offender Status		Not Met	Mild Problem	Moderate Problem	Severe Problem
First-time	N	11385	2075	1024	1391
	%	71.7%	13.1%	6.5%	8.8%
Repeat	N	3855	1606	933	1651
	%	47.9%	20.0%	11.6%	20.5%

80. DRI-2 Validity Analysis: First and Multiple Offender Comparison

Method

Participants in this study (N=24,100) consisted of DUI offenders; 17,434 (72.3%) of the offenders were male and 6,666 (27.7%) were female. Demographic composition of the sample follows. Age: 20 & under (4.4%); 21-30 (34.3%); 31-40 (24.4%); 41-50 (17.0%); 51-60 (14.6%); and 61 & over (5.3%). Ethnicity: Caucasian (81.8%); African American (7.0%); Hispanic (5.9%); Asian (1.1%); Native American (1.3%); and Other (1.6%). Education: Eighth grade or less (1.4%); Some high school (9.6%); GED (7.2%); Graduated HS (40.1%); Trade or technical school (1.9%); Some

college (17.5%); Graduated college (17.2%); and Attended graduated school (3.7%). Marital Status: Single (59.5%); Married (19.9%); Divorced (15.3%); Separated (3.0%), and Widowed (1.5%).

A discriminant validity analysis compared first-time offenders' and multiple offenders' DRI-2 scale scores. Offenders classified as first-time offenders are those having no more than one domestic violence arrest, whereas multiple offenders are those that have been arrested for domestic violence two or more times. Because DRI-2 scales measure problem severity, it was predicted that multiple offenders would obtain higher (more severe) scale scores than first-time offenders.

Table 189. DRI-2 Scale Score Comparisons of Offender Groups (N=24,100, 2019)

DRI-II/DRI-II Short Form Scale	First Offenders' Avg. Scores	Multiple Offenders' Avg. Scores	*T*-value	Level of Significance
Truthfulness Scale	10.30	9.58	*t*=9.47	p<.001
Alcohol Scale	9.67	21.53	*t*=-58.424	p<.001
Driver Risk Scale	10.22	10.30	*t*=-.90	p=.371
Drugs Scale	6.29	10.52	*t*=-26.18	p<.001
Stress Management Scale*	140.42	133.36	*t*=9.36	p<.001

*Note: Stress Management Scale scores are reversed, meaning that higher scores are associated with better stress coping skills. For all other scales, higher scores represent more severe problems.

As shown above in table 180, multiple offenders' scores on nearly all DRI-2 scales indicated more severe problems, with the exception of the Truthfulness Scale. First offenders had a higher average Truthfulness Scale score than multiple offenders, indicating that first offenders may by slightly more prone to denial or problem minimization than offenders with prior arrests. For all other scales, multiple offenders' average scores were higher (more severe) than those of first offenders, representing heightened problem severity. Multiple offenders' more severe problems are manifested as higher scale scores. There was a statistically significant difference on the Truthfulness, Alcohol, Drugs, and Stress Management Scales. On average, repeat offenders scored higher than first-time offenders on the Alcohol, Drug, and Stress Management Scales. First-time offenders scored higher than repeat offenders on the Truthfulness Scale. While repeat offenders scored higher on average than first-time offenders on the Driver Risk Scale, there was not a statistically significant difference in this sample.

These results corroborate the discriminant validity of the DRI-2. DRI-2 scales effectively differentiate between first offenders and repeat offenders that are expected to have more severe problems (multiple offenders).

81. Reliability Scores of the DRI-2 (2023)

This study is composed of DRI-2 tests administered by clients of Behavior Data Systems Ltd. There were **6,447 DUI offenders in this sample.** Participants: The majority were single (62.2%), Caucasian (66.8%) males (71.4%), with a high school or higher education level (83.1%). Offender

Status: 65.8% were first-time offenders and 33.7% were repeat offenders. Consequences of Current Arrest: 3.2% had charges reduced; 3.6% reported another pending DUI at time of testing; 74.9% reported their license had been suspended or revoked, and 39.4% refused a breath test at the time of arrest. Accuracy: Drugs, Driver Risk, and Stress Management Scales skewed towards lower risk ranges, Problem Risk on the Truthfulness and Severe Problem Risk were higher than expected.

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by the Clients of Behavior Data Systems, Ltd. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70-.80 or higher (Murphy & Davidshofer, 2001).

Table 190. DRI-2 Reliability Results (N=6,447, 2023)

Scales	Coefficient Alpha
Truthfulness	.87
Alcohol	.91
Driver Risk	.73
Drug	.90
Stress Management	.92

Results exceeded the professionally accepted standards and demonstrated the score reliability of the DRI-2.

DSM-5 Substance Use Disorder Classification was also examined using the same sample of offenders. Results were provided in Table 191. The majority of offenders (63.3%) did not meet the minimum established criteria.

Table 191. DSM-5 Classification Results (N=6,447, 2023)

DSM-5 Classification	N	%
Not Met	4082	63.3
Mild Problem	918	14.2
Moderate Problem	530	8.2
Severe Problem	917	14.2

An ad hoc analysis was conducted which examined first-time offenders and repeat offenders by the four DSM-5 classifications. Results are presented below in Table 192. As expected, repeat offenders were classified higher than first-time offenders. These results also underscore the validity of the DSM-5 classification system within the DRI-2; offenders with more problems are classified higher than first-time offenders.

Table 192. DSM-5 Classification by Offender Status (N = 6,447, 2023)

		DSM5_Classification			
Offender Status		Not Met	Mild Problem	Moderate Problem	Severe Problem
First-time	N	3138	524	255	325
	%	74.0%	12.4%	6.0%	7.7%
Repeat	N	934	391	270	579
	%	43.0%	18.0%	12.4%	26.6%

82. DRI-2 Validity Analysis: First and Multiple Offender Comparison

Method

Participants in this study (N=6,447) consisted of DUI offenders; 4,605 (71.4%) of the offenders were male and 1,842 (28.6%) were female. Demographic composition of the sample follows. Age:

20 & under (2.6%); 21-30 (30.5%); 31-40 (28.7%); 41-50 (17.6%); 51-60 (13.0%); and 61 & over (7.6%). Ethnicity: Caucasian (66.8%); African American (7.5%); Hispanic (16.8%); Asian (1.5%); Native American (0.8%); and Other (2.0%). Education: Eighth grade or less (2.7%); Some high school (9.1%); GED (6.7%); Graduated HS (36.7%); Trade or technical school (2.7%); Some college (16.1%); Graduated college (18.1%); and Attended graduated school (2.8%). Marital Status: Single (62.2%); Married (18.1%); Divorced (13.2%); Separated (3.2%), and Widowed (1.7%).

A discriminant validity analysis compared first-time offenders' and multiple offenders' DRI-2 scale scores. Offenders classified as first-time offenders are those having no more than one domestic violence arrest, whereas multiple offenders are those that have been arrested for domestic violence two or more times. Because DRI-2 scales measure problem severity, it was predicted that multiple offenders would obtain higher (more severe) scale scores than first-time offenders.

Table 193. DRI-2 Scale Score Comparisons of Offender Groups (N=6,447, 2023)

DRI-II/DRI-II Short Form Scale	First Offenders' Avg. Scores	Multiple Offenders' Avg. Scores	*T*-value	Level of Significance
Truthfulness Scale	10.97	10.06	*t*=6.31	p<.001
Alcohol Scale	9.66	24.32	*t*=-37.04	p<.001
Driver Risk Scale	9.48	10.73	*t*=-7.71	P<.001
Drugs Scale	5.72	12.69	*t*=-21.97	p<.001
Stress Management Scale*	143.12	129.53	*t*=9.83	p<.001

*Note: Stress Management Scale scores are reversed, meaning that higher scores are associated with better stress coping skills. For all other scales, higher scores represent more severe problems.

As shown above in table 193, multiple offenders' scores on nearly all DRI-2 scales indicated more severe problems, with the exception of the Truthfulness Scale. First offenders had a higher average Truthfulness Scale score than multiple offenders, indicating that first offenders may by slightly more prone to denial or problem minimization than offenders with prior arrests. For all other scales, multiple offenders' average scores were higher (more severe) than those of first offenders, representing heightened problem severity. Multiple offenders' more severe problems are manifested as higher scale scores. There was a statistically significant difference on the Truthfulness, Alcohol, Driver Risk, Drugs, and Stress Management Scales. On average, repeat offenders scored higher than first-time offenders on the Alcohol, Driver Risk, Drugs, and Stress Management Scales. First-time offenders scored higher than repeat offenders on the Truthfulness Scale.

These results corroborate the discriminant validity of the DRI-2. DRI-2 scales effectively differentiate between first offenders and repeat offenders that are expected to have more severe problems (multiple offenders).

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