

Test Procedures

Because the DrInC is a paper-and-pencil questionnaire, administration is relatively straightforward. The usual conditions for administering psychological tests apply. The questionnaire should be completed under conditions of minimal distraction by an alert subject who is neither intoxicated nor in acute withdrawal. On-site rather than take-home administration is recommended. To control response bias, it is important to explain why the information is being collected and to obtain responses under conditions that are not likely to be threatening to the respondent (Babor and Del Boca 1992). The importance of careful responding and accurate information should also be emphasized.

Assuming adequate reading ability, subjects may review the instructions and proceed to complete the questionnaire with minimal guidance. Alternatively, a staff member may review the instructions before the subjects begin. A staff member should be available to answer questions that may arise. The use of a dark-leaded pencil is recommended so that errors can be corrected and marks are clear to the scorer. The subjects should *circle* the appropriate response for each item. The examiner should ensure that the subjects are circling (rather than, e.g., checking or crossing) responses before allowing them to continue on their own.

Typical administration time for the 50-item scale is 5 minutes (or 10 minutes for both Lifetime and Recent Consequences scales). When the subjects have finished the questionnaires, the examiner should check to see that all items have been completed. To ensure optimal interpretability, the subjects should be asked to complete any items that have been left blank. The most common reason for leaving an item blank is the subjects' perception that it does not apply to them. In this case, subjects are instructed to circle zero (0) and should do so for any items that do not apply.

The format of the DrInC provides two separate versions for reporting Lifetime and Recent Consequences. This reduces respondent confusion in trying to answer two questions on the same page for each item. It also permits use of only one form. The Lifetime Consequences form, for example, might be used only at baseline, whereas the Recent

Consequences form could be repeated at followups. When both the Lifetime and Recent Consequences versions are to be administered (e.g., at intake or baseline assessment), the Lifetime Consequences scale should be given first.

Scoring

Hand-scoring of the DrInC is a relatively simple clerical task. Using the appropriate DrInC Scoring Sheet (see appendix), copy the subject's response to each item on the line corresponding to that item on the scoring sheet (Exhibit 1). The responses are then summed vertically to yield scores for each of the five subscales and for the Control Scale. The five subscale scores (but not the Control Scale score) are then summed horizontally to calculate the Total DrInC score.

DrInC Scoring Sheet					
Physical	Inter-personal	Intra-personal	Impulse Control	Social Responsibility	Control Scale*
1 <u>1</u>		2 <u>1</u>		3 <u>1</u>	
	4 <u>1</u>			6 <u>1</u>	5 <u>1</u>
	7 <u>1</u>				
8 <u>1</u>			9 <u>1</u>		
			10 <u>0</u>		
11 <u>1</u>		12 <u>1</u>			
13 <u>0</u>				14 <u>1</u>	15 <u>1</u>
	17 <u>1</u>	18 <u>0</u>	19 <u>1</u>	20 <u>1</u>	
	21 <u>1</u>		22 <u>1</u>		
			23 <u>0</u>		
24 <u>0</u>					25 <u>1</u>
				26 <u>1</u>	
	27 <u>1</u>		28 <u>1</u>		
29 <u>1</u>	30 <u>1</u>				
	31 <u>1</u>		32 <u>1</u>		
33 <u>0</u>		34 <u>1</u>			35 <u>1</u>
		36 <u>0</u>			
		37 <u>1</u>			
		38 <u>1</u>			
	39 <u>1</u>			40 <u>0</u>	
			41 <u>0</u>		
			42 <u>0</u>		
	43 <u>0</u>			44 <u>0</u>	45 <u>1</u>
	46 <u>1</u>		47 <u>0</u>		
48 <u>1</u>			49 <u>0</u>		
			50 <u>1</u>		
<u>5</u>	<u>9</u>	<u>6</u>	<u>6</u>	<u>5</u>	<u>5</u>
Physical	Inter-personal	Intra-personal	Impulse Control	Social Responsibility	Total DrInC Score
					Control Scale*

INSTRUCTIONS: For each item, copy the circled number from the answer sheet next to the item number above. Then sum each column to calculate scale totals. Sum these totals to calculate the total DrInC score.

* Zero scores on Control Scale items may indicate careless or dishonest responding. On version 2R (Recent Drinking), totals of 5 or less are suspect.

Exhibit 1. A sample completed DrInC 2L Scoring Sheet.

Normative Ranges

To assist with interpretation of individual and new sample scores, table 11 provides decile rankings for Lifetime (L) and for Recent (R) Consequences on the five subscales and total DrInC scale, based on the Study 1 sample. Table 12 displays the results of mean contrasts between male and female clients on the DrInC subscales. Males showed consistently higher problem levels, with significantly higher scores on three of the five subscales (but not on physical and intrapersonal consequences) and on the total consequences score.

Because sex differences are present, an individual subject's score should be interpreted relative to gender norms. Gender-specific profiling forms for this purpose are included in the appendix for both the Lifetime Consequences and Recent Consequences versions. To complete a DrInC Profile Sheet (exhibit 2), simply transfer the subject's raw scores from the DrInC Scoring Sheet to the empty boxes at the bottom of the appropriate (Women or Men, 2L or 2R) profile form. Then circle the corresponding number in the column above each number to reflect the subject's decile scores.

DrInC Profile Sheet						
Profile form for WOMEN						
LIFETIME (Ever) Consequences (2L)						
DECILE SCORES	Total Score	Physical	Inter-personal	Intra-personal	Impulse Control	Social Responsibility
10	42-45				11-12	
9 Very high	39-41		10		10	7
8	37-38	8			9	
7 High	35-36		9		8	6
6	32-34	7	8	8	7	
5 Medium	29-31		7		6	5
4	26-28	6	5-8	7	5	4
3 Low	24-25	5	4		4	3
2	19-23	4		6	3	2
1 Very low	0-18	0-3	0-3	0-5	0-2	0-1
RAW SCORES:	31	5	9	6	6	5

INSTRUCTIONS: Transfer the total scale scores from the DrInC Scoring Form to the raw score line at the bottom of the Profile Sheet. Then for each scale, CIRCLE the same value above it to determine the decile range.

Exhibit 2. A sample completed DrInC Profile Sheet, corresponding to the Scoring Sheet shown in exhibit 1.

**Table 11. Study 1: Decile ranking by gender for total DrInC scores and subscale scores
(N = 1,389; Male = 1,047, Female = 342)**

Decile ranking	Total Lifetime Consequences Raw scores (45 Items)		Total Recent Consequences Raw scores (45 Items)	
	M	F	M	F
10	22	18	23	21
20	27	23	31	28
30	30	25	38	35
40	32	28	45	40
50	35	31	52	47
60	36	34	59	52
70	38	36	67	60
80	40	38	74	67
90	42	41	85	80

Decile ranking	Subscale scores (Lifetime Consequences)									
	Physical (8 Items)		Interp. (10 Items)		Intrap. (8 Items)		Impulse (12 Items)		Social (7 Items)	
	M	F	M	F	M	F	M	F	M	F
10	4	3	4	3	5	5	3	2	3	1
20	5	4	5	3	6	6	5	3	4	3
30	5	5	6	4	7	7	6	4	5	3
40	6	6	8	7	7	7	6	5	5	4
50	6	6	8	7	8	7	7	6	6	5
60	7	7	9	8	8	8	8	7	6	5
70	7	7	9	9	8	8	9	8	7	6
80	8	8	10	9	8	8	10	9	7	6
90	8	8	10	10	8	8	10	10	7	7

Decile ranking	Subscale scores (Recent Consequences)									
	Physical (0 - 24)		Interp. (0 - 30)		Intrap. (0 - 24)		Impulse (0 - 36)		Social (0 - 21)	
	M	F	M	F	M	F	M	F	M	F
10	3	3	4	2	6	6	3	2	2	1
20	5	5	6	5	9	9	5	3	4	2
30	6	6	8	7	11	11	6	4	5	4
40	8	8	10	8	13	13	7	5	7	5
50	9	9	12	10	15	14	8	7	9	8
60	11	10	14	12	17	17	9	8	9	8
70	12	12	17	14	18	19	11	10	11	9
80	14	13	19	17	20	21	13	11	13	11
90	16	16	22	21	22	22	16	14	15	13

**Table 12. Study 1: Mean (SD) DrInC scores by gender
(N = 1,389: Male = 1,047, Female = 343)**

	Total	Physical	Social	Intrap.	Impulse	Interp.
Recent Consequences						
Male	53.15 (23.33)	9.44 (4.91)	8.38 (4.76)	14.36 (6.05)	9.01 (5.14)	12.55 (6.96)
Female	48.35 (22.84)	9.38 (4.95)	6.73 (4.57)	14.45 (6.03)	7.54 (5.06)	10.74 (6.66)
t-test*	3.32	.17	-5.62	-.24	4.59	4.22
p value**	.001	.86	.001	.81	.001	.001
Lifetime Consequences						
Male	33.00 (7.83)	6.04 (1.73)	5.25 (1.79)	7.05 (1.47)	7.14 (2.63)	7.62 (2.22)
Female	30.01 (8.81)	5.90 (1.77)	4.37 (1.20)	6.91 (1.52)	6.02 (2.89)	6.93 (2.40)
t-test*	5.94	1.30	7.66	1.55	6.67	4.94
p value**	.001	.20	.001	.12	.001	.001

* df = 1,387 for all independent t-tests.

** Reported p value is unadjusted for multiple contrasts.

Interpretation of Scores

Tables 11 and 12 and the DrInC Profile Sheets assign decile rankings to individual scores. A decile score of 1 is described as very low relative to the comparison sample from which norms were developed, corresponding to the lowest 10 percent of the sample. Decile scores of 9 or 10 are very high and correspond to the top two 10-percent brackets of the normative sample. Decile scores of 5 and 6 fall in the middle of the normative range.

It is vital, in interpreting these decile scores, to remember that the sample from which these norms were generated consisted of individuals who already meet diagnostic criteria for alcohol abuse or dependence and who were seeking treatment for these problems. A "low" score, then, is low only relative to those entering treatment for alcohol problems and not relative to the general population. Norms for the DrInC instruments have not yet been developed from a general population, but clearly what constitutes a low to medium score (deciles 3-6) by the norms in tables 11 and 12 and on the provided profile forms would be a very high score relative to the general population. This should be made particularly clear if clients are given feedback regarding their scores relative to these norms.

The Total DrInC Score provides an index of overall severity of alcohol problems. Although elevated scores on this scale are consistent with a diagnosis of alcohol abuse, the DrInC should never be used alone to establish such a diagnosis.

The Lifetime Consequences total score reflects the overall number of alcohol problems that have occurred during the person's lifetime. Because Lifetime scale responses are binary (0 or 1), they do not reflect the intensity but only the lifetime number of problems. The total number of lifetime problems, however, is itself a reflection of the overall severity of alcohol involvement. Furthermore, because the Lifetime Consequences (2L) scale asks about the occurrence of problems *ever*, its scores would not be expected to decrease with readministration. Consequently, it should not be used, for example, as a followup measure to examine the effects of treatment or prevention programs.

The Recent Consequences total score, in contrast, would be expected to vary from one time to the next because it queries the occurrence and intensity of alcohol problems during a certain period. For the forms appended (2R), this time window is the past 3 months. The length of time queried can be adjusted, although the Recent Consequences norms provided in this manual should not be assumed to apply to any interval other than the past 3 months. This version (2R) is appropriate for assessing the severity of alcohol problems across time, such as before and after certain interventions.

The response scales of the Recent Consequences version are 4-point Likert ratings and therefore reflect both the number and the intensity of problems. If a comparison is desired between baseline and postintervention scores, the same time window (such as the 3-month window in 2R) should be used at both points. The reason for a decrease in reported problem severity (on the 2R) is also an important consideration. A period of institutionalization or incarceration, for example, would be expected to suppress DrInC 2R scores, but this would not necessarily reflect a stable reduction in problem severity.

The five subscale scores reflect the relative density of problems in each of five content areas: physical, social responsibility, intrapersonal, interpersonal, and impulse control consequences. Again, decile scores for these scales reflect the severity of an individual's problems *relative to clients already in treatment for alcohol abuse or dependence*.

The DrInC was not designed to be used as a sole indicator in program evaluation. Outcomes are multifaceted and are best assessed by multiple indices. Even a well-developed measure contains only a sample from the possible universe of negative consequences. Such items may or may not adequately characterize individual outcomes. Furthermore, the DrInC should not be interpreted as an index of alcohol

consumption or *dependence*, constructs that are positively but not highly correlated with alcohol problems. Caution must also be observed when using measures such as this with different ethnic, racial, or national groups, because negative consequences are partially related to cultural norms. With these caveats, however, a refined measure of negative consequences is an important tool in studying the nature of prevention and treatment outcomes.

Finally, it should be noted that DrInC total and subscale scores represent a combination of items with Likert scales reporting frequency of consequences and others reporting severity of consequences. It may be useful in future clinical and research applications to explore these as separate domains

Subject Honesty and the Control Scale Scores

Like all self-report measures of alcohol consequences, the DrInC is a very transparent and face-valid instrument. The constructs being measured are apparent to the respondent. Consequently, it is relatively easy to “fake good” by denying the existence of problems. Scores from the DrInC should therefore be understood as the levels of problems reported and consciously admitted by the respondent.

The Control Scale was inserted as a protection against carelessness or perseverative naysaying. All items of the five problem subscales are scored in a positive direction, so that zero reflects the absence of problems. Control Scale items were therefore inserted to break this pattern, requiring drinkers to depart from a consistent zero response set even if denying negative consequences of drinking. A respondent who adopts a consistent naysaying set may also circle zero for these items, particularly if not reading the items carefully. Thus, a low score, particularly a zero score, on the Control Scale suggests the possibility of carelessness or a perseverative “No” response set.

Two Control items (25, 45) did not perform as planned, in that non-zero responses were infrequent even in our norming sample where problem reporting was high, and are likely to be dropped as future versions of the scale are developed. The remaining three items (5, 15, and 35), however, were infrequently answered “No” by our norming sample. Denial of all three of these items (“I have enjoyed the taste of beer, wine, or liquor,” “Drinking has helped me to relax,” and “When drinking, my social life has been more enjoyable”) is unlikely in people with established drinking habits. Nevertheless, the Control Scale was inserted primarily to prompt more careful reading of items and to disrupt naysaying, and it should not be regarded as a reliable indicator of respondent deception. Detection of a consistent naysaying set can be accomplished as easily by visually examining the respondent’s answer sheet.