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**Drink driving rehabilitation programs and alcohol ignition interlocks: Is there a need for more research?**

*Author Name*

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**Subhead 2**

Abstract

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Drink driving continues to be a serious problem on Australian roads, as alcohol-related crashes result in substantial injuries, fatalities and property damage. While legal sanctions such as fines and licence disqualification periods have been effective in preventing a large proportion of the population from drink driving, sanctions have been relatively ineffective in reducing alcohol-impaired driving among ‘hard-core’ repeat offenders (Marques, Voas and Hodgins 1998). As a result, drink driving rehabilitation programs and alcohol ignition interlocks are being employed as additional countermeasures to reduce the prevalence of alcohol-related injuries and fatalities on public roads. This report aims to review the current evidence regarding the effectiveness of rehabilitation and interlock programs, and to provide support for the expansion of upcoming Australian interlock trials to include (a) screening and matching procedures, (b) intervention and/or support programs and (c) formative evaluations that focus on a number of measurement outcomes.
Research has repeatedly demonstrated that between 20% and 30% of convicted drink drivers re-offend (Buchanan 1995; Henderson 1996; Langford, 1998; Popkin 1994; Ryan et al. 1996) and that this sub-group of drivers is disproportionately represented in crash statistics (Hedlund and Fell 1995; Marques et al. 1998). The most common strategy to deter convicted drink drivers has traditionally been to increase law-enforcement activities such as arrests, convictions, fines and licence disqualification periods (Longest 1999). This approach has proven extremely successful for the majority of people who fear authority or perceive the probability of apprehension as relatively high and sanctions as severe (Homel 1988; Ross 1992). However punitive sanctions have not proven to be as effective for recidivist, habitual drink drivers who have previously experienced punitive sanctions such as fines and licence disqualification periods but continue to drink and drive.

There has been continued debate within the literature regarding the effectiveness of legal sanctions to reduce recidivist drink driving compared with that of alternative countermeasures such as rehabilitation programs (Nichols and Ross 1990). While research has demonstrated that first-time offenders benefit most from licence sanctions (e.g. disqualification periods), rehabilitation programs (often in combination with legal sanctions) produce the greatest and longest reduction in repeat offending for recidivist drink drivers (DeYoung 1997; McKnight and Voas 1991; Sadler, Perrine and Peck 1991).

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REHABILITATION PROGRAMS
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Drink driving rehabilitation programs constitute a secondary form of prevention that attempts to directly change offenders’ drink driving behaviour through education
and/or treatment. The primary aim of drink driving programs has generally been accepted to be the process of separating drinking from driving by providing participants with the knowledge, skills and strategies to avoid further offending behaviour (Popkin 1994; Wells-Parker 1994). A secondary aim has often been to reduce drinking levels by increasing participants’ awareness of the seriousness of excessive alcohol consumption (Wells-Parker 1994).

Rehabilitation programs are not new, as drink driving interventions have been implemented in the US, Canada and Great Britain since the 1960s (Mann, Vingilis and Stewart 1988). The majority of research and work into drink driving has been conducted in the US, with the first Australian program not being developed until 1973 at St Vincent Hospital, Melbourne (Homel, Carseldine and Kearns 1988). Since then, rehabilitation programs have expanded and evolved to incorporate a range of interventions and techniques designed to accommodate the changing characteristics and circumstances of the drinking population.

The types and format of programs vary considerably from simple provisions of reading materials to long-term treatment of alcohol problems (Ferguson et al. 1999; Mann et al. 1988; Taxman and Piquero 1998). Specifically, interventions can consist of either educative or health programs, skills-based programs, short-term and long-term treatment programs, social skills and assertion training, other forms of counselling or a combination of a number of treatments. More recently, technological advances in alcohol assessment have lead to the inclusion in some programs of biological measurements (e.g. gamma-glutamyl transpeptidase [GGT] and carbohydrate-deficient transferrin [CDT] tests) to examine the alcohol consumption
levels of participants, with successful program completion being contingent upon low biological readings (Glitsch et al. 2000; Popkin 1994).

Despite the diversity of programs, the overarching aims and goals of such interventions have usually been accepted to be (a) education involving strategies that highlight the risks and consequences of drink driving, and/or (b) psychotherapy or treatment that aims to target and treat drinking problems, and/or (c) skills-based interventions that teach behaviours that might prevent further offences (Ferguson et al. 1999; Sanson-Fisher, Redman and Osmond 1986). Within Australia the majority of rehabilitation programs have focused on health and education (Homel et al. 1988; Sanson-Fisher et al. 1990; Social Development Committee 1988), with the aim of producing attitudinal and behavioural change through education and increasing awareness of the serious consequences of the offence.

<Subhead 2>
Effectiveness of rehabilitation programs

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The large variation in both the structure and content of programs has led to a number of different outcome measures being used to evaluate the effectiveness of the rehabilitation programs. These outcome measures have included reductions in recidivism, accident and fatality rates; improved knowledge and attitudes towards drink driving; recognition of alcohol-related problems; impact on lifestyle (e.g. number of drinking days, and general driving behaviours) as well as cost-effectiveness (Sanson-Fisher et al. 1986).
This variation in rehabilitation programs and outcome measures has often been combined with numerous methodological weaknesses, and has resulted in conflicting findings regarding the efficacy of programs to reduce recidivism. The range of methodological limitations has included (a) a lack of random assignment of participants to control and experimental groups (including judicial and self-selection biases) (Ferguson et al. 2000; Wells-Parker et al. 1995), (b) follow-up periods that have usually been short and reliant on recidivism rates, which has been suggested to be an inaccurate measurement of treatment success (Mann et al. 1983), (c) assessment difficulties such as the use of questionable psychometric assessment and diagnostic screening procedures prior to the commencement of treatment (Mann et al. 1983; Sanson-Fisher et al. 1986), and (d) lack of post-program participant assessment.

In relation to the Australian context, a comprehensive review of drink driving programs in both Australia and New Zealand (Sanson-Fisher et al. 1986) reported that the two major difficulties in evaluating programs are the large amount of variation between interventions (including content, goals and implementation) and that few evaluations have met the minimal methodological criteria needed for scientific evaluations. For a complete summary of the difficulties experienced in reviewing rehabilitation programs, the reader is directed to Mann et al. (1983), Wells-Parker et al. (1995) and for Australian studies Sanson-Fisher et al. (1986) and Ferguson et al. (1999).

Historically, there has been a tremendous amount of conflicting research regarding the effectiveness of drink driving rehabilitation programs to reduce further offending. A number of early evaluations in both America and Australia reported that such
Rehabilitative Interventions

programs did not reduce the prevalence of repeat offending (Foon 1988; Holden 1983; Peck 1994; Sanson-Fisher et al. 1986) and that licensing sanctions were a more effective countermeasure in combating drink driving (Popkin 1994). These studies have suggested that few changes in drinking patterns or re-offending behaviour result from rehabilitation programs (Beirness, Simpson and Mayhew, 1998). In relation to the Australian context, a comprehensive review by Sanson-Fisher, et al. (1986) indicated that, aside from the difficulties in assessing interventions, it is unlikely that such programs would reduce the prevalence of repeat offending, as most programs do not incorporate the ingredients that produce long-lasting behavioural change such as screening and matching practices and the inclusion of maintenance procedures.

Despite these negative results and the previous methodological difficulties that have plagued evaluations, more recent studies have begun to demonstrate that drink driving rehabilitation programs can reduce drink driving recidivism and alcohol-related crashes (DeYoung 1997; McKnight and Voas 1991; Pratt, Holsinger and Latessa 2000; Sadler, et al. 1991; Siegal 1990). Promising results have been demonstrated by large-scale meta-analytic studies that have included a number of aspects in the statistical analyses such as first time and multiple offenders, effect size, intervention characteristics and the quality of research designs for each study (Wells-Parker et al. 1995). For example, an early review of rehabilitation programs in the 1970s and early 1980s by Mann et al. (1983) demonstrated that both education and treatment programs may have reduced recidivism among convicted drink drivers. Furthermore, Mann et al. reported that drink driving programs also have beneficial effects on traffic safety measures (e.g. knowledge and attitudes) as well as driving behaviours. More recently, Wells-Parker et al. (1995) conducted a now-famous comprehensive meta-
analysis of 215 drink driving rehabilitation programs and concluded that treatment has a small but consistent effect (7–9% reduction in drink driving) compared to no treatment, punishment or licence sanctions. The largest improvements in traffic safety have been reported for rehabilitation programs that incorporate three intervention aspects such as psychotherapy or counselling, education, and probation (Wells-Parker et al. 1995) rather than single-mode or two-mode interventions (DeYoung 1997).

Wells-Parker et al. also confirmed that, despite the large number of methodological difficulties that have limited previous intervention evaluations, such programs provide positive effects on both recidivism rates and general traffic safety (e.g. alcohol-related crashes). It has been suggested that the relatively small positive effect resulting from rehabilitation programs is dramatically increased when evaluated against subsequent reductions in drink driving related crashes and injuries (Beirness et al. 1998).

<Subhead 2>
Recidivist offenders

The most promising indications regarding the effectiveness of rehabilitation programs have been for those interventions that have focused primarily on recidivist drink drivers (DeYoung 1997; Ferguson et al. 2000; Mann et al. 1994; Nickel 1991; Taxman and Piquero 1998; Siskind et al. 2001, pers. comm.). Research has demonstrated that such programs are most effective for serious repeat offenders who are apprehended with blood alcohol content levels of 0.15 g/100 mL or greater (Siskind et al. in press). These studies have demonstrated that rehabilitation programs are most effective in reducing further offences when they are combined with licence disqualification periods. First, the continued application of fines and licence disqualification periods ensures offenders realise the punitive costs associated with re-
offending. Second, rehabilitation programs provide recidivist drink drivers with a range of skills and strategies to avoid the drink driving sequence, which include information regarding the effects of alcohol, drink driving laws, safe driving practices and possible indicators of drinking problems.

Despite these reported reductions in drink driving behaviour resulting from rehabilitation programs, some ‘hard core’ offenders continue to drink and drive after completing such programs, while others fail to complete the programs. Alcohol ignition interlocks have been proposed as a further intervention to reduce the prevalence of recidivist drink driving (Morse and Elliott 1992; Popkin et al. 1992).

**Subhead 1**
ALCOHOL IGNITION INTERLOCKS

**Body**
An alcohol ignition interlock is a device that measures an individual’s blood alcohol content (BAC). It is connected to the ignition and power system of a vehicle and is designed to prevent the vehicle from being started if the driver’s BAC exceeds the legal limit.

It has been suggested that, in contrast to other countermeasures that focus primarily on traditional deterrence-based strategies (e.g. random breath testing, fines and licence disqualification), interlocks provide drivers with the opportunity to develop and practice strategies to avoid drink driving (Weinrath 1997). In addition, the device allows drivers to re-enter the licensing system legally, with insurance rather than permitting offenders to continue to drive unlicensed without supervision (Beirness and Simpson 1991). Further benefits of interlocks include the prevention of the
vehicle being started if the driver exceeds the previously specified BAC level, and the instrument serves as a constant reminder to the driver of possible alcohol problems and the difficulties that have arisen from drink driving. Interlocks also offer many offenders the opportunity to maintain employment (Beirness and Simpson 1991).

**Subhead 2**
Effectiveness of Interlocks

**Body**
Since the 1980s there have been a number of interlock trials in the US and Canada (Beck, Rauch and Baker 1997; Jones 1992; Popkin et al. 1992; Weinrath 1997) and two preliminary trials in Australia (Coxon and Earl 1998; Spencer 2000). Early evaluations of interlocks suggest that the devices have the potential to significantly reduce recidivism rates among convicted drink drivers (Baker 1987; Beck et al. 1997; Collier, Comeau and Marples 1995; Morse and Elliot 1992; Weinrath 1997). For example, Morse and Elliot (1992) in Ohio reported that when interlocks were installed, recidivism rates were lower (65% reduction) than for offenders given only licence suspension sentences during the same period of time, while unlicensed driving was reduced by 91%. Furthermore, Popkin et al. (1992) in North Carolina and Jones (1992) in Oregon performed quasi-experimental interlock trials and reported significant reductions in re-arrest rates for interlock participants while the interlock was installed. Beck et al. (1997) in Maryland conducted the only complete randomised interlock trial and also reported a 65% reduction in recidivism rates while the interlock was installed. Finally, Weinrath (1997) examined the combination of interlocks with a support program, which produced the most promising results including significant reductions in drink driving recidivism and in the number of other dangerous driving practices (e.g. those resulting in collisions and injuries).
However, like rehabilitation programs, interlock evaluations have also been plagued by methodological difficulties including small sample sizes, self-selection and judicial biases, non-random assignment of groups, unmatched intervention and control groups, and short follow-up evaluation periods. Coben and Larkin (1999) reviewed 31 interlock studies in North America and found that only 6 studies could be comprehensively reviewed, due to methodological weaknesses with research designs such as non-random sampling procedures, sole reliance on recidivism rates and the failure to control for exposure (e.g. number of kilometres driven).

In addition, the majority of interlock studies have reported that once the interlock was removed from the vehicle many drivers returned to re-offending (Beck et al. 1997; Jones 1992; Morse and Elliot 1992; Popkin et al. 1992; Voas et al. 1999). For example, the majority of interlock trials report significant reductions in the prevalence of re-offending while the device was installed to the vehicle (50% to nearly 100% reduction), but there have been no reported significant reductions in re-offending compared to control groups once the device is removed (Voas et al. 1999). Overall, the research suggests that interlocks may merely incapacitate or restrict individuals from drink driving while installed in the vehicle, but the device loses any beneficial effect upon removal (Weinrath 1997). At present it remains unclear why offenders continue to drink and drive once the device is removed from the vehicle, nor what (if any) beneficial effects are derived from interlock usage.

There have only been two prior interlock trials in Australia to determine the feasibility of such programs. Both trials consisted of volunteer participants. The first study was
conducted in Riverland, South Australia, over a 6 month period in 1998 and consisted of 24 volunteers who were employees or were affiliated to one of a number of road safety departments in South Australia (Coxon and Earl 1998). The second trial was conducted in New South Wales between January 1999 and March 2000 and consisted of 23 repeat offenders who volunteered to install an interlock to their vehicle and were interviewed both during interlock installation and when the device was removed from their vehicles (Spencer 2000).

Both studies demonstrated that interlocks were a viable countermeasure in Australia (e.g. reliability and servicing of the device) with participants reporting positive experiences regarding the use of interlocks. For example, participants reported that using the device increased their knowledge regarding appropriate drinking levels to remain under the blood alcohol limit and most believed that the device was a viable sentencing option to traditional legal sanctions (Coxon and Earl 1998; Spencer 2000).

Despite these positive reviews of interlock trials of volunteer participants, a major limitation of interlock research (involving court-ordered installation of the device), has been that evaluations have failed to examine the impact that interlocks have on offenders’ lifestyles, motivations, attitudes, driving and drink driving behaviours. It is unclear what psychological and behavioural changes occur while the device is installed (e.g. attitudes and driving habits), or why the majority of participants continue to drink and drive after the interlock is removed from their vehicles.

Interestingly, at present it is not clear what the offenders believe is the purpose or aim of the interlocks. Program facilitators and researchers have suggested that interlocks
Rehabilitative Interventions have two main aims: (a) behavioural control and/or incapacitation, which is attained through technological advances designed to minimise the risk of harm and re-offending (Henderson, 1999), and (b) rehabilitation/education, which aims to provide users with knowledge and skills/strategies to avoid driving after exceeding the legal blood alcohol limit (Ferguson et al. 2000; Weinrath 1997). It is important is to determine whether users have the same beliefs as interlock administrators regarding the purpose of the device (e.g. rehabilitation and incapacitation), and what consequences arise if perceptual disparities exists between the groups. Examination of these factors may provide valuable insight into the effect that perceptions of and attitudes to interlocks have on frequent usage of the device as well as on successful program outcomes e.g. the avoidance of further offending.

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The combination of rehabilitation programs and interlocks

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In the past, the majority of drink driving interventions implemented to reduce the prevalence of repeat offending have incorporated uni-module characteristics. That is, previous studies have not combined interlock installation with some form of drink driving rehabilitation or support program and thus drivers are not provided with either (a) the appropriate knowledge, skills and strategies to avoid the drink driving sequence or (b) treatment for alcohol-dependency problems before interlock installation and removal. Whether this occurrence has contributed to the substantial proportion of offenders continuing to drink and drive once the device is removed remains unproven, but what is evident is that interlock installation alone may not be an adequate tool to stop recidivism.
The exceptions to this pattern are a small number of current interlock trials in North America (Maryland, Alberta) and in Europe (Sweden) which include treatment, rehabilitation and/or intensive supervision programs with interlock installation (Beck et al. 1997; Marques et al. 2001). Although most of these programs are currently being implemented and have not been comprehensively evaluated, early indications suggest that the inclusion of such support initiatives with interlock programs provides positive results, e.g. lower rate of failed start-up attempts (Marques et al. 2001). For example, the Alberta trial has combined interlocks with a harm-reducing and motivational intervention technique which includes (a) education and support to offenders regarding interlock usage, (b) case management support (e.g. family counselling), (c) motivational enhancement therapy (e.g. raising awareness regarding the seriousness of drink driving), and (d) protective planning (e.g. assistance in planning for driving without the interlock) (Marques et al. 1999). At present it appears that while the device is installed participants who receive the combined intervention are less likely to record failed BAC start-up attempts than individuals who do not receive the intervention. However, follow-up research has yet to be completed to determine whether the combination of interlocks with support or intervention programs provides long-term benefits once the device is removed. Preliminary results indicate that combining interlock usage with compatible rehabilitation and/or support programs may produce beneficial results. Such practices may ensure that offenders address their drinking and/or drink driving problems by developing new skills and strategies to avoid re-offending before applying these strategies to driving with the assistance of interlocks. Conversely, it may be unrealistic to enforce interlock
installation without addressing the individual factors that ultimately affect successful program outcomes such as the ability to control alcohol consumption.

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Formative evaluations and process outcomes

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Previous evaluations of drink driving rehabilitation programs have predominantly focused on summative outcomes such as recidivism rates and alcohol-related crashes (Popkin 1994). Archival data such as recidivism rates are perhaps the simplest and most accessible outcome measure (Buchanan 1995) and have continually been used as the major indicator of program effectiveness (Ferguson et al. 2000; Sanson-Fisher et al. 1986). However, a number of researchers have highlighted difficulties associated with using recidivism rates, and have questioned the accuracy and validity of the measure as a reflection of the prevalence of drink driving on public roads (Fitzpatrick 1992; Marques et al 2001; Popkin 1994; Ross 1984; Sanson-Fisher et al. 1986).

For example, in America it has been estimated that the chances of a driver with a BAC of .10% or greater being arrested are 1 in 500 (Fitzpatrick 1992). A similar estimation for the Australian context offered by Homel et al. (1988) suggests that only 0.5–1.5% of intoxicated drivers are detected by the police at any one time. Considering that many drink drivers report that they continually offend without apprehension, and often employ techniques to avoid detection (Ross 1992; Voas, Tippettts and Lange 1997), it may be argued that the probability of repeat offenders being caught also remains relatively low. Therefore the accuracy of measures such as recidivism rates (which are continually used as the dominant outcome measurement
of programs) may be heavily dependent on the level and effectiveness of lawenforcement activities in jurisdictions.

As a result, accurate indications of the effectiveness of rehabilitative interventions have not yet been attained. For the above reasons, there is a need for research that incorporates formative and process outcomes that measure change from multiple perspectives, as the possibility of drawing misleading conclusions increases when one simple index is used to measure change (Lambert and Hill 1994). A possible initiative to improve the accuracy of current knowledge regarding the impact of drink driving rehabilitation and interlock programs is to conduct formative evaluations and thus include several measures of program effectiveness such as self-reported changes in lifestyles, attitudes, motivations, self-efficacy and drinking and drink driving behaviour. A broadening of measurement outcomes would result in improved detection of both behavioural and psychological changes resulting from completing either drink driving programs or interlock trials. Fitzpatrick (1992) has highlighted that this lack of multiple measures of program effectiveness incorporating clear goals and objectives has contributed to the uncertainty regarding the effectiveness of rehabilitation programs.

Process outcomes may be defined as the changes that occur through the rehabilitation process and include participants’ hopes, expectations, values, and intentions that can be demonstrated through actions, behaviours, statements and non-verbal communication (Robertson and Colborn 1998). Such measures have successfully been incorporated in health, business, and education sectors to explain how change occurs (Robertson and Colborn 1998). This information would not only provide more
accurate indications of the effectiveness of drink driving rehabilitation programs but also provide information regarding program strengths and deficiencies that would benefit policy and program development.

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Previous formative evaluations

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At present, only a minority of research has incorporated formative aspects in program evaluations such as participants’ self-report data regarding knowledge and attitudes towards drink driving, alcohol consumption levels, etc. (Ferguson et al. 2000). Despite this, initial studies have provided rich contextual information regarding the impact that interventions have on a range of psychological and behavioural factors. For example, Ferguson et al. (2000) demonstrated that although knowledge and attitudes do not necessarily change through program completion, participants are significantly more likely to adopt newly learned strategies to avoid further drink driving. Furthermore, Wells-Parker et al. (1998, 2000) highlighted that program participants are more likely to be motivated to change their drink driving rather than their drinking behaviours. In addition, the researchers demonstrated the important effect that perceived self-efficacy to avoid drink driving has on further offending behaviour, as individuals who report low levels of control over both their drinking and drink driving behaviours are at the greatest risk of re-offending (Wells-Parker et al. 2000).

In relation to process evaluations of interlock programs, a small series of studies from the Alberta interlock trial have incorporated vehicle-based measurement outcomes such as the number of times participants start and use their vehicles, days of the week, BAC readings, and distance travelled (Marques et al. 1999, 2000, 2001). These
studies have demonstrated that participants use the device on approximately 80% of days and usually record a steep decline in the number of failed start-up attempts during the life of the trials, with the highest number of failed attempts being on weekends (Marques et al. 1999). Furthermore, there have been indications that participants are less likely to use the device on the weekend and that higher numbers of failed start-up attempts during the trial proves to be a reliable indicator of further offending once the interlocks are removed (Marques et al. 2001; Voas et al. 2000). These studies have focused on interlock recordings and have provided valuable insight into the driving and drink driving patterns of interlock participants, such as the frequency of interlock usage, BAC readings, circumvention attempts etc. However, such studies have once again relied on indirect measurements of drinking and drink driving occurrences (e.g. interlock recordings) and do not provide an accurate indication of the impact that interlocks have on participants’ lifestyles, the possible changes that may result from intervention completion, or of participants’ perceptions regarding the effectiveness or convenience of the device in comparison to traditional legal sanctions.

The authors of this paper recognise that questions remain regarding the applicability and reliability of formative measurements. The major limitations of formative evaluations include (a) the cost of completing such tasks (both time and money), (b) the sensitivity of self-reported data (confidentiality and accuracy) and (c) the reliability of responses when they are dependant upon an outcome, e.g. licence reinstatement (Sanson-Fisher et al. 1986). Popkin (1994) suggested that self-report data is extremely subjective and may be influenced by the individual’s inability or denial to recall events accurately. Therefore, issues have been raised regarding
whether measures such as knowledge and attitudes towards alcohol and drink driving accurately reflect changes in drink driving behaviour (Sanson-Fisher et al. 1986).

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Combine summative and formative outcomes

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A possible solution to these evaluation difficulties is to incorporate both summative and formative measurement outcomes in research designs. Researchers are now beginning to suggest that interviews with participants that involve questionnaires concerning self-reported behaviour (i.e. actual recidivism rates) can provide realistic and valuable indicators of offending behaviour in addition to official offending statistics (Buchanan 1995; Siskind et al. in press). For example, the inclusion of recidivism rates with intermediate outcomes such as changes in attitudes, knowledge and motivation would provide a more complete description of attitudinal and behavioural changes resulting from successful program completion. As Robertson and Colborn (1998, pp.39) highlight, ‘summative evaluations describe an end product; formative evaluations are performed at specified intervals to assure the end product is obtained.’ The researchers go on to suggest that the real strength of a rehabilitation program is found in the link between the program and the process outcomes, as it demonstrates how and why, for whom and under what circumstances programs work. From this it appears that the combination of both measurement outcomes (carefully chosen to reflect goals and aims of programs) may prove valuable measures of program strengths and weaknesses.

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Matching

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Finally, the implementation of formative evaluations may reinforce the need for screening, tailoring and matching procedures, which would assist in directing offenders to the appropriate forms of drink driving interventions, to ensure that maximum rehabilitative effects are attained. Researchers have continually suggested that the effectiveness of rehabilitation programs may be dependent upon recognising specific individual characteristics of drink drivers and matching participants to the appropriate interventions (Ferguson et al. 2000; Glitsch, et al. 2000; Nochajski, Stasiewicz and Gonzalez, 2000; Sanson-Fisher et al. 1986). According to the matching hypothesis, different types of drink driving offenders require different forms of interventions such as skill-based, educational or treatment programs to ensure successful outcomes (Wells-Parker 1994). Program participants are beginning to be assessed for a range of psycho-biological factors (e.g. alcohol dependence and psychological problems), as these factors have been recognised to affect successful program completion and re-offending rates (Andren et al. 2000; Wells-Parker et al. 2000).

However, these procedures have yet to be transferred to interlock programs, and to date there has been very little examination of the needs and requirements of interlock users before installation. Pre-interlock assessment is vital to ensure that the device can provide the maximum benefits to participants. Assessment may include an examination of the participants’ driving requirements and family circumstances before interlock installation to determine whether offenders are in fact going to use the interlock-installed vehicle and to estimate what impact the interlock may have on other family members. Previous research has demonstrated that many interlock participants regularly use non-interlock installed vehicles and may be likely to not use the device at ‘high-risk’ periods, e.g. weekends (Voas et al. 2000). Pre-and-post
interlock assessment of participants’ attitudes and circumstances may lead to the development of tailored programs that are compatible with offenders’ lifestyles and thus ensure regular use of the device.

**CONCLUSION**

To answer the question posed in the title of this paper, the effectiveness of both drink driving rehabilitation programs and the use of interlocks may be clarified by conducting processes and evaluations that examine the impact of such interventions on a range of outcomes. First, when considering the impending increase in the prevalence of interlock trials in Australian, the inclusion of formative outcomes in the research design may prove to be extremely valuable, considering the number of factors that presently remain unclear. Second, combining interlocks with an associated intervention and/or support program may produce an additive affect that provides participants with the opportunity to practice and consolidate newly developed skills and strategies to avoid the drink driving sequence. Finally, assessing and matching participants’ needs to suitable programs may ensure that offenders receive the appropriate treatment which would ultimately improve the effectiveness of rehabilitative interventions. This might result in alcohol-dependent individuals being directed towards therapeutic programs addressing alcohol-related issues before interlock installation, while young offenders may need to confront issues relating to drinking in the social context and the effects of peer group pressure. Although the implementation of such research initiatives may well be governed by the practical reality of allocating precious resources (time and money), such practices will provide a means of monitoring referral patterns, and forming databases for the examination of
treatment effects and characteristics of clients (Sanson-Fisher et al. 1986), as well as developing screening mechanisms that facilitate the development of programs that accommodate specific individual needs.

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 REFERENCES

<References>


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**James Freeman**

is a PhD scholar at the Centre for Accident Research and Road Safety–Queensland and he is currently part of a research team that is implementing the first Australian court-ordered trial of alcohol ignition interlocks for recidivist drink drivers. James is a registered psychologist and his current research interests focus on producing behavioural change, including punishment and models of deterrence and the processes of change produced by rehabilitative interventions.

**Poppy Liossis**

completed her PhD at the University of Queensland and is currently a lecturer at the Queensland University of Technology (developmental psychology). Her current research interests focus on the nature of the changing family. Poppy is also a private practitioner.

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