

Reducing Alcohol-Impaired Driving: Ignition Interlocks

Summary Evidence Tables

Studies Evaluating Effects of Interlock Programs

First Author, Year ^{Ret} (Study Period) Study Design Evaluation Setting	Study Details	Interlock Program Details Administrator Eligibility requirements Installation Period Participation Rate	Results RR or HR for interlock group (95% confidence interval or p-value) Other results	Follow-up Period (maximum)
Beck, 1999 ²⁹ (Not specified) Randomized controlled trial Maryland	Intervention $n=698$ Comparison $n=689$ Comparison group comprised eligible drivers randomized to customary terms and restrictions for multiple offenders	DMV Repeat offenders who had petitioned for and were approved for relicensing (based on treatment compliance and evidence of "recovery") 12 months 64% of offenders randomize to interlock condition	Alcohol traffic violations during interlock period Repeat offenders: RR=0.36 (0.21, 0.63) Re-arrest in year following interlock period Repeat offenders: RR=1.33 (0.72, 2.46)	24 months
Voas, 2002 ³⁰ (1/87-10/99) Prospective cohort with concurrent comparison group Hancock County, Indiana	1 st offenders: $n=21,325$ Repeat: $n=9356$ Comparison group drawn from 6 other suburban counties surrounding Indianapolis	Courts Mandatory (for offenders with vehicles; threat of house arrest for non-compliance) Not specified 62% of offenders	Recidivism rates following adoption of mandatory interlock policy (adjusted for county, time, age, and gender main effects): 1 st offenders: HR=0.60 (p=.04) ^a Repeat offenders: HR=0.78 (p=.03) ^a	28 months (1 st offenders) 94 months (Repeat offenders)

Studies Evaluating Effects of Interlock Installation (included in Cochrane review)

First Author, Year ^{Ret} (Study Period) Study Design Evaluation Setting	Study Details	Interlock Program Details Administrator Eligibility requirements Installation Period Participation Rate	Results RR or HR for interlock group (95% confidence interval or p-value) Other results	Follow-up Period (maximum)
EMT Group, 1990 ³¹ (3/87-1/90) Prospective cohort with concurrent comparison	Intervention 1 st offenders: $n=283$ Repeat: $n=293$ Comparison	Courts Court discretion; participation mandatory ~50% of sentences were for 36-	Reconviction during interlock period 1 st offenders: RR=0.80 (0.42, 1.53) Repeat offenders: RR=0.53 (0.19, 1.48)	30 months

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group California	1 st offenders: <i>n</i> =270 Repeat: <i>n</i> =235 Comparison group matched on six criteria (conviction date, gender, race, age, prior DUIs, BAC level at arrest)	month periods 775 people sentenced to use interlocks during study period (25% did not install them)	Noncompliers with interlock sentences were disproportionately younger. Compliance rates were higher in San Diego, where personal appearances to prove compliance were often required	
Morse, 1992 ³² (7/87-12/90) Prospective cohort with concurrent comparison group Hamilton County, Ohio	Intervention <i>n</i> =273 Comparison <i>n</i> =273 Comparison group matched on (1) problem drinker classification; (2) number of DUI arrests; and (3) number of non-DUI alcohol/drug arrests	DMV Court discretion for offenders with (1) BAC>0.20, (2) BAC test refused, or (3) repeat offenders; participation optional 12 to 30 months 40.5% of eligible offenders	Re-arrest during interlock period All participants: RR=0.33 (0.15, 0.73) People who opted for interlock installation drove more miles than those who did not (e.g., 42% vs 30% drove more than 200 miles/week)	30 months
Jones, 1993 ³³ (1 Year; 88-89) Prospective cohort with concurrent comparison group Oregon	Intervention <i>n</i> =648 Comparison <i>n</i> =1541 Comparison group comprised drivers in comparison counties who reinstated their licenses	DMV Optional for offenders who have completed 1-3 years of "hard" license suspension (with no additional suspensions during that period) 6 months (in lieu of 6 months additional license suspension) 18% of eligible offenders	Re-arrest during interlock period Repeat offenders: RR=0.60 (0.35, 1.04) Re-arrest following interlock period Repeat offenders: RR=0.94 (0.73, 1.20) Judges tended to select more serious, habitual offenders for interlock program; offenders who accepted interlocks were more likely to be white, have higher incomes, and have multiple prior DUIs	Mean of ~21 months (6 with interlocks installed)
Popkin, 1993 ³⁸ (1/86-3/92) Prospective cohort with concurrent comparison group North Carolina	Intervention <i>n</i> =407 Comparison <i>n</i> =916 Comparison group comprised drivers who were granted a conditional license that did not require interlock installation	DMV Optional for offenders who have completed 2 years of "hard" license suspension 24 months (in lieu of 24 months additional license suspension) 1.8% of eligible offenders	Re-arrest during interlock period Repeat offenders: RR=0.38 (0.20, 0.71) Re-arrest following interlock period Repeat offenders: RR=1.07 (0.53, 2.18)	24 months
Raub, 2003 ³⁴ (7/91-6/00) Before/after study Illinois	Intervention <i>n</i> =1560 Comparison <i>n</i> =1384 Comparison group comprised drivers who	DMV Mandatory for offenders who applied for RDPs following a minimum 180-day suspension	Re-arrest during interlock period Repeat offenders: RR=0.19 (0.12, 0.30) Re-arrest in 2 years following interlock period Repeat offenders: RR=0.52 (0.41, 0.65) ^b	36 months

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	received restricted driving permits (RDPs) in the three years prior to the interlock program (i.e., 7/91-6/94)	period 12 months ~14% of eligible drivers	Drivers in interlock group were older than those in comparison group (mean age of 38.7 vs 37.5 years, p>0.05)	
Vezina, 2002 ³⁵ (12/97-1/01) Prospective cohort with concurrent comparison group Quebec	Intervention 1 st offenders: n=8846 Repeat: n=1050 Comparison 1 st offenders: n=25,559 Repeat: n=7108 Comparison group comprised drivers who did not participate in the interlock program	DMV Optional 9 months (1 st offenders) or 18 months (repeat offenders) 26% of 1 st offenders; 13% of repeat offenders	Re-arrest during interlock period 1 st offenders: RR=0.20 (0.14, 0.29) Repeat offenders: RR=0.34 (0.22, 0.53) Re-arrest following interlock period 1 st offenders: RR=1.37 (1.21, 1.56) Repeat offenders: RR=1.93 (1.02, 3.66) Single vehicle nighttime crashes during interlock period 1 st offenders: RR=1.05 (p=0.85) Repeat offenders: RR=0.46 (p=0.14) Total crashes during interlock period 1 st offenders: RR=3.56 (p<0.0001) Repeat offenders: RR=2.16 (p<0.0001)	36 months
Tippetts, 1998 ³⁶ (1/90-3/96) Retrospective cohort with concurrent comparison group West Virginia	Intervention 1 st offenders: n=137 Repeat: n=10,198 Comparison 1 st offenders: n=591 Repeat: n=20,062 Comparison group comprised drivers who did not participate in the interlock program	DMV Optional (requires enrollment in a treatment program, and no recent history of driving while suspended) 5 months (1 st offenders); 18 months (2 nd offenders) 1.9% of offenders	Re-arrest during interlock period 1 st offenders: RR=0.23 (0.01, 3.75) 2 nd offenders: RR=0.25 (0.14, 0.43) Re-arrest following interlock period 1 st offenders: RR=0.70 (0.32, 1.53) 2 nd offenders: RR=2.06 (1.63, 2.60)	30 months
Voas, 1999 ³⁷ (7/87-9/96) Prospective cohort with concurrent comparison group Alberta	Intervention 1 st offenders: n=1982 Repeat: n=781 Comparison 1 st offenders: n=17,587 Repeat: n=10,840 Comparison group comprised eligible drivers who did not participate in	Quasi-judicial board, with licensing authority Mandatory (6% of participants) or optional (94% of participants) for drivers with no arrests during suspension period 6 months (1 st offenders); 24 months (2 nd offenders) 8.9% of eligible offenders	Re-arrest during interlock period 1 st offenders: RR=0.05 (0.01, 0.18) 2 nd offenders: RR=0.11 (0.05, 0.23) Re-arrest following interlock period 1 st offenders: RR=0.91 (0.59, 1.39) 2 nd offenders: RR=0.96 (0.69, 1.32)	24 months post-interlock

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	the interlock program			
Marine, 2000; 2001 ^{39,43} (9/1996 to 10/2000) Prospective cohort with concurrent comparison group Colorado	Intervention $n=501$ Comparison $n=584$ Comparison group comprised random sample of non-applicants for the interlock program	DMV Optional for repeat offenders Interlock period was double the period of full license suspension <1% of offenders	Re-arrest during interlock period Repeat offenders: HR=0.16 (p=.0001) ^a Re-arrest following interlock period Repeat offenders: HR=0.58 (p=.07) ^a Interlock participants were older, and had higher incomes.	48 months

Studies Evaluating Effectiveness of Interlock Installation (Published After Cochrane Review)

First Author, Year^{Ref} (Study Period) Study Design Evaluation Setting	Study Details	Interlock Program Details Administrator Eligibility requirements Installation Period Participation Rate	Results RR or HR for interlock group (95% confidence interval or p-value) Other results	Follow-up Period (maximum)
Bjerre, 2005 ⁴⁰ (99-8/04) Prospective cohort with concurrent comparison group Sweden (3 counties)	Intervention $n=171$ Comparison $n=865$ Comparison group comprised matched drivers in comparison counties	Not specified Optional; alcohol treatment required 2 years 11% of eligible offenders	Re-arrest rates (total number of arrests) during interlock period Interlock group: 0.0%/year (0) Comparison group: 4.4%/year (57) Re-arrest rates(total arrests) following interlock period Interlock group: 1.8%/year (3) Comparison group: 4.0%/year (9) Injury crash rates (crashes) during interlock period Interlock group: 0.0%/year (0) Comparison group: 0.6%/year (9) Injury crash rates (crashes) following interlock period Interlock group: 0.9%/year (2) Comparison group: 0.6%/year (2)	>60 months
DeYoung, 2005; 2004 ^{21,41} (1/00-9/03)	Intervention $n=4219$ Comparison $n=865$	Courts or DMV Combination of optional and mandatory	Re-arrest during study period (during- and post- interlock installation) All participants: HR=0.68 (p<0.05)	45 months

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Prospective cohort with concurrent comparison group California	Comparison group comprised matched drivers without interlocks	Variable Not specified	Repeat offenders: HR=0.59 (p<0.05) Crashes during study period All participants: HR=1.84 (p<0.05) Repeat offenders: HR=2.30 (p<0.05) Crash rates for interlock drivers were comparable to those for other California drivers	
Roth, 2006 ⁴² (6/99-12/04) Prospective cohort with concurrent comparison group New Mexico	Intervention n=437 Comparison n=12,554 Comparison group comprised random sample of drivers without interlocks	Courts Optional (but with a conflicting mandatory license suspension laws) Not specified Not specified	Re-arrest during interlock period Repeat offenders: HR=0.35 (p<0.01) Re-arrest following interlock period Repeat offenders: HR=0.91 (p=0.40)	66 months
Roth, 2007 ²³ (1/03-12/05) Prospective cohort with concurrent comparison group New Mexico	Intervention n=1461 Comparison n=17,562 Comparison group comprised all first offenders without interlocks	Courts Mandatory for offenders with high BAC (≥0.16g/dL) or in injury crashes Mean installation period = 197 days 8.8% of offenders with BAC ≥0.16g/dL	Re-arrest during interlock period First offenders: HR=0.39 (p<.01) Re-arrest following interlock period First offenders: HR=0.82 (p=0.16) Re-arrest during study period (during- and post-interlock installation) First offenders: HR=0.61 (p=0.61) Interlock group tended to be older (35.7 vs 31.7 years), with more men and high BAC offenders	36 months

^a Results differ from those in Cochrane review (HRs reported, rather than RRs)

^b Results differ from those in Cochrane review (based on longer follow-up time)

BAC, blood alcohol content, DMV, Department of Motor Vehicles, DUI, driving under the influence, RDP, restricted driving permit

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