

## Prevention of Recidivism Among First-Offenders Drunk Drivers: Three-Year Outcomes of a Randomized Controlled Trial

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About one fifth of first offender drivers arrested for driving while intoxicated (DWI) will be rearrested during the three years following the offence. Different types of interventions have proven a certain level of efficacy.

**OBJECTIVES:** Measuring the efficacy of different types of educative interventions that could reduce the prevalence of recidivism among first offenders arrested for DWI.

**PATIENTS AND METHODS:** All eligible drivers received a voluntary invitation for participating to an educational program in order to reduce the probability of recidivism. Drivers who accepted were firstly interviewed and gave their informed consent to participate. Then, they were randomized into three different groups, corresponding into three kinds of interventions: a two-hour session, a half-day session with someone they previously have chosen for accompanying them during the session and a one-day session considered as the gold standard in the French-speaking part of Switzerland. Each participant paid 250\$ for participating. Each participating driver got a significant reduction of the driving licence suspension duration. Three years after the offence and the participation to the program, every driving administrative personal chart of the drivers were checked of any arrest for recidivism for DWI.

**RESULTS:** 1,588 drivers were eligible, 733 (46.2%) accepted to participate and 726 were formally included and randomized. 648 effectively participated to one of the three interventions (89.3% of included participants). 90.0% were males; mean age was  $37.1 \pm 0.9$  years. The mean blood alcohol concentration when arrested was  $1.58 \pm 0.03$ . About one fifth of the sample was alcohol dependent and one third alcohol abusers.

After 3 years, 85 drivers were rearrested for DWI (11.70%). Recidivism was distributed according to the type of intervention as following: two-hour session (9.2%); half-day session with a close relation (9.4%), one-day session (15.9%). Eligible drivers who refused to participate had a recidivism rate of 13.3%. Chi-square calculations confirm a significant difference between groups ( $p = 0.0299$ ). Half of recidivism happens in the first 650 days.

**CONCLUSIONS:** A very brief intervention has a real impact on the recidivism rate of DWI first offenders. Less can be unexpectedly better.

Keywords: Drunk driving, Randomized controlled trial, Recidivism

# Prevention of Recidivism among First-Offenders Drunk Drivers: Three-Year Outcome of a Randomized Controlled Trial. Geneva, Switzerland.

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## BACKGROUND

In Switzerland, as everywhere, driving under the influence of alcohol (DUIA) is a chronic problem for traffic safety. Between 10% to 20% of DUIA first-offenders will be re-arrested for DUIA despite severe penalties.

## RATIONALE

Most drunk drivers lack knowledge about alcohol abuse and the potential dangers and consequences of driving under the influence of alcohol. We hypothesized that an educational intervention for first-offenders would decrease the recidivism rate of DUIA among non severely dependant drivers.

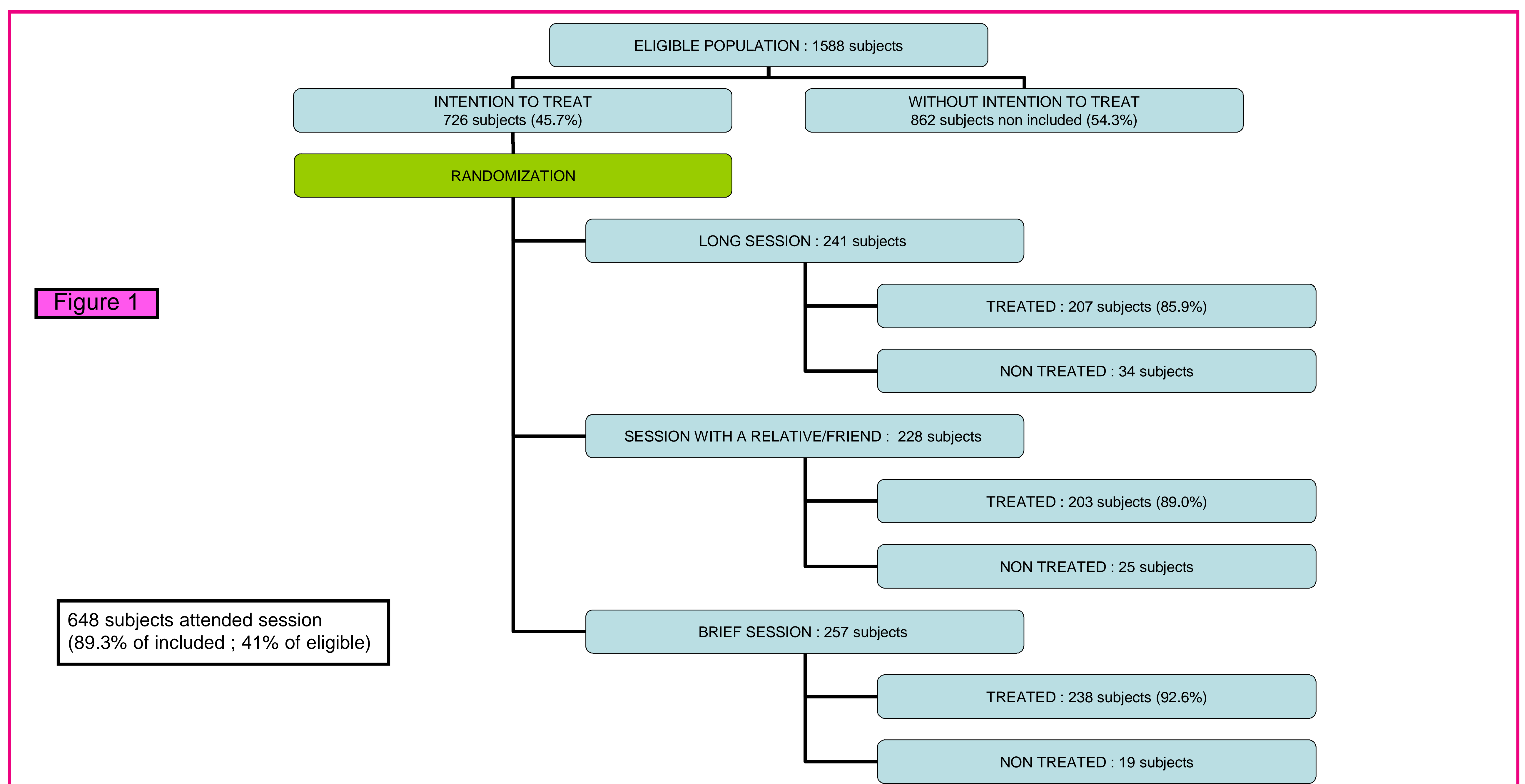
## AIMS OF THE STUDY

- To compare the efficacy of three types of educational interventions in order to decrease recidivism of drunk-driving among first offenders.
- To assess the acceptability and the feasibility of an educational intervention among first-offender drunk-drivers.
- To describe the population included in the study in terms of alcohol status and driving status.

## ELIGIBLE POPULATION

The following offenders were eligible to take part in the program :

- over the age of 18 years, with a driver's license and arrested for the first time for DUIA with a BAC $\geq$ 0.8 ‰ and <2.5 ‰ during the 33-month inclusion period ;
- resident in an area covered by the administrative authority of the regional Driving License Board (inhabitants of Geneva and of neighboring France) ;
- not alcohol dependant ;
- had agreed to sign an informed consent form.



## METHOD

Each eligible driver received a formal invitation to participate in the program on a voluntary basis. After an interview to verify eligibility and collect personal data, drivers signed the informed consent and were randomly assigned to one of the three intervention groups. They had to pay a fee to be authorized to participate (200\$/160€). Participating drivers got a one-month reduction of their driving license suspension. All administrative records of the participating drivers were examined three years after the offence to collect data about recidivism.

## EDUCATIONAL INTERVENTIONS

■ **Long session (LS)** : one-day session (7 hrs) considered as the gold standard in the French-speaking part of Switzerland.

■ **Session with a relative/friend (SRF)** : half-day session (4 hrs) where the driver has chosen someone to attend the session with him/her.

■ **Brief session (BS)** : two-hour session.

Each session developed the same model of medical, psychological, criminal policy and insurance policy information adapted to the length of the session.

## RESULTS

1588 drivers were eligible and received an invitation to participate in the program (Figure 1).

726 were randomized but 78 did not attend the sessions and did not pay the fees.

### Intention to treat

Comparing the 3 intention-to-treat analysis groups does not show any statistically significant differences: age, gender, history of driving, BAC during DUIA, and AUDIT scores (Table 1).

In the opposite way, we observed (statistically significant) that non included drivers were younger, were more frequently males and more frequently heavy drinkers but had a lower mean BAC than treated drivers (Table 1).

Table 1. Means and Frequencies Within Groups							
		ELIGIBLE POPULATION					
				LS	SRF	BS	non treated
N		1588	862	total	total	total	78
AGE (years)	mean ± c.i.	35.5 ± 0.6	34.1 ± 0.6	37.2 ± 1.6	36.9 ± 1.7	37.3 ± 1.5	35.9 ± 3.0
DRIVING EXPERIENCE	mean ± c.i.	14.6 ± 0.6	12.9 ± 0.6	16.4 ± 1.6	16.6 ± 1.7	16.2 ± 1.6	15.5 ± 3.2
BAC (‰)	mean ± c.i.	1.53 ± 0.02	1.49 ± 0.03	1.57 ± 0.05	1.59 ± 0.05	1.57 ± 0.05	1.49 ± 0.09
GENDER	m (%)	89.0	89.7	89.2	88.2	87.5	92.3
	f (%)	11.0	10.3	10.8	11.8	12.5	7.7
BAC classes (‰)	0.80 - 1.49 (%)	48.9	53.8	45.2	39.0	44.0	52.6
	1.50 - 1.99 (%)	36.6	34.4	36.5	42.5	38.1	33.3
	2.00 - 2.49 (%)	14.5	11.8	18.3	18.4	17.9	14.1
AUDIT	dependent (%)			3.3	7.0	5.4	9.0
	at risk (%)			32.5	30.8	32.7	34.6
	social (%)			64.2	62.1	61.9	56.4

### Recidivism

Re-offenders are significantly ( $p < 0.05$ ) younger, more frequently males, have less driving experience and a BAC higher than the non re-offenders (Table 2)

Table 2. Comparison between re-offenders and non re-offenders according to the type of intervention									
		NO RE-OFFENSE				RE-OFFENSE			
		TREATED			NOT TREATED	TREATED			NOT TREATED
		LS	SRF	BS		LS	SRF	BS	
N		174	184	216	815	33	19	22	125
AGE (years)	mean ± c.i.	38.5 ± 1.8	37.0 ± 1.8	38.0 ± 1.7	34.8 ± 0.6	33.0 ± 4.0	35.1 ± 5.8	31.4 ± 4.3	30.2 ± 0.5
DRIVING EXPERIENCE	mean ± c.i.	17.5 ± 1.9	16.8 ± 1.8	17.2 ± 1.8	13.8 ± 0.6	11.6 ± 4.3	13.3 ± 4.8	9.0 ± 3.4	8.9 ± 0.5
BAC (‰)	mean ± c.i.	1.57 ± 0.06	1.58 ± 0.05	1.57 ± 0.05	1.49 ± 0.03	1.66 ± 0.14	1.71 ± 0.20	1.73 ± 0.20	1.51 ± 0.07

**Table 3. Recidivism rate (%)**

		TREATED			NOT TREATED
		LS	SRF	BS	
N		207	203	238	940
RECIDIVISM RATE		15.9	9.4	9.2	13.3
BAC (‰)	0.80 - 1.49	12.2	7.5	9.0	12.5
	1.50 - 1.99	16.7	7.1	4.3	13.4
	2.00 - 2.49	23.1	18.4	20.5	16.4
HOURS CLASSES	00:00 - 06:00	14.7	9.9	9.8	15.3
	06:00 - 12:00	40.0	7.7	20.0	15.2
	12:00 - 18:00	10.0	14.3	7.1	10.2
	18:00 - 24:00	8.8	5.7	4.4	5.5

Considering only the attending drivers, the recidivism rate varies from 9.2% to 15.9%. Attending effect is obvious and statistically significant (Chi Square Test ;  $p < 0.05$ ) : BS and SRF have the same recidivism rate that is much better than the LS (Table 3).

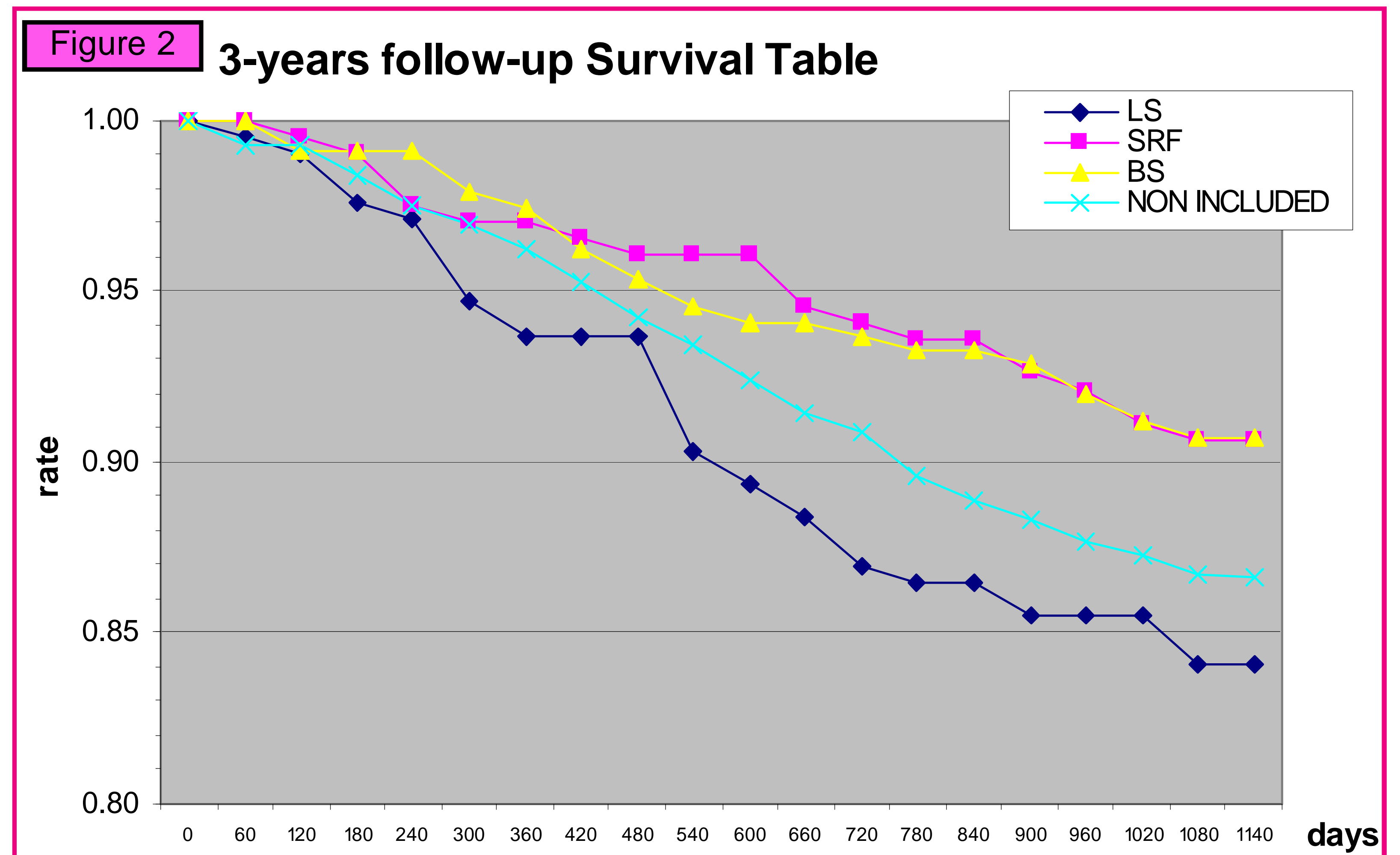
Survival rates are presented on Figure 2.

Table 4, Figures 3 and 4 show that whatever the types of session, drivers with low alcohol intake perform better and re-offense less frequently. Among drivers with a  $BAC > 2.0‰$ , recidivism rate is higher than in the "non included" group.

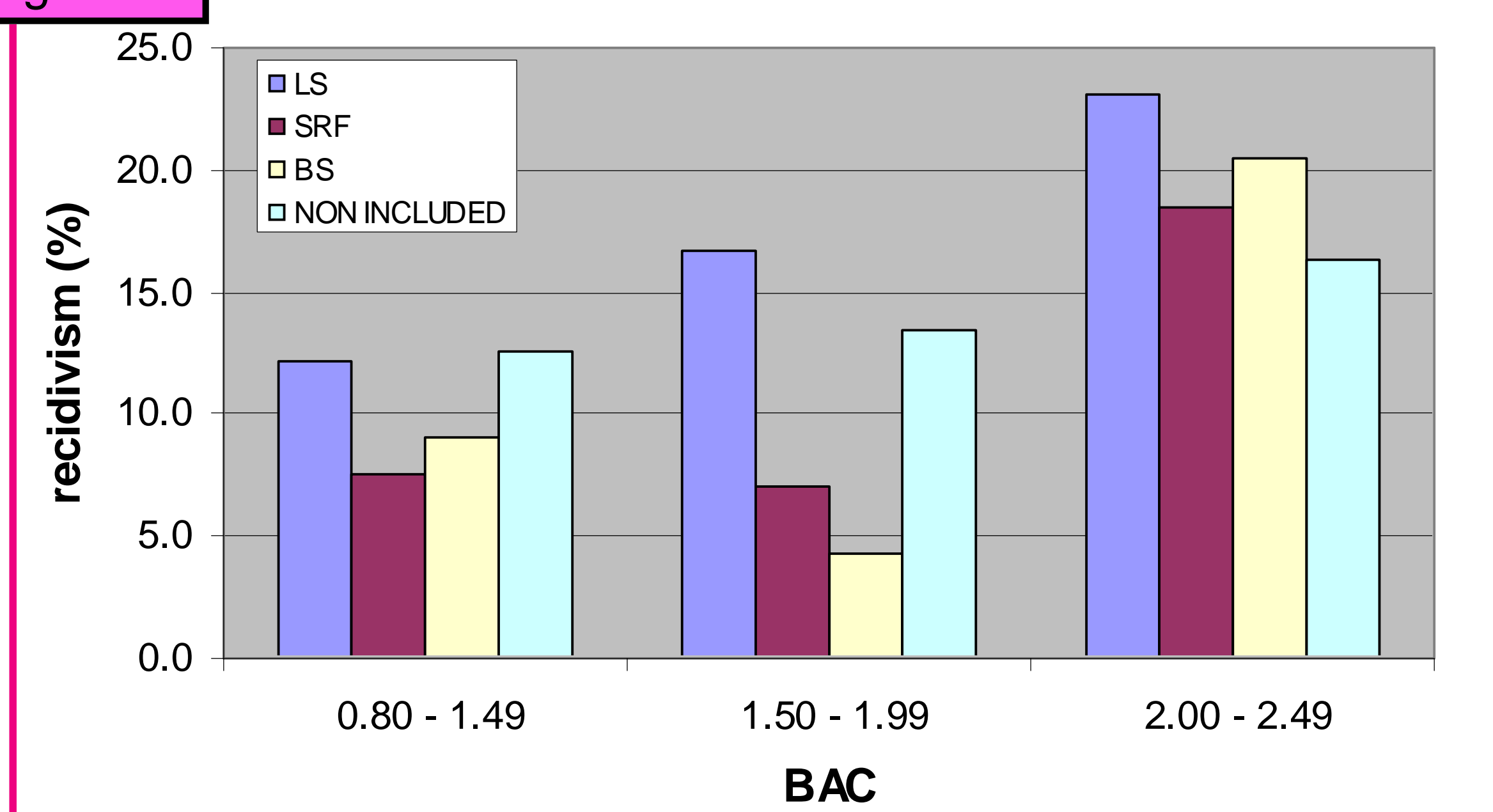
**Table 4. Comparison between group of re-offenders and group of non re-offenders**

		NO RE-OFFENSE	RE-OFFENSE
N		1389	163
AGE (years)	mean ± c.i.	36.1 ± 0.6	31.3 ± 1.6
DRIVING EXPERIENCE	mean ± c.i.	15.3 ± 0.6	9.8 ± 1.4
BAC	mean ± c.i.	1.53 ± 0.02	1.58 ± 0.06
GENDER	m (%)	88.3	94.5
	f (%)	11.7	5.5
BAC (‰)	0.80 - 1.49	49.2	44.7
	1.50 - 1.99	36.9	33.2
	2.00 - 2.49	13.9	22.1
HOURS CLASSES	00:00 - 06:00	67.9	75.3
	06:00 - 12:00	7.4	12.1
	12:00 - 18:00	5.6	4.5
	18:00 - 24:00	19.0	8.1

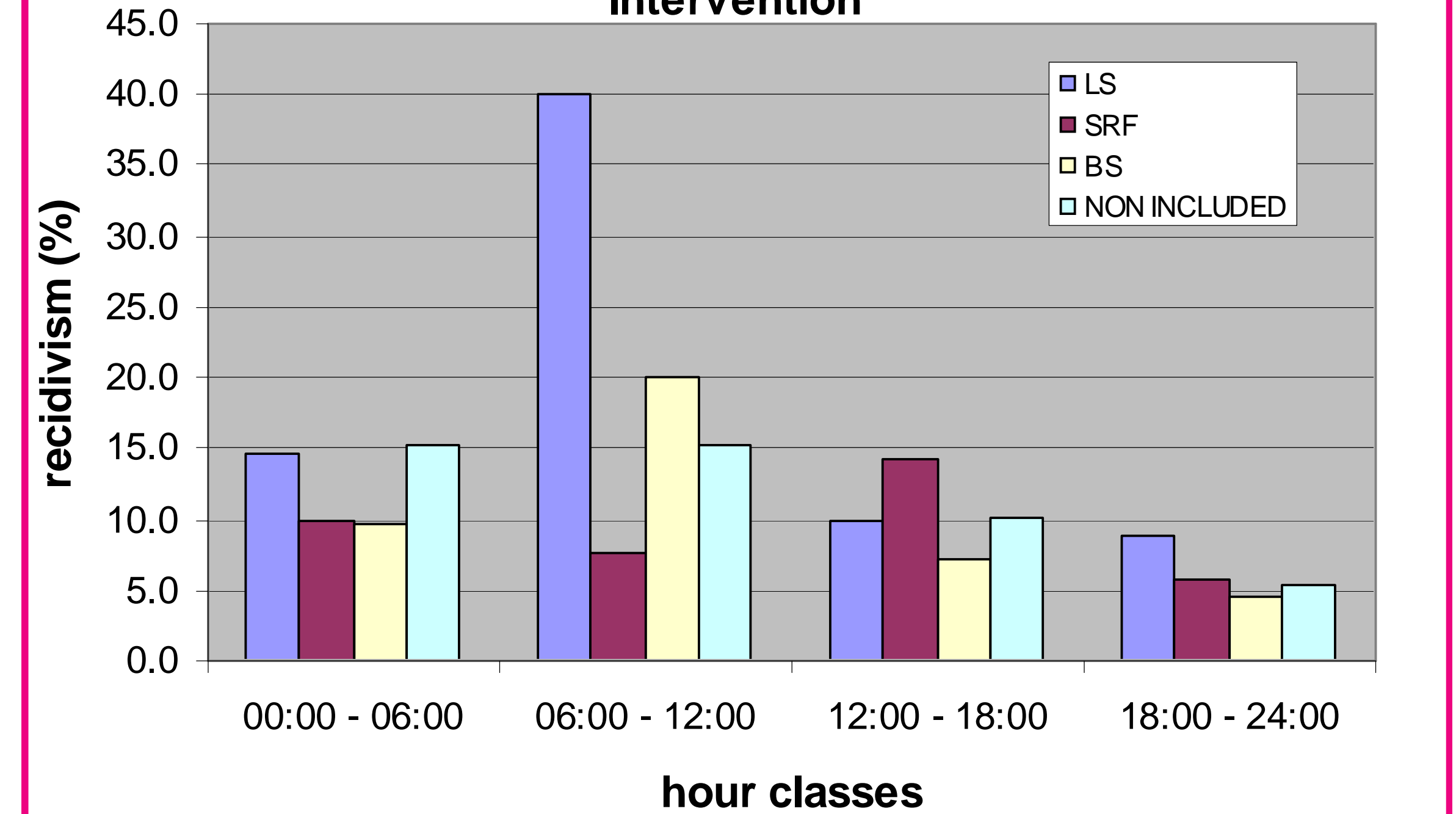
**Figure 2 3-years follow-up Survival Table**



**Figure 3 Recidivism rate according to BAC and Intervention**



**Figure 4 Recidivism rate according to hour classes of DUIA and Intervention**



## Public health perspective

116 relatives or friends attending the SRF were holders of a driving license (58% of the relatives or friends who attended the sessions) and benefited from the information provided during the sessions.

## CONCLUSION

The recidivism rate is lower in the BS group and in the SRF group than in the LS group. Attending a two-hours group reduces the recidivism rate as well as attending a four-hours session with a relative or a friend (no significantly statistical difference).

Comparing BS and SRF recidivism rates to the "non included" group, BS and SRF reduces about re-offence by 30% (from 13.3% to 9.3%).

Educational interventions are efficient if they address drivers with low alcohol intake and if they are considered as acceptable by drivers (fees, length and content). Paradoxically, among drivers with a  $BAC > 2.0‰$ , they are not efficient and could worsen the recidivism rate.

From a public health perspective, the SRF group has the advantage of giving information to a non-offending population whose a majority (58%) is holder of a driving license.

## PERSPECTIVES

On a cost-effective analysis, BS offer a low recidivism rate and a good efficacy if the drivers with high alcohol intake and  $BAC < 2‰$  are excluded. This type of session will be developed in the Canton of Geneva.