



**TRAFİKTE
ALKOL VE UYUŞTURUCU İLE ETKİN MÜCADELE
SEMPOZYUMU**

15-16 EKİM 2012

CELAL BAYAR ÜNİVERSİTESİ
SÜLEYMAN DEMİREL KÜLTÜR MERKEZİ
MANİSA



Tarama Testlerinde

Dünya Üzerinde Uygulanan Teknikler

Doç. Dr. Rezzan GÜLHAN (AKER)

Marmara Üniv. Tıp Fakültesi Tıbbi Farmakoloji AD

Adli Tıp Kurumu 5. İhtisas Kurulu Üyesi ve Kimya İhtisas Dairesi Danışmanı

Tarama testi

- Sağlıklı görünen popülasyonda bir hastalığın/durumun olma riskinin belirlenmesi, hastalığa yakalanma riski yüksek olan kişilerin belirlenebilmesi için kullanılan testlerdir.

Uses and abuses of screening tests. David A Grimes, Kenneth F Schulz, THE LANCET, Vol 359, March 9, 2002

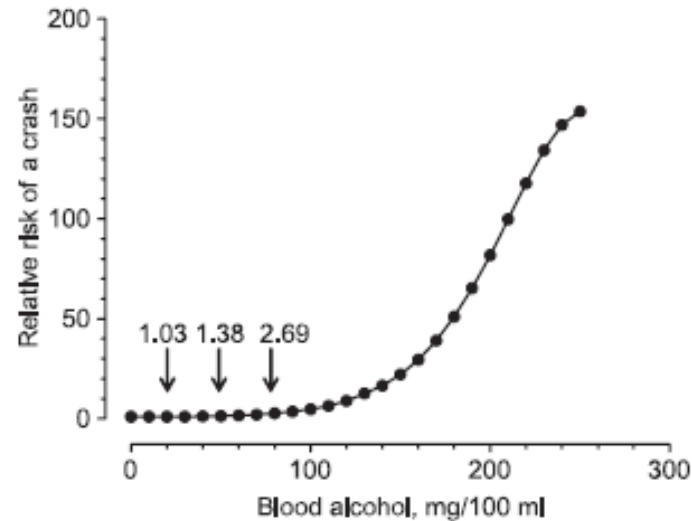
Tarama testi

- Sensitivite - **Duyarlılık**; test sonucu pozitif çıkanlarda gerçekten hastalığı taşıyanların oranını gösterir veya hastalığa sahip olanlarda testin pozitif çıkma olasılığıdır.
- Spesifite - **Özgüllük**; test sonucu negatif çıkanlarda gerçekten hastalık taşımayanların oranını gösterir veya hastalığı taşımayanlarda testin negatif çıkma olasılığıdır.

	Hastalık +	Hastalık -
Test +	a Gerçek +	b Yanlış +
Test -	c Yanlış -	d Gerçek -

Cut-off değeri

Figure 3.1: Case-control study of the relative risk of a crash plotted as a function of the driver's BAC; the latter was derived from analysis of the driver's breath (BrAC × 2,100) with an AlcoSensor instrument



The relative risk of a crash is only slightly increased (> 1.0) up to a BAC of 50 mg/100 ml, but rises to 2.69 times at 80 mg/100 ml and, as the BAC increases further, the risk of a crash increases dramatically. The above study was undertaken in Florida and California, and the results were published recently (Jones, 2008).

Alan Wayne Jones, 2010

Table 17: Distribution of positive alcohol findings by BAC-group among seriously injured and killed drivers (based on D2.2.5)

BAC group	Seriously injured drivers		Killed drivers	
	Frequency	Percent	Frequency	Percent
0.1 ≤ BAC < 0.5 g/L	58	9.5	45	12.7
0.5 ≤ BAC < 0.8 g/L	48	7.9	26	7.3
0.8 ≤ BAC < 1.3 g/L	103	16.9	33	9.3
BAC ≥ 1.3 g/L	400	65.7	250	70.6
Total	609	100.0	354	100.0

DRUID

Table 30: Overview of estimated increase of relative risk of serious injury or fatality based on case control studies (D2.3.5).

	Substance	Estimated relative risk of serious injury or fatality based on case control studies	Risk of injury
Alcohol (BAC) Alone	0.1-0.5g/L	1-3x	slightly increased
	0.5 - 0.8g/L	2-10x	medium increased
	0.8 - 1.2g/L	5-30x	highly increased
	≥1.2g/L	20-200x	extremely increased
Illicit drugs Alone	Amphetamines	5-30x	highly increased
	Benzoyllecgonine	2-10x	medium increased
	Cocaine*	2-10x	medium increased
	THC**	1-3x	slightly increased
	Illicit opiates	2-10x	medium increased
Medicines Alone	Benzodiazepines + Z-drugs	2-10x	medium increased
	Medicinal opioids	2-10x	medium increased
Combined use	Alcohol-drug***	20-200x	extremely increased
	Drug-drug	5-30x	highly increased

*Cocaine or cocaine + benzoyllecgonine; **THC or THC + THCCOOH; ***Alcohol ≥0.1g/L; more precise substance definitions can be found in Annex 3: Substance classes, groups and the analytical findings within DRUID hospital studies

Tarama Testleri



Kan

İdrar

Nefes

Saç

Tükrük

Ter

Tarama Testleri

- **Hedef:** Beynimizin madde etkisi altında olup olmadığını anlamak
- **Alkol**
 - KAN
 - SOLUNUM HAVASI / NEFES
- **İlaç ve uyuşturucu-uyuşturucu-uyarıcı maddeler**
 - KAN
 - İDRAR
 - TÜKÜRÜK
 - SOLUNUM HAVASI

KAN TESTLERİ

- Bireyin herhangi bir zamanda ilaç/madde etkisi altında olup olmadığını belirlemek için kullanılan **en güvenilir yöntemdir.**

- **İnvaziv**

- Akut madde kullanımını gösterir
- Tıbbi laboratuara gereksinim vardır
- Pahalı
- Ulaşımı sürücülerin psikoaktif madde etkisinde olup olmadığına yönelik yol kenarında yapılacak tarama testleri için bir dezavantaj oluşturmaktadır.



İDRAR TESTLERİ

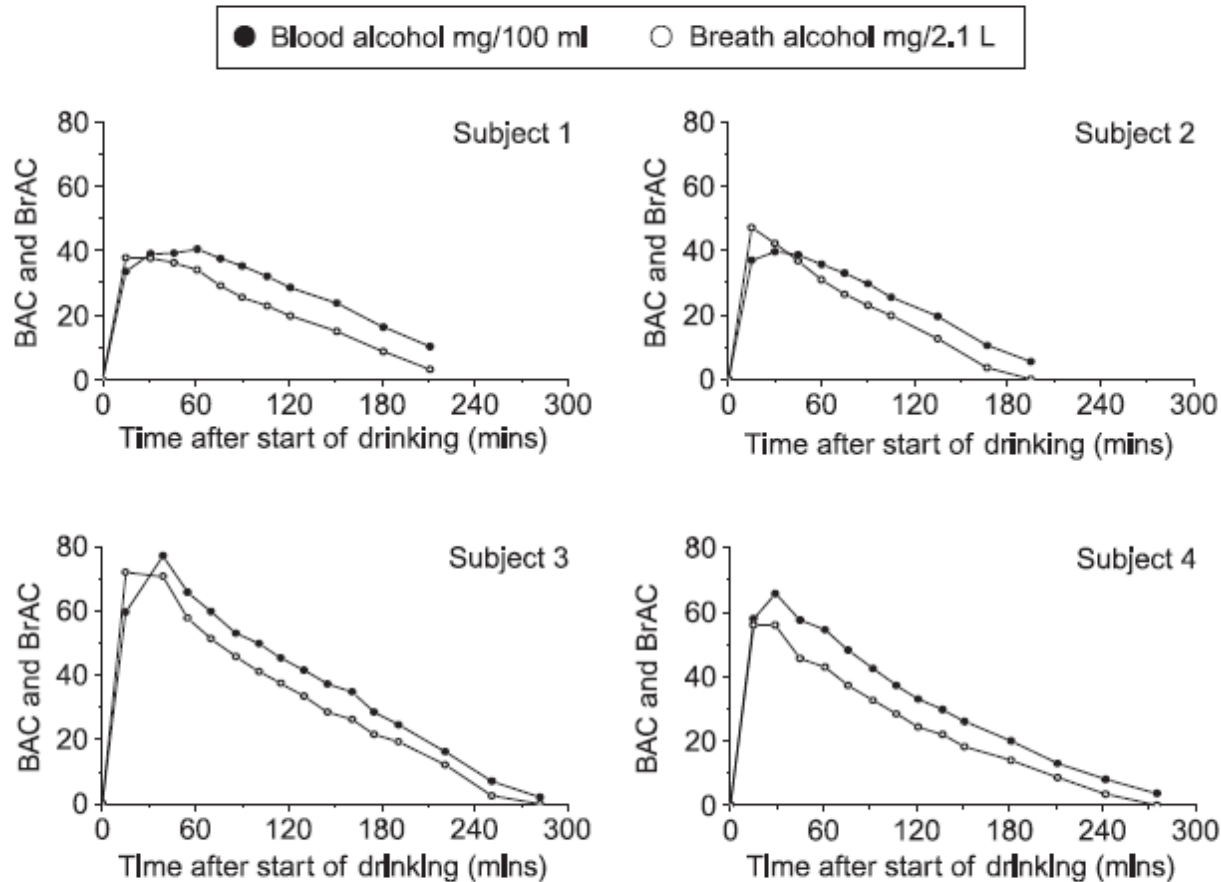
- Akut madde kullanımından ziyade geniş bir zaman aralığını gösterir (değişmekle birlikte 1 hafta)
 - İnvaziv değil
 - Örnek alımı uzun olabilir
 - Nispeten ucuz
 - Adülterasyona açık
 - aynı zamanda pH seviyesi ve kreatinin konsantrasyonunun belirlenmesi adülterasyonun saptanmasında yardımcı olur.



SOLUNUM HAVASI / NEFES TESTLERİ

- Kandaki serbest madde konsantrasyonunu, dolayısı ile **akut madde kullanımını** yansıtır.
 - İnvaziv değil ve idrara göre daha kolay alınır
 - Aldülterasyonu idrara göre daha zor
 - Hızlı elde edilir
 - Karıştırıcı faktörler (ağız alkolü, kullanılan ilaç-spreyler, vb.)
 - Kan/nefes oranı (BBR) – 1800:1, 2000:1, 2000:2, 2000:3, 2400:1, 3000:1

Figure 4.2: Changes in the venous blood-breath ratio of alcohol as a function of time after the administration of the alcohol in this experiment the alcohol was given by a constant rate intravenous infusion over 30 minutes to avoid a mouth-alcohol effect



Concentration-time profiles of alcohol in four subjects after they drank a moderate dose of alcohol before near simultaneous samples of venous blood and end-exhaled breath were taken for determination of alcohol content (Jones, 2008). The BAC was measured with an Intoxilyzer 5000 evidential instrument and the blood-alcohol was analysed by gas chromatography. The BrAC was multiplied by 2,100:1 to approximate the BAC. The breath-analyzer gave results

SOLUNUM HAVASI / NEFES TESTLERİ

1874 Francis Edmund Anstie

solunum havasında alkol

1927 Emil Borgen

THE DIAGNOSIS OF DRUNKENNESS—A QUANTITATIVE STUDY OF ACUTE ALCOHOLIC INTOXICATION, Cal West Med . 1927

June; 26(6): 778–783.

2 litre solunum havasındaki alkol miktarını 1 ml idrardaki alkol miktarından biraz fazla olduğunu gösterdi.

1938 R. N. Harger

Drunkometer

1941 Glen Forester

Intoximeter

1942 Leon Greenberg

Alcometer

1954 Robert Borkenstein

Breathalyser

778

CALIFORNIA AND WESTERN MEDICINE

Vol. XXVI, No. 6

THE DIAGNOSIS OF DRUNKENNESS—A
QUANTITATIVE STUDY OF ACUTE
ALCOHOLIC INTOXICATION*

By EMIL BOREN, M. D.
Los Angeles

THE tremendous increase of automotive traffic, with its greater speed and consequent greatly increased possibilities for serious accidents, and the difficulties incident to the enforcement of the laws arising out of the prohibition amendment to the Constitution have thrown upon the physician many more problems and increased responsibilities in con-

brain tumor, Friedreich's ataxia, pernicious anemia with cord changes, early meningitis, etc.

Under the circumstances that generally prevail at the time of the usual examination for intoxication, following an accident, shock or arrest, confusing functional disturbances are apt to occur. Of course, the differentiation between all of these conditions and acute alcoholic intoxication may be readily made in the majority of instances by the absence or presence of other signs or symptoms essential for the diagnosis, but this is not always the case, and it must not be forgotten that a man suffering from one of these other conditions may, and fre-



SOLUNUM HAVASI / NEFES TESTLERİ

- **ALKOL**
(SOLUNUM HAVASI)
 - *Kimyasal oksidasyon*
 - Potasyum dikromat ve sülfirik asit
 - *Katı sensör*
 - Taguchi hücresi –metal oksit yarı iletken sensör
 - *Elektrokimyasal hücre*
 - Yakıt hücresi (fuel-cell)
 - *Infrared spektroskopi*
 - *Dual (IR+EK)*
 - *OIML (International Organization of Legal Metrology)-R126*



Table 2.1: Statutory BACs, BrACs, BBRs of alcohol and the evidential breath analyzers used in various EU countries

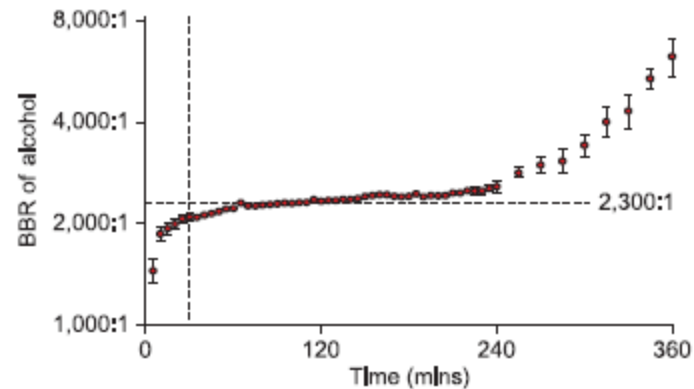
Country	Statutory BAC	Statutory BrAC	BBR	Evidential breath alcohol analyzer	Operating principle
Austria	0.50 g/l	0.25 mg/l	2,000	Alcotest 7110	Infrared 9.5 μm and EC
Belgium	0.50 g/l	0.22 mg/l	2,272	Ethylometer Alcotest 7110	Infrared 9.5 μm Infrared 3.4 μm and EC
France	0.50 g/l	0.25 mg/l	2,000	Alcotest 8510	Infrared 9.5 μm
Greece	0.50 g/l	0.25 mg/l	2,000	Ethylometer	Infrared 9.5 μm
Italy	0.50 g/l	0.25 mg/l	2,000	Alcolmeter SD-400 Alcotest 7110	EC oxidation Infrared (9.5 μm) and EC
Poland	0.20 g/l	0.10 mg/l	2,000	Intoxilyzer 8000C Ethylometer AlcoSensor IV	Infrared 9.5 μm Infrared 9.5 μm EC oxidation
Portugal	0.50 g/l	0.25 mg/l	2,300	Alcotest 7410 Alcotest 7110	EC oxidation EC oxidation Infrared 9.5 μm and EC oxidation
Republic of Ireland	80 mg/100 ml	35 μg/100 ml	2,300	Intoxilyzer 6000	Infrared 3.4 μm with EC for analysis of ethanol
Spain	0.50 g/l	0.25 mg/l	2,000	Alcotest 7110	Infrared 9.5 μm and EC oxidation
Netherlands	0.50 mg/ml	220 μg/l	2,300	DataMaster	Infrared 3.4 μm
United Kingdom	80 mg/100 ml	35 μg/100 ml	2,300	Intoximeter EC-IR Intoxilyzer 6000	EC oxidation Infrared 3.4 μm
Denmark	0.50 mg/g	0.25 mg/l	2,100	Evidenzer	Multi-wavelength infrared 3.4 μm
Finland	0.50 mg/g	0.22 mg/l	2,400	Alcotest 7110	Infrared and EC
Germany	0.50 mg/g	0.25 mg/l	2,100	Alcotest 7110	Infrared 9.5 μm and EC
Norway	0.20 mg/g	0.10 mg/l	2,100	Intoxilyzer 5000N	Multi-wavelength infrared 3.4 μm
Sweden	0.20 mg/g	0.10 mg/l	2,100	Evidenzer	Multi-wavelength infrared 3.4 μm
Australia	0.05 g/100 ml	0.25 mg/l	2,100	Alcotest 7110 DataMaster	Infrared 9.5 μm and EC Infrared 3.4 μm
Canada	80 mg/100 ml	0.08 g/210 l	2,100	Intoxilyzer 5000C Intoxilyzer 8000C DataMaster C	Infrared 3.4 μm Infrared 9.5 μm Infrared 3.4 μm
New Zealand	80 mg/100 ml	400 μg/l	2,300	Ethylometer	Infrared 9.5 μm
USA	0.08 g/100 ml	0.08 g/210 l	2,100	Intoxilyzer 5000 Intoxilyzer 8000 Intoximeter EC-IR DataMaster Alcotest 7110	Infrared 3.4 μm Infrared 9.5 μm EC and Infrared Infrared 3.4 μm Infrared 9.5 μm and EC oxidation

Road Safety Web Publication No. 15

The Relationship between Blood Alcohol Concentration (BAC) and Breath Alcohol Concentration (BrAC): A Review of the Evidence

Alan Wayne Jones, 2010

Figure 4.3: Concentration-time profiles of alcohol in venous blood and breath in a controlled study with four healthy volunteers who drank moderate amounts of alcohol (0.6–0.8 g/kg). The breath results were multiplied by a BBR of 2,100 to bring them more in line with the blood results



This plot shows how the venous BAC/BrAC ratio changes as a function of time after the administration of alcohol by intravenous infusion. This route of administration was chosen so that breath samples could be analysed without the risk of them being contaminated with mouth alcohol. The results show that the venous BAC/BrAC ratio of alcohol is a moving target, changing continuously as a function of time after giving the alcohol. The BBR is also seen to increase appreciably as venous BAC reaches low concentrations in the blood at times > 240 minutes.

Table 7.1: Statutory BrAC limits corresponding to statutory BAC limits of 20–80 mg/100 ml and BBRs of 2,000:1, 2,100:1 and 2,300:1

Blood-alcohol limit (mg/100 ml)	Breath-alcohol limit (µg/100 ml) (BBR 2,000) ¹	Breath-alcohol limit (µg/100 ml) (BBR 2,100) ²	Breath-alcohol limit (µg/100 ml) (BBR 2,300) ³
20	10	10	9
30	15	14	13
40	20	19	17
50	25	24	22
60	30	29	26
70	35	33	30
80	40	38	35

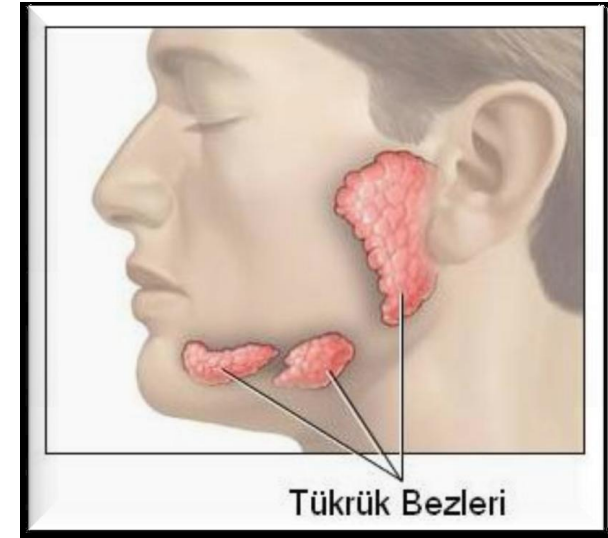
¹ Current BBR for people 35–40 µg/100 ml and also in some EU countries.

² BBR applied in the USA and Canada.

³ BBR used in the UK when setting the BrAC limit of 35 µg/100 ml.

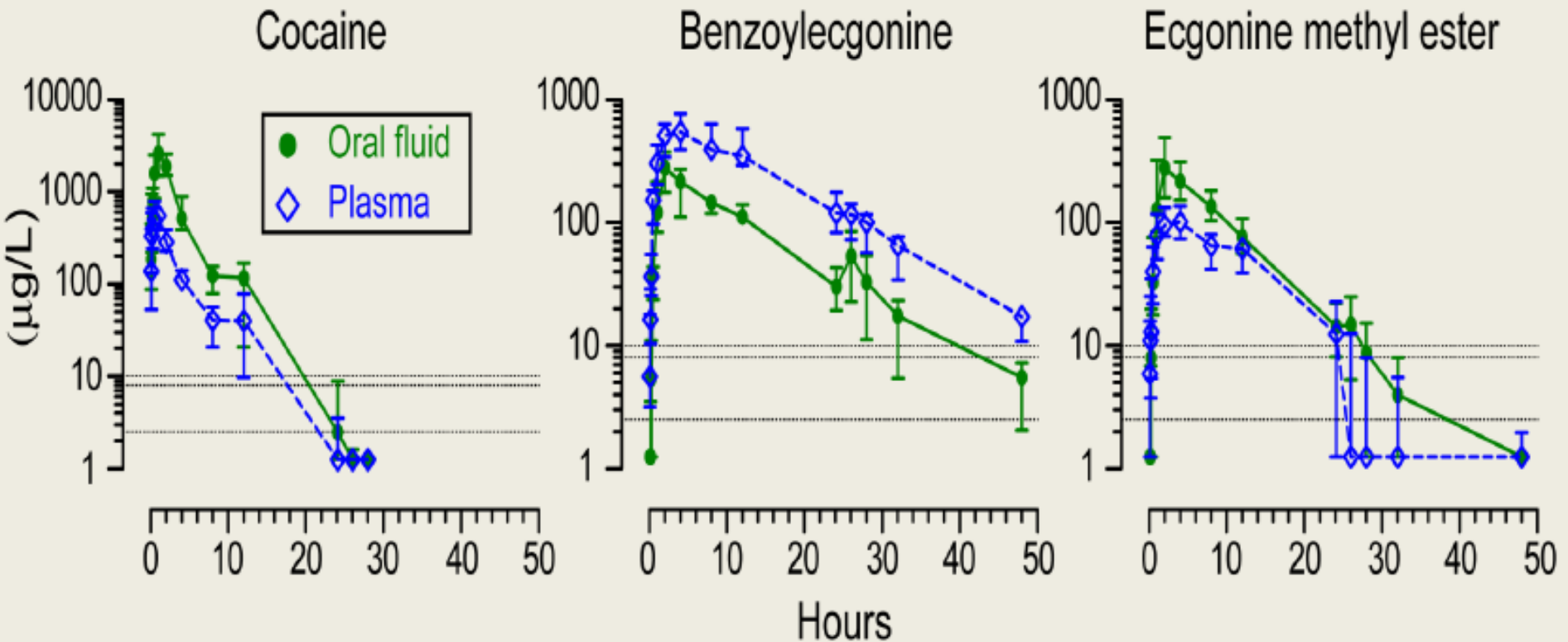
AĞIZ SIVISI/TÜKRÜK TESTLERİ

- Plazmadaki serbest ilaç konsantrasyonunu, dolayısı ile **akut madde kullanımını** yansıtır.
 - İnvaziv değil ve idrara göre daha kolay alınır
 - Aldülterasyonu idrara göre daha zor
 - Hızlı elde edilir
 - % 99'u su
 - bir günde salgılanma miktarı 1-1,5 lt.
 - % 30'u kulak altı (parotis),
 - % 60'ı çene altı (submandibuler),
 - % 5'i dil altı (sublingual)
 - % 5'i de küçük tükürük bezleri vasıtasıyla üretilmektedir.

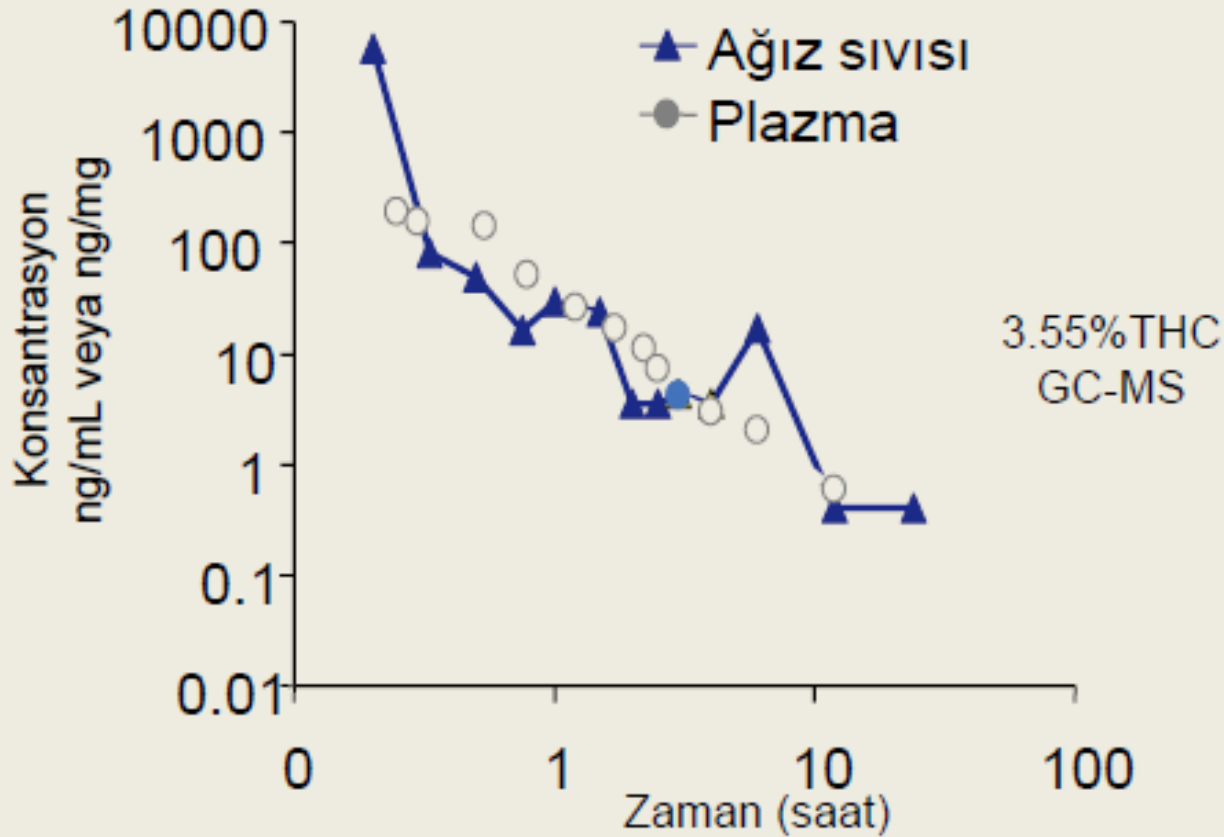


Plazma ve ağız sıvısında kokain konsantrasyonlarının karşılaştırılması

150 mg/70 kg sc kokain, (N=14 oral sıvı) (N=13 plazma)



Plazma ve ağız sıvısında THC (esrar) konsantrasyonlarının karşılaştırılması



Çalışmalar

- **IMMORTAL , 2002-2004**
 - (Impaired Motorists, Methods of Roadside Testing and Assessment for Licensing)
- **ROSITA , 2003-2005**
 - (Roadside Testing and Assessment)
- **US NATIONAL ROAD SURVEY, 2007**
- **DRUID, 2006-2010**
 - (Driving Under the Influence of Drugs, Alcohol and Medicines)

ROSITA (2003-2005)

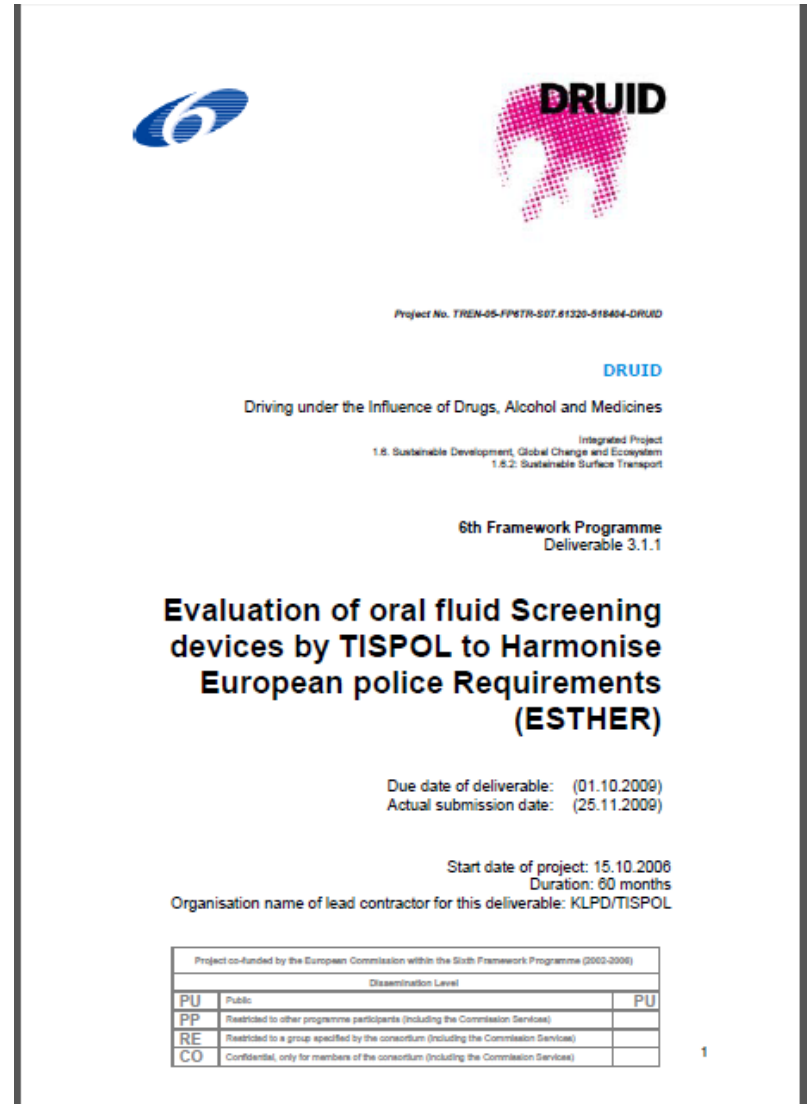
- 2003-2005, Avrupa Birliđi projesi
- Ađız sıvısı (tükrük) testlerinin “onsite” kullanılabilirliđi ve analitik güvenilirliđinin deđerlendirilmesi
- 9 cihaz deđerlendirildi
- Amfetaminler, metamfetain, esrar, kokain ve opiatlar test edildi. Üç cihaz benzodiyazepinleri de analiz etme kapasitesine sahip bulundu.
- Sonuçlar: *Tükrük test cihazlarının sensitivitesi düşük, kullanıcıya bađımlı sonuçlar, uygulama için henüz yeterli deđiller.*

DRUID

- 2006-2010
- 2009 “ESTHER” raporu :
Evaluation of oral fluid
Screening devices by TISPOL
to Harmonise European
police Requirements.
- 13 cihaz değerlendirildi

(Rosita çalışması)

TISPOL: European Traffic Police Network





The image shows the cover page of a project deliverable. At the top left is the European Union flag logo. To its right is the DRUID logo, which consists of a pink elephant silhouette made of dots with the word "DRUID" in bold black letters above it. Below the logos, the text reads: "Project No. TREN-05-FP678-S07.61320-510404-DRUID". Further down, the word "DRUID" is written in blue, followed by "Driving under the Influence of Drugs, Alcohol and Medicines" in black. Below that, it says "Integrated Project" and "1.8. Sustainable Development, Global Change and Ecosystem" and "1.8.2. Sustainable Surface Transport". The next line is "6th Framework Programme" and "Deliverable 3.1.1". The main title of the deliverable is "Evaluation of oral fluid Screening devices by TISPOL to Harmonise European police Requirements (ESTHER)" in bold black text. Below the title, the due date is "(01.10.2009)" and the actual submission date is "(25.11.2009)". The start date of the project is "15.10.2006" and the duration is "60 months". The organization name of the lead contractor is "KLPD/TISPOL". At the bottom, there is a table with the following content:

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

DRUID

- Kullanım kolaylığı
- Çabukluk: Örnek alımı ve analiz < 15 dakika olmalı
- Hijyenik özellikleri (polis açısından)
- Mahremiyetin sağlanması (uygulanan kişi açısından)
- Sonuçların görülür ve anlaşılır olması
- Doğruluk



Project No. TREN-05-FP6TR-S07.61320-510404-DRUID

DRUID

Driving under the Influence of Drugs, Alcohol and Medicines

Integrated Project
1.8. Sustainable Development, Global Change and Ecosystem
1.8.2. Sustainable Surface Transport

6th Framework Programme
Deliverable 3.1.1

Evaluation of oral fluid Screening devices by TISPOL to Harmonise European police Requirements (ESTHER)

Due date of deliverable: (01.10.2006)
Actual submission date: (25.11.2006)

Start date of project: 15.10.2006
Duration: 60 months
Organisation name of lead contractor for this deliverable: KLPD/TISPOL

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)

Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

1

Test edilen cihazların özelliklerinin karşılaştırılması – DRUID çalışması

Relevant operational findings of tested devices				
	Ortalama örnek toplama süresi(dak, saniye)	Ortalama analiz süresi (dak, saniye)	Başarılı test yüzdesi	Umut vaad eden cihaz
01 Mavand RapidSTAT	2.30 / 2.00 (0.30)	11.00 / 7.00	77% / 93%	YES
02 Avitar Drugometer	3.00	3.00	62%	NO
03 Branan Oratect III	4.30 / 3.00	5.30 / 6.00	67% / 89%	YES
04 EnviteC SmartClip	1.45	3.15	97%	NO
05 Innovacon OrALert	3.00	7.00	90%	YES*
06 Securetec Drugwipe 5+	1.00 / 1.30	5.10 / 4.30	98% / 98%	YES
07 Sun OraLine	2.30	8.30	73%	NO
08 Surescreen Drug Test	2.30 / 1.30	7.30 / 4.30	75% / 96%	YES*
09 Ultimed Salivascreen VI	5.00	8.00	57%	NO
10 Varian OraLab 6	3.50	7.20	80%	YES
11 Cozart DDS	2.00	6.00	99%	YES
12 Dräger Drug Test 5000	3.00	11.00	97%	YES
13 Biosensor BIOSENS	0.50	2.15	100%	YES

Table 10.1: Relevant operational findings of tested devices

* Innovacon OrALert and Surescreen Drug Test are similar devices.

DRUID



Project No. TREN-05-FP6TR-S07.51320-518404-DRUID

DRUID

Driving under the Influence of Drugs, Alcohol and Medicines

Integrated Project
1.6. Sustainable Development, Global Change and Ecosystems
1.6.2. Sustainable Surface Transport

6th Framework Programme
D.3.2.2

Analytical evaluation of oral fluid screening devices and preceding selection procedures

Due date of deliverable: (14.02.2010)
Actual submission date: (30.03.2010)

Start date of project: 15.10.2006
Duration: 48 months
Organisation name of lead contractor for this deliverable: DTU
Revision 2.0

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

1. **BIOSENS Dynamic** (Biosensor Applications Sweden AB),
2. **Cozart DDS** (Cozart Bioscience Ltd.),
3. **DrugWipe 5+** (Securetec Detections-Systeme AG),
4. **Dräger DrugTest 5000** (Dräger Safety),
5. **OraLab6** (Varian),
6. **OrAlert** (Innovacon),
7. **Oratect III** (Branan Medical Corporation)
8. **Rapid STAT** (Mavand Solutions GmbH).

Amfetaminler

Metamfetamin

MDMA

Esrar

Kokain

Opiyatlar

Benzodiazepinler

PCP

(IMMORTAL çalışması)

Table 9. List of relevant core substances and their DRUID cut-offs in oral fluid and whole blood.

Substance	Oral fluid / ng/ml	Whole blood / ng/ml
6-Acetylmorphine	5	10
Alprazolam	1	10
Amphetamine	25	20
Benzoyllecgonine	10	50
Clonazepam	1	10
Cocaine	10	10
Codeine	20	10
Diazepam	5	20
Flunitrazepam	1	2
Lorazepam	1	10
MDA	25	20
MDEA	25	20
MDMA	25	20
Methamphetamine	25	20
Morphine	20	10
Nordiazepam	1	20
Oxazepam	5	50
THC	1	1
THCC	-	5

* Substance not measured in OF

Table 10. List of relevant extra substances and their DRUID cut-offs in oral fluid and whole blood.

Substance	Oral fluid / ng/ml	Whole blood / ng/ml	Country
α -OH-alprazolam	1	1	FI
Aminoclonazepam	1	10	BE
Aminoflunitrazepam	1	2	BE and NL
Bromazepam	5	20	FI, BE and NL
Chlordiazepoxide	10	20	FI and NL
Clobazam	5	5	NL
Desalkylflurazepam	2	2	NL
Flurazepam	1	2	NL
Lormetazepam	1	1	NL
Midazolam	2	10	FI and NL
Nitrazepam	2	1	FI and NL
Temazepam	10	20	FI and NL
Triazolam	1	1	NL

Table 31: Overall test performance of the different drug screening devices within the DRUID investigation (WP3)

Substance	Sensitivity	Specificity	Accuracy
Cannabis	11-59%	90-100%	84-98%
Amphetamines	0-87%	90-100%	84-98%
Cocaine	13-50%	99-100%	86-100%
Opiates	69-90%	81-100%	75-99%
Benzodiazepines	48-67%	94-100%	77-100%



Project No. TREN-05-FP6TR-S07.61320-518404-DRUID

DRUID

Driving under the Influence of Drugs, Alcohol and Medicines

Integrated Project 1.6. Sustainable Development, Global Change and Ecosystem 1.6.2: Sustainable Surface Transport

6th Framework Programme
Deliverable 7.3.2

Main DRUID results to be communicated to different target groups

Due date of deliverable: 30.06.2011
Actual submission date: 20.07.2011
Revision date: 10.10.2011

Start date of project: 15.10.2006
Duration: 60 months
Organisation name of lead contractor for this deliverable: UVA
Revision 2.0

Overall results



Sensitivity, Specificity and Accuracy

Substance	Sensitivity [%]	Specificity [%]	Accuracy [%]
Cannabis	11-59 (38)	90-100 (95)	84-98 (73)
Amphetamines	0*-87 (60)	90-100 (97)	84-98 (93)
Cocaine	13-50 (36)	99-100 (100)	86-100 (94)
Opiates	69-90 (79)	81**-100 (97)	75-99 (91)
Benzodiazepines	48-67 (62)	94-100 (99)	77-100 (91)

Figures in parentheses are average scores for all the devices

**one device = 0%, all other amphetamines tests $\geq 54\%$*

***only one device $< 95\%$ for opiates test (all other individual substance tests were $\geq 90\%$ specificity)*



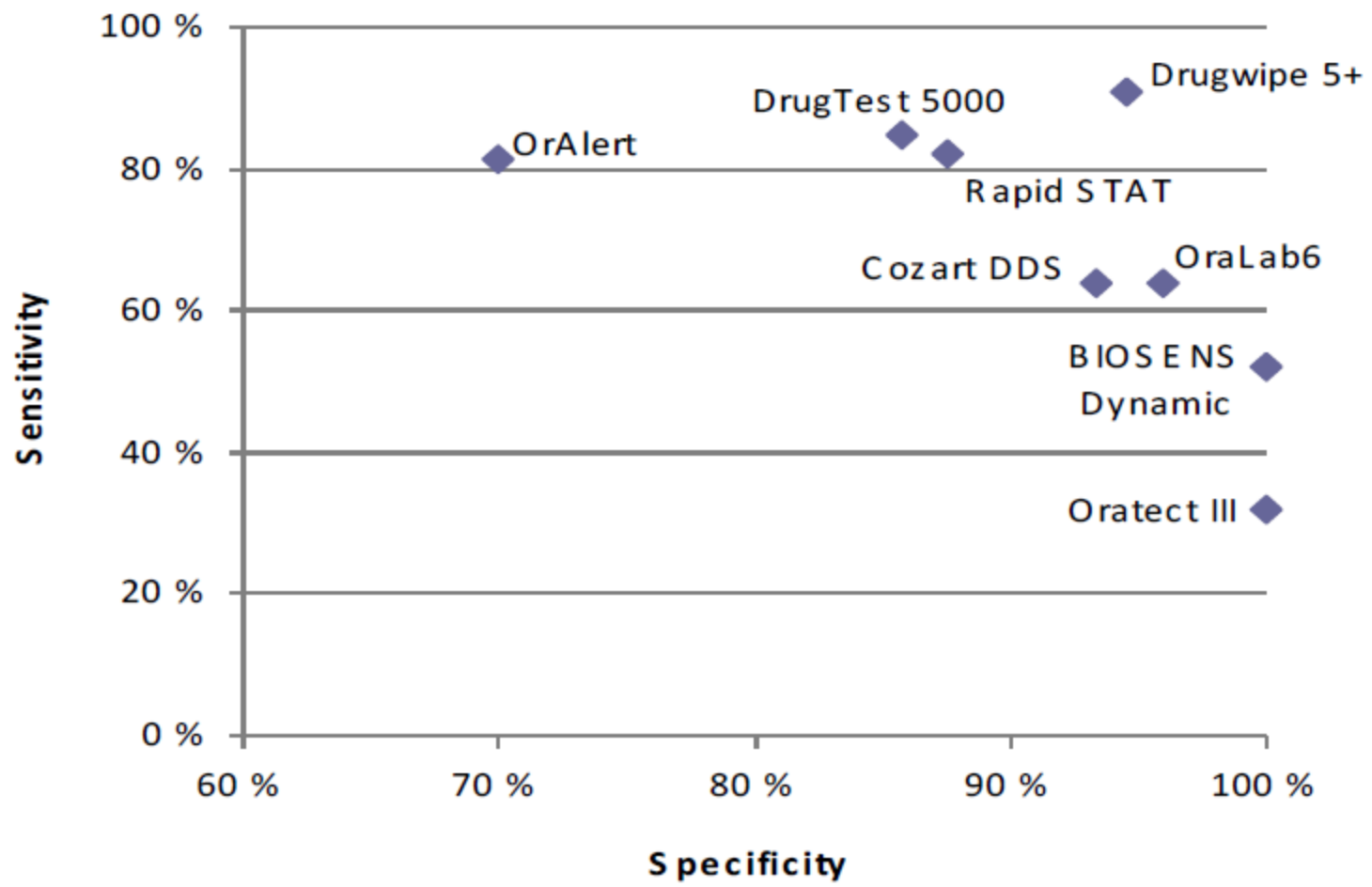


Figure 44. Sensitivity vs. specificity for each device.

USNRS (US National Road Survey)

- 2007 Sonbahar döneminde
- 7000 sürücü - 63 noktada
- 6000 oral sıvı, 3000 kan örneği
- Terapötik ilaçlar ve yasal olmayan maddeler tarandı

2007 US NRS Tarama L,stesisi

- ❖ *Kokain*
- ❖ *Esrar*
- ❖ *Opiatlar*
 - ❖ *Kodein, morfin, hidrokodon, hidromorfon, 6-AM, 6-AC*
- ❖ *Amfetaminler*
 - ❖ *AMP, METH, MDMA, MDA, MDEA, fentermin, psödoefedrin,*
 - ❖ *fenilpropanolamin*
- ❖ *Benzodiazepinler*
 - ❖ *okszepam, nordiazepam,*
 - ❖ *lorazepam, bromazepam,*
 - ❖ *temazepam, diazepam,*
 - ❖ *alprazolam, triazolam,*
 - ❖ *klordiazepoksid, nitrazepam,*
 - ❖ *nordiazepam, klonazepam,*
 - ❖ *flurazepam, flunitrazepam*
- ❖ *Tramadol*
- ❖ *Metadon*
- ❖ *Fluoksetin*
- ❖ *Sertralin*
- ❖ *Fensiklidin*
- ❖ *Barbituratlar*
- ❖ *TCA lar*
 - ❖ *Amitriptilin, nortriptilin, imipramin, desipramin*
- ❖ *Zolpidem*
- ❖ *Karisoprodol*
- ❖ *Metilfenidat*
- ❖ *Oksikodon /Oksimorfone*
- ❖ *Meperidin*
- ❖ *Propoksifen*
- ❖ *Dekstrometorfan*
- ❖ *Ketamin*

US NRS 2007

2.2% → alkol +
(0.08g/100mL)

16.3% → madde/ilaç
+ (alkol dışında)

- #1 Esrar – % 8.6
- #2 Kokain – % 3.9
- #3 Reçetesiz ilaçlar - % 3.9

iLAÇ	Oranı
THC	8.65%
Cocaine	3.92%
Hydrocodone	0.68%
Oxycodone	0.82%
Alprazolam	0.64%
Methamphetamine	0.84%
Sertraline	0.50%
Propoxyphene	0.52%
Tramadol	0.46%
Diazepam	0.38%
Amphetamine	0.45%
Fluoxetine	0.37%
Pentermine	0.26%
Dextromethorphan	0.22%
Methadone	0.19%

US NRS

- Hem kan hem oral sıvı örneği olan 3,276 vakada,
 - 559 vakada en az bir örnekte madde (+)
 - 326 vakada her iki örnekte (+) → % 97.1 korelasyon
 - 129 vakada: AS - / Kan + (yanlış negatif)
 - 104 vakada: AS + / Kan - (yanlış pozitif)
 - 72 vakada: THC AS + / Kan - (43 ü THC-COOH +)

UZUN YOL ARAÇ SÜRÜCÜLERİNDE
MADDE KULLANIMI, MADDEYE ERİŞEBİLİRLİK VE MADDE
TESTLERİNE BAKIŞ AÇISI
Psikolog Yasemin SANAL
İstanbul - 2009

Tablo 2: Çeşitli ülkelerde idrar taramasına alternatif tarama testlerinin kullanım amaçları (16)

Ülke Saç		Tükürük	Ter
Amerika Birleşik Devletleri	- Bazı eyaletlerde, özel sektörde, iş yerinde yapılan taramalarda - Kriminal arařtırmalarda - Tıbbi Tedavi amaçlı	- İş yerinde madde taramalarında - Sağlık Sigortası için yapılan taramalarda	- Şartlı tahliyesi gerçekleřen kişilerin takibinde - Tıbbi tedavilerde - İş yeri madde taramasında
Avustralya	- Madde kullanımı bağlantısı olan adli vakalarda	- Yol kenarı madde tarama testlerinde	- Yol kenarı madde tarama testlerinde
Belçika	- Kısıtlı olarak kriminal arařtırmalarda	- Yol kenarı madde tarama testlerinde	
Finlandiya	- Cinayet arařtırmalarında - Uyuřturucu bağlantısı olan suçlarda	- Yol kenarı madde tarama testlerinde	
Almanya	- Kronik kullanıcılarının takibinde - Madde tedavi kliniklerinde çalışan kişilerin kontrolünde - Sürücü ehliyeti yenilemesinde		
İtalya	- Sürücü ehliyeti yenilemesinde - Velayet ve boşanma davalarında - Kriminal vakalarda - Şartlı tahliye edilen kişilerin takibinde	Kısıtlama bulunmamaktadır	Kısıtlama bulunmamaktadır
Polonya	- Morfin kötüye kullanımı şüphesinde - Eroin alım-satımı ile ilişkili suçlarda - Sürücü ehliyeti yenilemesinde	- Madde etkisi altında araç kullanımı şüphesinde - Arařtırmalarda	
İsveç	- Polis gereken her örneęi alabilir - Kriminal arařtırmalarda - Kısıtlı olarak velayet davalarında - Adli Psikiyatri alanında	- Polis gereken her örneęi alabilir - Yol kenarı madde tarama testlerinde	- Polis gereken her örneęi alabilir

Güvenli Sürüş - Ağız Sıvısı Kullanımı

