Standardized Field Sobriety Test (SFST) Validated at BACS Below 0.10 Percent

Number 196 March 1999

U.S. Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street, S.W., Washington, DC 20590

STANDARDIZED FIELD SOBRIETY TEST (SFST) VALIDATED AT BACS BELOW 0.10 PERCENT

Beginning in 1975, the National Highway Traffic Safety Administration (NHTSA) sponsored research that led to the development of standardized methods for police officers to use when evaluating motorists who are suspected of Driving While Impaired (DWI). In 1981, law enforcement officers from across the United States began using NHTSA's Standardized Field Sobriety Test (SFST) battery to help make arrest decisions at and above the 0.10 percent blood alcohol concentration (BAC).

In recent years, 16 states have lowered their BAC limits below 0.10 percent, thus raising the question of how well the SFST can identify motorists suspected of driving with BACs less than 0.10 percent. Furthermore, the standard for Commercial Driver License holders is set nationally at 0.04 percent. Anacapa Sciences, Inc. of Santa Barbara, California conducted a study to validate the accuracy of the SFST battery to discriminate above or below 0.08 and above and below 0.04 percent blood alcohol concentrations.

The SFST Battery

The SFST battery consists of three tests administered and evaluated in a standardized manner by law enforcement officers at roadside to assist them in making an arrest decision. *Horizontal gaze nystagmus* (HGN) is an involuntary jerking of the eyes that occurs as the eyes move to the side. When a person has consumed alcohol, nystagmus is exaggerated and may occur at lesser angles depending on the degree of impairment. The *Walk and Turn* and *One-Leg Stand* tests require a person to listen to and follow instructions while performing simple physical movements. Since these tests are alcohol sensitive, impaired persons have difficulty with these divided attention tasks. During the tests officers observe and record clues which are indicators of impairment.

SFST Scoring at 0.08 and 0.04 Percent BACs

Seven experienced officers of the San Diego Police Department's alcohol enforcement unit, trained in the administration of the SFST battery, collected SFST data during routine patrols. SFST scoring was adjusted to test its accuracy at the lower BAC levels of 0.08 and 0.04.

In this validation, observing four clues for horizontal gaze nystagmus indicated a BAC at or above 0.08 percent, and two HGN clues indicated a BAC at or above 0.04 percent. The scoring was not modified for the other two SFST tests. During routine patrols, the officers administered the SFSTs and completed a data collection form for each test they administered. The officers' final step in each case was to administer an evidential breath test to get a BAC measurement.

SFSTs Accurate at Lower BAC Levels

The officers administered a total of 298 SFST tests during the study. Only one case was eliminated from the analysis because the motorist refused all forms of BAC testing. Using the SFSTs, the officers were extremely accurate in discriminating between BACs above and below 0.08 percent.

Estimates at the 0.08 level were accurate in 91 percent of the cases, or as high as 94 percent if explanations for some of the false positives are accepted. Officers' estimates of whether a motorist's BAC was above 0.04 but below 0.08 were accurate in 94 percent of the decisions to arrest and in 80 percent of the relevant cases, overall.

The table below shows the decision matrix at 0.08 or above BAC comparing measured BACs to the officers' estimated BAC level from the SFST. The officers' estimates were accurate in 91 percent of the cases overall (that is, 210+59/297). They were 90 percent accurate in "yes" decisions (210/234) and 94 percent accurate in "no" decisions (59/63).

Decision Matrix at 0.08 BAC

Measured BAC	Officer's Estimated BACs < 0.08	> .08	Total
> .08	n= 4	n= 210	n= 214
< 0.08	n= 59	n= 24	n= 83
Total	n= 63	n= 234	n= 297

The next table shows the decision matrix at 0.04 BAC or above. The officers' estimates were accurate in 80 percent of cases overall (51+15/93), 94 percent in "yes" (51/54) and 52 percent in "no" decisions (15/29).

Decision Matrix at 0.04 BAC

Measured BAC	Officer's Estimated BACs < 0.04	> 0.04	Total
> .04 <.08	n= 14	n= 51	n= 65
< 0.04	n= 15	n= 3	n= 18
Total	n= 29	n= 54	n= 83

Officers and prosecutors reported they found the SFST test battery fully acceptable for field use to establish probable cause for DWI arrest. The study documents how the Standardized Field Sobriety Test Battery can assist officers in making arrest decisions at or above 0.08 BAC. The SFST test battery was found to also discriminate at or above 0.04 BAC.

HOW TO ORDER

For a copy of the report, ***Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent*** (34 pages), write to Media and Marketing Division, NHTSA, NTS-21, 400 Seventh Street, S.W., Washington, DC 20590, or send a fax to (202) 493-2062.

http://www.nhtsa.dot.gov/people

U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**
400 Seventh Street, S.W. NTS-31
Washington, DC 20590

Traffic Tech is a publication to disseminate
information about traffic safety programs,
including evaluations, innovative programs,
and new publications. Feel free to copy it as you wish.
If you would like to receive a copy contact:
Linda Congrove, Ph.D., Editor, Evaluation Staff
Traffic Safety Programs
(202) 366-2759, fax (202) 366-7096
safety.research@nhtsa.dot.gov

http://www.nhtsa.dot.gov/people/injury/alcohol/sfstvalidate.pdf/dd1/1/1/