The Autonomy over Tobacco Scale

Introduction: Researchers have sought more reliable instruments to measure the construct of dependence captured by the Fagerström Test for Nicotine Dependence (FTND). We developed a new measure for this purpose. In this study we compared the reliability and concurrent validity of the Autonomy over Tobacco Scale (AUTOS) and the FTND.

Methods: A web-based survey was completed by 422 adult smokers ages 18–78. Participants completed the AUTOS, the FTND and a battery of smoking-related behavioral measures.

Results: The AUTOS and its subscales correlated with all 9 continuous measures of concurrent validity (p<.001) in a manner very similar to the FTND indicating that both instruments measure the same construct. Cronbach's internal reliability was .94 for the AUTOS and .73 for the FTND. Overall, the AUTOS showed stronger correlations with other indicators than did the FTND.

Conclusions: The AUTOS taps the same construct of dependence as the FTND. However, the AUTOS is more reliable. As internal reliability places an upper limit on how well a scale can correlate with other measures, the increased measurement precision of the AUTOS provides greater power to detect study effects, making the AUTOS a more sensitive and powerful research tool. The AUTOS can be used alongside the FTND for adult smokers and can be used in a variety of research settings for which the FTND is not suitable.

Attractive features of the AUTOS

1. It is a theory-based measure.
2. Excellent internal reliability, retest reliability, and concurrent validity.
3. Tested and recommended for use with individuals of all ages.
4. Tested and recommended for use with smoked or oral tobacco.
5. Can be used with daily and non-daily tobacco users.
6. It is not vulnerable to cultural measurement bias caused by differences in the affordability of tobacco, or racial bias caused by differences in nicotine metabolism.
7. Can be used before and after cessation, during active use and abstinence.
8. Can be used in longitudinal studies to track the development of dependence.
9. Can be used in cessation studies to track the persistence or resolution of symptoms.
10. Measures tobacco withdrawal.
11. Measures psychological dependence.
12. Measures cue-induced urges to use tobacco.
13. Can be used in cessation settings to guide anticipatory counseling and relapse prevention.
14. Easily scored.
15. Can be self-administered in under 3 minutes.
16. Currently in use in Dutch, English, French, German and Spanish.

We have placed this copyrighted scale in the public domain for non-commercial use. If you use the AUTOS, we would appreciate it if you could let us know what you learn. We are also keen on establishing collaborations with others in a position to extend the evaluation of the AUTOS to new populations, languages and settings. For more information contact: Joseph R. DiFranza, M.D. difranzj@ummhc.org, or Sanouri Ursprung, Sanouri.Ursprung@umassmed.edu.

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The Autonomy over Tobacco Scale[1]

	This statement describes me…			
When I go too long without a cigarette or a dip I get impatient.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I see other people smoking or using dip I want a cigarette or a dip.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
I rely on smoking or dip to focus my attention.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I smell cigarette smoke or dip I want a cigarette or dip.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
I rely on smoking or dipping to take my mind off being bored.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I go too long without a cigarette or a dip I get strong urges to smoke or dip that are hard to get rid of.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
After eating I want a cigarette or a dip.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
I would go crazy if I couldn't smoke or use dip.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I go too long without a cigarette or a dip I lose my temper more easily.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I feel stressed I want a cigarette or a dip.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
I rely on smoking or dipping to deal with stress.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL
When I go too long without a cigarette or a dip I feel nervous or anxious.	NOT AT ALL	A LITTLE	PRETTY WELL	VERY WELL

Scoring the Autonomy over Tobacco Scale

Responses are scored: Not at all - 0, A little- 1, Pretty well- 2, Very well- 3
To compute the AUTOS total score sum all 12 items.

To compute the **Withdrawal score** sum the following 4 items.

When I go too long without a cigarette or a dip I get impatient.

When I go too long without a cigarette or a dip I get strong urges to smoke or dip that are hard to get rid of.

When I go too long without a cigarette or a dip I lose my temper more easily.

When I go too long without a cigarette or a dip I feel nervous or anxious.

To compute the **Psychological Dependence score** sum the following 4 items.

I rely on smoking or dip to focus my attention.

I rely on smoking or dipping to take my mind off being bored.

I rely on smoking or dipping to deal with stress.

I would go crazy if I couldn't smoke or use dip.

To compute the **Cue-Induced Urges to Use Tobacco score** sum the following 4 items.

When I feel stressed I want a cigarette or a dip.

When I see other people smoking or using dip I want a cigarette or a dip.

When I smell cigarette smoke or dip I want a cigarette or dip.

After eating I want a cigarette or a dip.

1 DiFranza JR, Wellman RJ, Ursprung S, Sabiston C. The Autonomy over Smoking Scale. Psychology of Addictive Behaviors. 2009;23:656-665.