

List of Assessment Tools

<p>The E-cigarette Fagerström Test of Cigarette Dependence (e-FTCD)</p>	<p>The e-cigarette Fagerström Test of Cigarette Dependence (e-FTCD) is adapted from the validated Fagerström Test of Cigarette Dependence (FTCD) by replacing all references to “cigarettes” with “e-cigarettes”, and all references of “smoking” to “vaping”. Scores are calculated as a sum of the response items, with higher scores indicating higher levels of dependence (Piper et al., 2020). A copy of the tool has been provided at the <u>end of the document</u>.</p>
<p>E-cigarette Dependence Scale (EDS)</p>	<p>The E-cigarette Dependence Scale (EDS) is adapted from the Patient-Reported Outcome Measurement Information System (PROMIS) Tobacco Dependence Bank. The 22-, 8- and 4-item scales have been validated and provide an effective measure of e-cigarette nicotine dependence among both adults and youth (Morean et al., 2018, 2019). Higher scores indicate greater dependence. A copy of the tool has been provided at the <u>end of the document</u>.</p>
<p>The Penn State Electronic Cigarette Dependence Index (PS-ECDI)</p>	<p>Adapted from the Penn State Nicotine Dependence Index, the Penn State Electronic Cigarette Dependence Index (PS-ECDI) is a validated 10-item scale used to assess e-cigarette dependence (Center for Research on Tobacco and Health, 2021). The scale includes questions to assess various constructs of dependence, such as time to first e-cigarette, times per day, cravings, irritability, and waking at night to vape. A score of 13 or more indicates high dependence (Vogel et al., 2020). A copy of the tool has been provided at the <u>end of the document</u>.</p>
<p>Hooked on Nicotine Checklist (HONC)</p>	<p>A ten-item screening scale also used to identify the point at which an individual has lost full autonomy over their nicotine use. Used to determine the onset and strength of nicotine dependence. The scale assesses lifetime occurrence of cravings, withdrawal, and difficulties with cessation. Can be used with youth (12+) (McKelvy et al., 2018; Boykan et al., 2019). A copy of the tool has been provided at the <u>end of the document</u>.</p>

References

Boykan, R., Goniewicz, M.L., & Messina, C.R. (2019). Evidence of nicotine dependence in adolescents who use Juul and similar pod devices. *International Journal of Environmental Research and Public Health*, 16(12), 2135.

Center for Research on Tobacco and Health. (2021). Penn State Nicotine Dependence Index. Hershey, PA: Penn State College of Medicine. Retrieved from: <https://research.med.psu.edu/smoking/dependence-index/#reference1>

McKelvey, K., Baiocchi, M., & Halpern-Felsher, B. (2018). Adolescents' and young adults' use and perceptions of pod-based electronic cigarettes. *JAMA Network Open*, 1(6), e183535-e183535

Morean, M.E., Krishnan-Sarin, S., & O'Malley, S.S. (2018). Assessing nicotine dependence in adolescent e-cigarette users: the 4-item Patient-Reported Outcomes Measurement Information System (PROMIS) nicotine dependence item bank for electronic cigarettes. *Drug and Alcohol Dependence*, 188, 60-63.

Morean, M.E., Krishnan-Sarin, S., Sussman, S., Foulds, J., Fishbein, H., Grana, R., & O'Malley, S.S. (2019). Psychometric Evaluation of the E-cigarette Dependence Scale. *Nicotine and Tobacco Research*, 21(11), 1556-1564.

Piper, M.E., Baker, T.B., Benowitz, N.L., Smith, S.S., & Jorenby, D.E. (2020). E-cigarette dependence measures in dual users: reliability and relations with dependence criteria and e-cigarette cessation. *Nicotine and Tobacco Research*, 22(5), 756-763.

Vogel, E. A., Prochaska, J. J., & Rubinstein, M. L. (2020). Measuring e-cigarette addiction among adolescents. *Tobacco Control*, 29(3), 258-262.

The E-cigarette Fagerström Test of Cigarette Dependence

Tool taken from: Piper, M.E., Baker, T.B., Benowitz, N.L., Smith, S.S., & Jorenby, D.E. (2020). E-cigarette dependence measures in dual users: reliability and relations with dependence criteria and e-cigarette cessation. *Nicotine and Tobacco Research*, 22(5), 756-763.

Scoring taken from: Johnson, J. M., Muilenburg, J. L., Rathbun, S. L., Yu, X., Naeher, L. P., & Wang, J. S. (2018). Elevated Nicotine Dependence Scores among Electronic Cigarette Users at an Electronic Cigarette Convention. *Journal of community health*, 43(1), 164-174.

<https://doi-org.myaccess.library.utoronto.ca/10.1007/s10900-017-0399-3>

1	How many times per day do you usually use your electronic cigarette? (Assume that one "time" consists of around 15 puffs or lasts around 10 minutes.)	<input type="radio"/> 0-4 times/day (0) <input type="radio"/> 5-9 (0) <input type="radio"/> 10-14 (1) <input type="radio"/> 15-19 (1) <input type="radio"/> 20-29 (2) <input type="radio"/> 30+ (3)
2	Do you find it difficult to refrain from vaping in places where it is forbidden (e.g. in church, at the library, in the cinema)?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
3	When would you hate most to give up e-cigarette use?	<input type="radio"/> In the morning (1) <input type="radio"/> During or after meals (0) <input type="radio"/> During or after stressful situations (0) <input type="radio"/> None of the above (0)
4	On days that you can use your electronic cigarette freely, how soon after you wake up do you first use your electronic cigarette?	<input type="radio"/> 0-5 mins (3) <input type="radio"/> 6-15 (2) <input type="radio"/> 16-30 (2) <input type="radio"/> 31-60 (1) <input type="radio"/> 61-120 (0) <input type="radio"/> 121+ (0)
5	Do you use your e-cigarette more frequently during the first two hours of the day than during the rest of the day?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
6	Do you use your e-cigarette when you are so ill that you are in bed most of the day?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)

Scoring eFTND: Sum the items. Total score: 0-2 = low dependence, 3-4 = low to moderate dependence, 5-7 = moderate dependence, 8+ = high dependence

E-cigarette Dependence Scale

Taken from: Morean, M.E., Krishnan-Sarin, S., Sussman, S., Foulds, J., Fishbein, H., Grana, R., & O'Malley, S.S. (2019). Psychometric Evaluation of the E-cigarette Dependence Scale. *Nicotine and Tobacco Research*, 21(11), 1556-1564.

4-item EDS = Items 1 – 4		8-item EDS = Items 1 – 8			22-item EDS = Items 1 – 22	
Item	Instructions. Please respond to each question marking one box per row.	Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Almost Always (4)
1	I find myself reaching for my e-cigarette without thinking about it.					
2	I drop everything to go out and buy e-cigarettes or e-juice.					
3	I vape more before going into a situation where vaping is not allowed.					
4	When I haven't been able to vape for a few hours, the craving gets intolerable.					
5	When I'm really craving an e-cigarette, it feels like I'm in the grip of some unknown force that I cannot control.					
6	I crave vaping at certain times of day.					
7	My urges to vape keep getting stronger if I don't vape.					
8	After not vaping for a while, I need to vape in order to avoid feeling any discomfort.					
9	My desire to vape seems overpowering.					
10	Cravings for an e-cigarette					

	make it difficult for me to quit.					
11	It is hard to ignore urges to vape.					
12	When I go without vaping for a few hours, I experience cravings.					
13	I frequently crave e-cigarettes/vaping.					
14	The idea of not vaping causes me stress.					
15	When I run out of e-cigarettes or e-juice, I find it almost unbearable.					
16	I get a real gnawing hunger for an e-cigarette when I haven't vaped in a while.					
17	I vape even when I am so ill that I am in bed most of the day.					
18	When I go too long without vaping I feel impatient.					
19	It is hard for me to go without vaping for a whole day.					
20	When I go too long without vaping, I get strong urges that are hard to get rid of.					
21	Vaping is a large part of my daily life.					
22	I am tempted to vape when I realize I haven't vaped for a while.					

Scoring : Sum the items. Greater scores signify greater dependence.

The Penn State Electronic Cigarette Dependence Index

Taken from: Foulds, J., Veldheer, S., Yingst, J., Hrabovksy, S., Wilson, S.J., et. al, (2015).
Development of a questionnaire for assessing dependence on electronic cigarettes among
a large sample of ex-smoking e-cigarette users. *Nicotine & Tobacco Research*, 17(2), 186-192.

1	How many times per day do you usually use your electronic cigarette? (Assume that one "time" consists of around 15 puffs or lasts around 10 minutes.)	<input type="radio"/> 0-4 times/day (0) <input type="radio"/> 5-9 (1) <input type="radio"/> 10-14 (2) <input type="radio"/> 15-19 (3) <input type="radio"/> 20-29 (4) <input type="radio"/> 30+ (5)
2	On days that you can use your electronic cigarette freely, how soon after you wake up do you first use your electronic cigarette?	<input type="radio"/> 0-5 mins (5) <input type="radio"/> 6-15 (4) <input type="radio"/> 16-30 (3) <input type="radio"/> 31-60 (2) <input type="radio"/> 61-120 (1) <input type="radio"/> 121+ (0)
3	Do you sometimes awaken at night to use your electronic cigarette?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
4	If yes, how many nights per week do you typically awaken to use your electronic cigarette?	<input type="radio"/> 0-1 nights (0) <input type="radio"/> 2-3 nights (1) <input type="radio"/> 4+ nights (2)
5	Do you use an electronic cigarette now because it is really hard to quit?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
6	Do you ever have strong cravings to use an electronic cigarette?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
7	Over the past week, how strong have the urges to use an electronic cigarette been?	<input type="radio"/> None/Slight (0) <input type="radio"/> Moderate/Strong (1) <input type="radio"/> Extremely Strong (2)
8	Is it hard to keep from using an electronic cigarette in places where you are not supposed to?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
9	Did you feel more irritable because you couldn't use an electronic cigarette?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)
10	Did you feel nervous, restless, or anxious because you couldn't use an electronic cigarette?	<input type="radio"/> Yes (1) <input type="radio"/> No (0)

PS-ECDI Scoring: Sum the items. Total scoring: 0-3= not dependent, 4-8 low dependence, 9-12 medium dependence, 13+ = high dependence.

The Hooked on Nicotine Checklist

Taken from:

American Academy of Pediatrics. (2019). Assessing nicotine dependence in adolescents [PowerPoint slides]. Retrieved from E-cigarette Curriculum:

https://downloads.aap.org/AAP/PDF/2D_Assessing_Nicotine_Dependence_in_Adolescents.pdf

Carroll, D.M, Wagener, T.L, Thompson, D.M, Stephens, L.D, Peck, J.D, Campbell, J.E, et al. (2017). Electronic nicotine delivery system use behaviour and loss of autonomy among American Indians: results from an observational study. *BMJ Open*, 7(12): e018469.

		Yes	No
1	Have you ever tried to stop vaping, but couldn't?		
2	Do you vape now because it is really hard to quit?		
3	Have you ever felt like you were addicted to vaping?		
4	Do you ever have strong cravings to vape?		
5	Have you ever felt like you really needed to vape?		
6	Is it hard to keep from vaping in places where you are not supposed to, like school?		

When you tried to stop vaping (or, when you haven't vaped for a while...)

7	Did you find it hard to concentrate because you couldn't vape?		
8	Did you feel more irritable because you couldn't vape?		
9	Did you feel a strong need or urge to vape?		
10	Did you feel nervous, restless or anxious because you couldn't vape?		

HONC Scoring: Sum the number of 'yes' responses. Any score greater than zero indicates that the client has lost some degree of autonomy over their vaping.