

ASSESSMENTS

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Tobacco Use Disorder

Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5)

- **Diagnostic Criteria (F17.200)**
- A problematic pattern of tobacco use leading to clinically significant impairment or distress, as manifested by at least two of the following occurring within a 12-month period:
 1. Tobacco is often taken in larger amounts or over a longer period than was intended
 2. There is a persistent desire or unsuccessful efforts to cut down or control tobacco use
 3. A great deal of time is spent in activities necessary to obtain or use tobacco
 4. Craving, or a strong desire or urge to use tobacco
 5. Recurrent tobacco use resulting in a failure to fulfill major role obligations at work, school, or home
 6. Continued tobacco use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of tobacco
 7. Important social, occupational, or recreational activities are given up or reduced because of tobacco use
 8. Recurrent tobacco use in situations in which it is physically hazardous
 9. Tobacco use is continued despite knowledge of having persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by tobacco
 10. Tolerance as defined by either of the following:
 - A need for markedly increased amounts of tobacco to achieve the desired effect
 - A markedly diminished effect with continued use of the same amount of tobacco
 11. Withdrawal, as manifested by either of the following:
 - The characteristic withdrawal syndrome for tobacco (See Criteria A and B for tobacco withdrawal)
 - Tobacco is taken to relieve or avoid withdrawal symptoms

Can specify if:

- **In early remission:** no criteria for 3-12 months (with the exception of craving)
- **In sustained remission:** no criteria for 12 months or longer (with the exception of craving)
- **On maintenance therapy:** The individual is taking a long term maintenance medication, such as nicotine replacement therapy, and meets no criteria for tobacco use (except tolerance or withdrawal)

Tobacco Withdrawal

• **Diagnostic Criteria (F17.201)**

- A. Daily use of tobacco for at least several weeks
- B. Abrupt cessation of tobacco use, or reduction in the amount of tobacco used, followed within 24 hours by four (or more) of the following signs or symptoms
 - Irritability, frustration, or anger
 - Anxiety
 - Difficulty concentrating
 - Increased appetite
 - Restlessness
 - Depressed mood
 - Insomnia
- C. The signs or symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The signs or symptoms are not attributed to another medical condition and are not better explained by another mental disorder, including intoxication or withdrawal from another substance

Why Use Standardized Tests?

1. To help you identify major challenges to quitting and maintaining abstinence
 - Your patient may not even be aware of these challenges
2. Quantify major challenges for treatment and for referral–
 - Severe dependence = shift in medication strategy
 - Moderate depression = Bupropion, Severe depression = referral.
 - Risky alcohol use = Encouragement, Moderate to severe alcohol use = referral
3. Objective profile of your patients for communication with other providers and funders.
4. Some standardized tests are billable

Standardized Tests

- High Validity: its results match well with a "gold standard"
- High Reliability: performs consistently well across different people
- Wide agreement on interpretation of results



Common Causes of Slip/Relapse & Challenges

1. Nicotine Withdrawal Symptoms
2. Feelings of Anxiety
3. Feelings of Depression
4. Alcohol Use/Drug Use
5. Stress
6. Automaticity
7. Lack of Social Support
8. Environmental Factors (other people using tobacco)

Other Challenges Include

1. Motivation/Confidence
2. Anxiety Sensitivity
3. Distress Tolerance
4. Automaticity
5. ADHD
6. PTSD
7. Financial Stress
8. Social Support
9. Environmental Factors (other people using tobacco)

Core Measures

- Fagerstrom Test for Nicotine Dependence (FTND), 6 items
- Hooked On Nicotine Checklist for teens (HONC), 10 items
- Withdrawal: Mood and Physical Symptoms Scale (MPSS-2), 2 items
- Alcohol Use Disorders Identification Test (AUDIT-C), 3 items
- Drug Abuse Screening Test DAST-10, 10 items
- Depression: Patient Health Questionnaire PHQ-9 (Depression), 9 items
- Generalized Anxiety Disorders (GAD-7), 7 items

Fagerstrom Test for Nicotine Dependence (FTND)

- How soon after you wake up do you smoke your first cigarette?
3 = Within 5 minutes
2 = 6-30 minutes
1 = 31-60 minutes
0 = after 60 minutes
- Do you find it difficult to refrain from smoking in places where it is forbidden, e.g. at the mosque (church), at the bus?
1 = Yes
0 = No
- Which cigarette would hate most to give up?
1 = The first one in the morning
0 = All others
- How many cigarettes/day do you smoke?
0 = 10 or less
1 = 11-20
2 = 21-30
3 = 31 or more
- Do you smoke more frequently during the first hours after waking than the rest of the day?
1 = Yes
0 = No
- Do you smoke when you are so ill that you are in bed most of the day?
1 = Yes
0 = No

1-2 = Low dependence
3-4 = Low-Moderate dependence
5-7 = Moderate dependence
8 or above = High dependence

FTND-ST Fagestrom for Smokeless Tobacco

Fagerstrom Nicotine Dependence Scale- Smokeless Tobacco (FTND-ST)

Questions	Answers	Points
How soon after you wake up do you smoke your first cigarette?	Within 5 min	3
	6 - 30 min	2
	31 - 60 min	1
	After 60 min	0
How often do you intentionally smoke tobacco pipes?	Always	2
	Sometimes	1
	Never	0
Which pipe would you hate to give up most?	The first pipe in the morning	1
	All pipes	0
How many pipes/pouches per week do you use?	More than 3	2
	2-3	1
	1	0
Do you smoke more frequently during the first hours after awakening than during the rest of the day?	Yes	1
	No	0
Do you smoke if you are so ill that you are in bed most of the day?	Yes	1
	No	0
Total		

Scoring Instructions: Add up responses to all items. A score of 5 or more indicates a significant dependence, while a score of 4 or less shows a low to moderate dependence.

Heatherton, Todd F. et al. 1991. The Fagerstrom Test for Nicotine Dependence: A Revision of the Fagerstrom Tolerance Questionnaire. British Journal of Addiction 86:1119-1127.

HONC: Hooked On Nicotine Checklist

- Target Population: Adolescents
- A positive response signals loss of autonomy over tobacco use
- More positive responses indicate a higher degree of dependence

HONC - Hooked On Nicotine Checklist	
1	Have you ever tried to quit but couldn't?
2	Do you smoke now because it is really hard to quit?
3	Have you ever felt like you were addicted to tobacco?
4	Do you ever have strong cravings to smoke?
5	Have you ever felt like you really needed a cigarette?
6	Is it hard to keep from smoking in places where you are not supposed to, like school?
<i>In answering the last four questions, when you tried to stop smoking, or when you have not used tobacco for a while ...</i>	
7	Did you find it hard to concentrate?
8	Did you feel more irritable?
9	Did you feel a strong need or urge to smoke?
10	Did you feel nervous, restless or anxious because you couldn't smoke?

MPSS Mood and Physical Symptoms Scale (Urge)

- How much of the time have you felt the urge to smoke in the past 24 hours?

Not at all	A little of the time	Some of the time	A lot of the time	Almost all the time	All the time
0	1	2	3	4	5

- How strong have the urges been?

No urges	Slight	Moderate	Strong	Very strong	Extremely strong
0	1	2	3	4	5

0-3 Low withdrawal
4-7 Moderate withdrawal
8-10 High withdrawal

Assessment tools can help gather information:

- How much tobacco is used daily?
- How soon after waking up is tobacco used?
- Nicotine withdrawal symptoms
- Information on any previous quit attempts – IF attempted, how long? Any tobacco cessation medication used?

AUDIT-C Alcohol Use Disorders Identification Test

- How often do you have a drink of alcohol?
 - Never
 - monthly or less
 - 2-4 times a month
 - 2-3 times a week
 - 4 or more times a week
- How many standard drinks containing alcohol do you have on a typical day?
 - 1 or 2
 - 3 or 4
 - 5 or 6
 - 7 to 9
 - 10 or more
- How often do you have six or more drinks on one occasion?
 - Never
 - less than monthly
 - Monthly
 - Weekly
 - Daily or almost daily

a = 0 points,
b = 1 point,
c = 2 points,
d = 3 points,
e = 4 points

Men, a score of 4 or more is considered positive
Women, a score of 3 or more is considered positive.

DAST Drug Abuse Screening Test

In the past 12 months...			
1.	Have you used drugs other than those required for medical reasons?	Yes	No
2.	Do you abuse more than one drug at a time?	Yes	No
3.	Are you unable to stop abusing drugs when you want to?	Yes	No
4.	Have you ever had blackouts or flashbacks as a result of drug use?	Yes	No
5.	Do you ever feel bad or guilty about your drug use?	Yes	No
6.	Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
7.	Have you neglected your family because of your use of drugs?	Yes	No
8.	Have you engaged in illegal activities in order to obtain drugs?	Yes	No
9.	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
10.	Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?	Yes	No

Score	Degree of Problems Related to Drug Abuse
0	No problems reported
1-2	Low level
3-5	Moderate level
6-8	Substantial level
9-10	Severe level

PHQ-9 Patient Health Questionnaire (Depression)

PHQ-2 can be done as a screener

Over the last 2 weeks, how often have you been bothered by any of the following problems?		Not at all	Several days	More than half the days	Nearly every day	
1	Little interest or pleasure in doing things	0	1	2	3	
2	Feeling down, depressed, or hopeless	0	1	2	3	
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3	
4	Feeling tired or having little energy	0	1	2	3	
5	Poor appetite or overeating	0	1	2	3	5-9 Mild Depression
6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3	10-14 Moderate Depression
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3	15-19 Moderately Severe Depression
8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3	>20 Severe Depression
9	Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3	

GAD-7 Generalized Anxiety Disorder

Over the last 2 weeks, how often have you been bothered by any of the following problems?		Not at all	Several days	More than half the days	Nearly every day	
1	Feeling nervous, anxious or on edge	0	1	2	3	5-9 Mild anxiety
2	Not being able to stop or control worrying	0	1	2	3	10-14 Moderate anxiety
3	Worrying too much about different things	0	1	2	3	15-21 Severe anxiety
4	Trouble relaxing	0	1	2	3	
5	Being so restless that it is hard to sit still	0	1	2	3	
6	Becoming easily annoyed or irritable	0	1	2	3	
7	Feeling afraid as if something awful might happen	0	1	2	3	

When used as a screening tool, further evaluation is recommended when the score is 10 or greater.

PSS-4 Perceived Stress Scale-4

1. In the last month, how often have you felt that you were unable to control the important things in your life?

- 0=never
1=almost never
2=sometimes
3=fairly often
4=very often

2. In the last month, how often have you felt confident about your ability to handle your personal problems?

- 4=never
3=almost never
2=sometimes
1=fairly often
0=very often

3. In the last month, how often have you felt that things were going your way?

- 4=never
3=almost never
2=sometimes
1=fairly often
0=very often

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

- 0=never
1=almost never
2=sometimes
3=fairly often
4=very often

0-4 = Low stress

5-8 = Low-Moderate stress

9-11 = Moderate stress

12-16 = High stress

CO Monitor Test

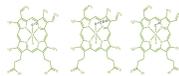
- > Carbon Monoxide (CO) is a byproduct of combustion
- > Biochemically provides information related to smoking
- > Immediate results
- > Noninvasive test
- > Helps determine level of dependence on nicotine
- > Provides information on amount of CO in blood and lungs
Typically levels highest immediately after smoking & at the end of the day
- > Can be a motivational tool for patients
- > Measures both the CO in the breath and the blood



www.covita.net

Carbon Monoxide

- Carbon Monoxide CO is a byproduct of combustion
 - Cigarette, cigar, and cigarillo smoking involves tobacco combustion
 - E-cig use does not involve tobacco combustion
- CO is NOT related to nicotine – it is not elevated in people using e-cigarettes, snuff, chewing tobacco.
- CO $\frac{1}{2}$ life is 3-4 hours - CO of 48 would drop to 24 in 3 -4 hours
- Carboxyhemoglobin (%COHb) – level of CO in the blood (CO attaches to red blood cells easier than oxygen)
- 27 ppm is approximately 5%COHb



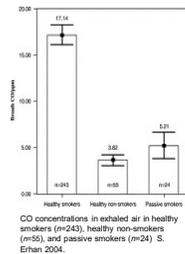
<http://schoolbag.info/chemistry/mcat>

CO and Carboxyhemoglobin

- Most CO Monitors report CO levels and Carboxyhemoglobin (%COHb)
- Many also report fetal (%fCOHb)
- COHb at low levels is not directly toxic to adults (other respiratory problems associated with COPD have a greater impact than high CO)
- CO however directly impacts fetal development. (Bahri Ermis 2004)
- For adults, it is a biomarker of the many other toxins in smoke.
- CO is NOT related to nicotine – it is not elevated in people using e-cigarettes, snuff, chewing tobacco.
- CO ½ life is 3-4 hours (12 hours: 48, 24, 12, 6)

What do CO Levels Mean?

- People not smoking have CO levels of 0-3 ppm
- People smoking lightly have CO levels of 7-19 ppm (under 1 ppd)
- People smoking heavily have CO levels of 20-50 ppm



Assessing Abstinence:

CO under 7 = Abstinent
 CO of 7 or over = Smoking

Patients with COPD, obstructive sleep apnea or asthma often have higher CO (use 10 ppm)

Slide 23

JB6 Same thing here. Data from 2004.

Jordan Brown, 1/7/2020

CO increases with cigs/day

CO monitors do not predict the exact level of nicotine dependence

(A)

S. Erhan et al. 2004

CO as a Motivational Tool

- Patients repeatedly report satisfaction in "beating the machine." (Brunette 2013).
- CO testing should work best when combined with counseling and other forms of support (Dallery 2013)
- Motivates pregnant women to quit (Sloan 2016).

CO Testing is Billable

- CO testing is a billable outpatient face-to-face service under the name *Expired Gas Collection*.
- The CPT code for this service is 94250, or expired gas collection, quantitative, single procedure.
- Reimbursement rates in 2016 range from around \$20/visit for Medicaid to over \$60/visit for some private insurance companies

Slide 25

JB5 2004 data in the figure. Could use updating.

Jordan Brown, 1/7/2020

Summary of CO Monitor

- Carbon Monoxide CO is a byproduct of combustion
 - Cigarette, cigar, and cigarillo smoking involves tobacco combustion
 - E-cig use does not involve tobacco combustion
 - CO is NOT related to nicotine – it is not elevated in people using e-cigarettes, snuff, chewing tobacco.
- Most CO Monitors report CO levels and Carboxyhemoglobin (%COHb)
- Results:
 - CO under 7 = Abstinent
 - CO of 7 or over = Smoking

How to do a CO test

1. Put in a fresh mouthpiece (Use gloves)
2. Turn on the monitor – it will zero automatically
3. Talk to patient – explain procedure and what CO tell us.
4. Explain that they will hold breath for 15 sec, then breath out all of their breath into monitor.
5. Ask patient to take deep breath and hold for 15 seconds.
6. When he/she takes a breath, click the "start" button for 15 second count down
7. Count out loud for 15 seconds.
8. At about 3 seconds, it will beep 3 times, hand it to patient + ask them to breath out all of their air.
9. Read result – it will be the highest number the monitor reaches



Cleaning, Calibrating, Maintenance

- Breathing tubes are removed using germicidal disposable cloth and are thrown away after use
- Monitor is cleaned after each use with anti-bacterial wipes
- D piece in monitor replaced each month
- CO calibration (follow instructions) every 6 months
- Monitors should be registered with facilities

Key Points

1. Standardized tests can help identify potential barriers to quitting/
maintaining abstinence
2. Provides objective profile of your patients for communication with other
providers and help indicate if additional referrals are needed
3. Track progress over time
4. Another tool to utilize with patients
5. Some standardized tests are billable
