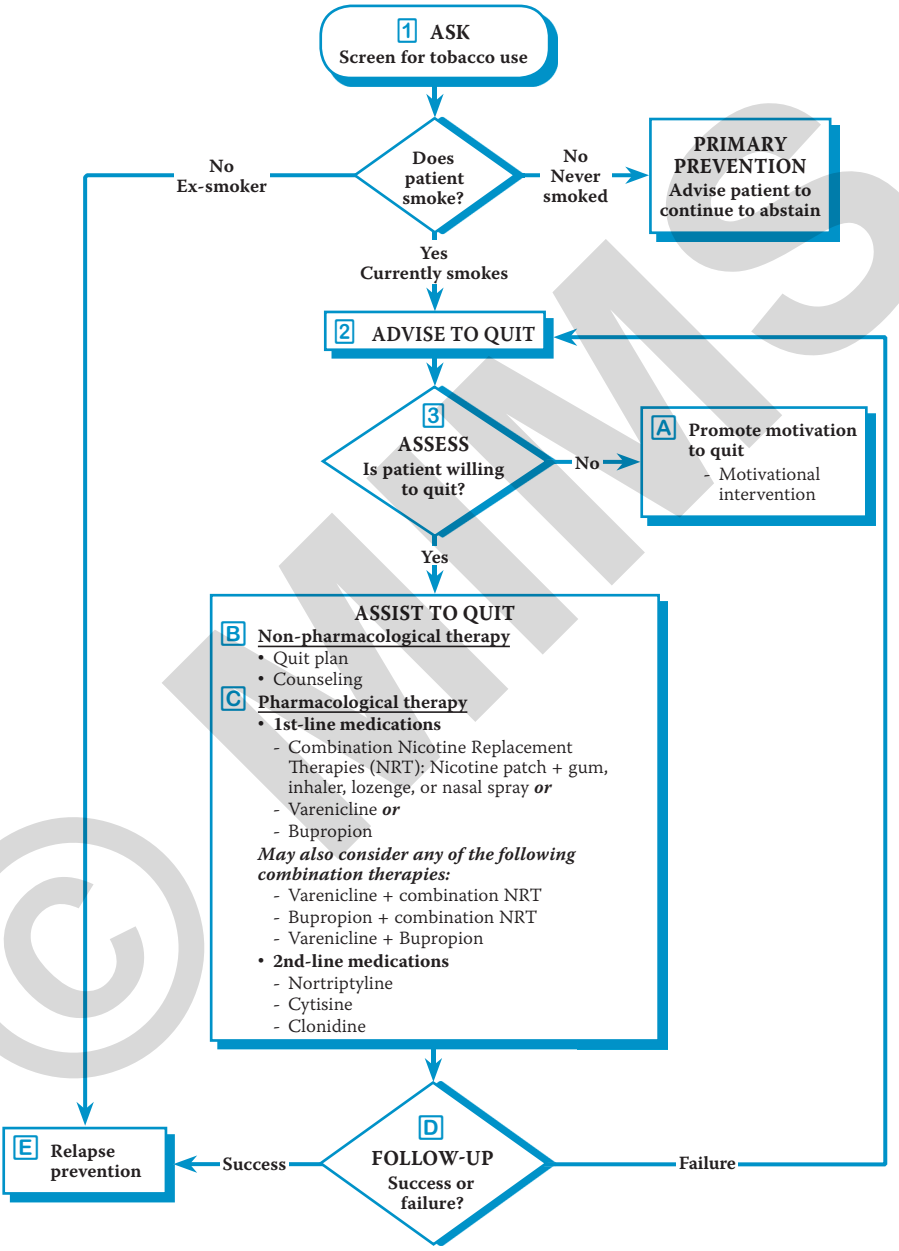
Smoking Cessation (1 of 9)



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1 ASK

Screen for Tobacco Use

- All patients should be asked if they use tobacco & should have their tobacco status documented on a regular basis
  - Check on changes in patient's smoking status, quit attempts & interventions applied
  - Patient w/ nicotine dependence is characterized by smoking within 30 minutes of waking, waking at night to smoke, smoking despite an illness, consuming >10 cigarettes/day, had withdrawal symptoms in previous attempts of quitting smoking, & had to smoke to decrease withdrawal symptoms
  - May use questionnaires (eg CAGE questionnaire, Fagerstrom test, four Cs test) to assess level of tobacco dependence
- Evidence shows that this significantly increases clinician intervention
- Patient in maintenance stage, where he has stopped smoking for at least 6 months, should be assisted in preventing relapse
  - May still be vulnerable to relapse up to 1 year

2 ADVISE

- Smokers should be strongly urged to quit at every physician encounter
  - Studies have shown that unplanned efforts to quit is as successful as planned attempts, stressing the risks of smoking as well as the benefits of quitting whenever opportunity arises
- Advice should be clear, personalized, supportive & non-judgmental
- Increasing the number of attempts to quit plays an important role in improving abstinence rates

3 ASSESS

- Assess patient's willingness to stop & ability to adapt to smoking cessation interventions prior to conduction of therapies
- Determine the willingness of smoker to make a quit attempt
  - Patient in the precontemplation stage, where he is not willing to quit or has not thought about quitting, should be provided w/ motivation to quit
  - Patient in the contemplation stage, where he has thought about stopping but has not made a decision to quit, should be provided w/ motivation to quit as well
  - Patient in preparation stage, where he has thought of quitting within the next 30 days & has already made changes such as cutting back
- Patient is in action stage when he already stopped smoking within the last 6 months, & is in the maintenance stage if patient has adapted to smoking cessation therapies for >6 months
- For patients willing to quit within the next 30 days, set a quit date & create an individualized quit plan, continue smoking cessation counseling & discuss risk of relapse
- For patients not willing to quit within the next 30 days, address patient's concerns, consider decreasing amount of smoking & aim to set a quit date
  - Assess level of motivation

A PROMOTE MOTIVATION TO QUIT

Reasons Patient May be Unwilling to Quit

- Lack of information regarding the benefits of quitting & the harmful effects of tobacco (ie cancer, stroke, cardiovascular diseases, & chronic pulmonary diseases)
- Previous failed attempts may have demoralized patient
  - Severe withdrawal symptoms during previous quit attempts
- Presence of other tobacco users in home or workplace
- Lack of required resources
- Fear/concerns regarding quitting (eg fear of weight loss, fear of losing benefits or function of smoking such as overcoming feelings of boredom, stress, anxiety)

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A PROMOTE MOTIVATION TO QUIT (CONT'D)

Motivational Intervention

- An approach that enhances patients' motivation to quit smoking
- Composed of 5 components:
  - Relevance - Patient to indicate why quitting is personally relevant
  - Risks - Ask patient to identify potential negative consequences of smoking
  - Rewards - Patient should realize & understand the potential benefits of quitting
  - Roadblocks - Ask patient to identify barriers to quitting & note actions to address the barriers
  - Repetition - Patient's current motivation to quit should be asked every patient visit
- Motivational intervention will be more successful if the clinician is empathetic, promotes patient autonomy, supports the patient's self-efficacy & avoids arguments
- Patients who have failed in previous attempts to quit should be informed that most people make repeated failed attempts before they have succeeded

B NON-PHARMACOLOGICAL THERAPY

Quit Plan

- Help the patient w/ a quit plan
  - Set a quit date, which is ideally within 2 weeks
- In lower-resource settings, quit lines may also be used as an adjunctive therapy
- Family, friends & co-workers should be informed about plans of quitting, & understanding & support should be requested
- Anticipate challenges in the quit plan especially during the 1st few weeks, such as nicotine withdrawal symptoms, weight gain
- Remove tobacco products from environment
- Prior to quitting, avoid smoking in places where much time is spent

Counseling

- A minimum of short counseling is recommended, though several sessions are most effective w/ intensive behavior therapy
- Provide practical problem-solving or skills training that may include total abstinence from smoking, identifying factors that helped in the past quitting experience, anticipating problems that may be encountered, limiting or abstaining from alcohol, & encouraging other household members to also quit smoking
- Combined counseling & medication is more effective than when either intervention is used alone
  - Both counseling & medication should be offered provided there are no contraindications or evidence of ineffectiveness in particular patient populations
- Person-to-person treatment (eg individual, group or telephone support) delivered ≥4 sessions are proven effective in increasing abstinence rates

Other Therapies

- There is not enough evidence to support the use of alternative non-pharmacological treatments (eg acupuncture, exercise, hypnotherapy, nutritional supplements) for smoking cessation
- Electronic cigarettes (e-cigarettes)
  - A device similar to a real cigarette that produces a vapor which does not contain tar & other chemicals found in normal cigarettes, & makes use of a replaceable cartridge containing flavoring, additives & sometimes nicotine
  - Though recent evidence suggests it may be of help in quitting smoking, data regarding its efficacy & safety are insufficient; the US Preventive Services Task Force (USPSTF), the American Heart Association (AHA), the American Association for Cancer Research (AACR) & the American Society of Clinical Oncology (ASCO) suggest that clinicians focus more on proven current pharmacotherapeutic agents & interventions

C PHARMACOLOGICAL THERAPY

- Pharmacological therapy is most effective when used together with behavioral therapy
- Choice of therapy should be based on patient's past experience, preference, medical conditions, & potential side effects

First-Line Medications

Nicotine Replacement Therapies (NRT)

- Involves the use of a product that contains nicotine to replace the nicotine previously provided by smoking
  - Helps patients unwilling or unable to stop smoking to lessen their cigarette consumption

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C PHARMACOLOGICAL THERAPY (CONT'D)

Nicotine Replacement Therapies (NRT) (Cont'd)
- Should be given to patients for 8-12 weeks & gradually reduced w/ maximum duration of 12 months
  - Generally started when patient stops smoking to prevent adverse effects resulting from higher than usual nicotine concentrations
- Safe & can be used in all groups of smokers including adolescents; use w/ caution in patients w/ unstable cardiovascular disease
  - It is well tolerated & toxicity is rare & short lived; blood nicotine levels from NRT are less than those from cigarette smoking
- Behavioral support may be added to increase overall success rates but it is not required for NRT to be effective
- Available in different forms (such as gum, inhaler, lozenge, nasal spray & patch)
  - There is no difference in efficacy among the various forms of NRT
  - All NRT forms can increase abstinence rate by 50-70%
- Long-term use of some forms of NRT may help some people to remain abstinent
- Considerations in providing NRT
  - Dose should be based on cigarette consumption prior to smoking cessation
  - Types of NRT to be used will be based on patient's preference, side effects, & previous attempts
  - Replacement or adaptation doses available
  - NRT may be safely used in patients w/ stable cardiovascular disease
  - Contraindicated in patients who have recently suffered a cardiovascular event or have poorly controlled disease
  - Instead of longer-acting patches, oral NRTs are recommended

Varenicline
- A partial neuronal α4 β2 nicotinic receptor agonist that is developed specifically for smoking cessation that targets the nicotinic acetylcholine receptor
- Helps in alleviating symptoms of craving & withdrawal, & prevents inhaled nicotine from activating the α4 β2 receptor to cause the pleasure & reward response
- Should be given to patients for at least 12 weeks & continued until 12 months
- Patient should be advised to stop smoking within 1-2 weeks after starting the treatment
- May be used in patients w/ stable cardiovascular disease, monitor for neuropsychiatric side effects
  - Avoid in patients w/ seizure risk, ie brain metastases
- Found to be superior to NRT & Bupropion in achieving continuous abstinence but efficacy diminishes after 6 months, thus may have limited role in relapse prevention

Bupropion HCl
- An oral non-nicotine preparation that has been shown to be effective in treating nicotine withdrawal in cigarette smokers wishing to quit through inhibition of dopamine-norepinephrine reuptake
- Should be given to patients 1-2 weeks prior to & up to 3-6 months after quit date
- Patient should be advised to stop smoking in the second week of treatment
- May be an option for patients who are not pregnant, w/ no current or history of seizures or closed-angle glaucoma, & not on monoamine oxidase inhibitors (MAOI) or Tamoxifen
- Safe to use in patients w/ stable cardiovascular disease, monitor for neuropsychiatric side effects
- Has lower effectivity than Varenicline as shown by clinical trials & is likely to be the 1st-line therapeutic option in cases where Varenicline is inappropriate or for smokers w/ depression or schizophrenia
- Bupropion may have a limited role in relapse prevention

Combination of Pharmacotherapies
- Indicated for patients w/:
  - Failed attempt w/ monotherapy
  - Nicotine withdrawal
  - Breakthrough cravings
  - High level of dependence
  - Multiple failed attempts
- Two forms of NRT
  - Patch plus another form of NRT (eg patch + spray, patch + lozenge)
  - Combination may be used safely & effectively than a single form of NRT
- Varenicline plus NRT
  - May improve smoking abstinence rates at 6 months
- Bupropion plus NRT
  - Combination of Bupropion & NRT has not shown significant increase in quit rates compared to NRT alone
- Bupropion plus Varenicline
  - A randomized trial showed higher rates of abstinence w/ Bupropion & Varenicline combination therapy compared w/ Varenicline monotherapy & combination was well tolerated

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C PHARMACOLOGICAL THERAPY (CONT'D)

Second-Line Medications

- Eg Nortriptyline, Cytisine, Clonidine
- Should be considered only if 1st-line medications have failed or are contraindicated
  - Evaluate for correct medication usage if initial therapy failed
- Patients should be assessed for specific contraindications, precautions & side effects
  - May try lowering dose or switching to an alternative agent if w/ intolerable side effects

Other Medications

- There were no significant effects found on the following antidepressants: Fluoxetine, Paroxetine, Sertraline, Moclobemide, or Venlafaxine
- Antinicotine vaccines are currently undergoing clinical studies, with varying results

D FOLLOW-UP

- The principle for follow-up is to monitor the status of the program that was given to the patient
- Patient/physician follow-up should be arranged soon after the quit date (within the first 2 weeks after initiating medical therapy), at 12-week intervals, then at therapy completion
- Points for assessment during follow-up visits:
  - Success of smoking cessation
    - Patient should be congratulated if successful & strongly encouraged to remain abstinent
  - Motivational level
  - Presence of withdrawal symptoms should be discussed & pointers on what to do should be given
    - Symptoms of Nicotine withdrawal usually peak within 1-2 weeks & then diminish
  - Discuss problems encountered & challenges that may occur in the future
  - Assess pharmacotherapy use & problems
  - If required, consider specialist referral for more intensive treatment
- If patient smoked, review circumstances & encourage recommitment to complete abstinence
  - Lapse should be seen as a learning experience

E RELAPSE PREVENTION

- Smoking relapse is common & usually occurs within the first 3 months of quitting & can occur months to years after the quit date
  - Risks include stress, frequent cravings, alcohol consumption, drug use or abuse (eg stimulants, narcotics), being w/ family or friends who smoke, <1 year since stopping smoking, or currently on medical therapy for smoking cessation
- May restart primary therapy w/ combination NRT or Varenicline
  - Use the pharmacotherapeutic agent that was previously effective for the patient as repeated attempts at quitting using the same therapy are needed to obtain long-term cessation
  - May consider switching to other 1st-line agents before trying 2nd-line agents
- Physicians need to continually be involved in relapse prevention interventions especially if risk for relapse is high
  - Continue counseling & behavioral therapy, consider medical therapy to maintain abstinence, & review the benefits of remaining abstinent from smoking
- In patients who have recently quit smoking, the physician should:
  - Reinforce the patient's decision to quit
  - Review the benefits of quitting
  - Help the patient w/ any residual problems arising from quitting

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Dosage Guidelines

ANTIDEPRESSANTS

Drug	Dosage	Remarks
Non-selective Monoamine Reuptake Inhibitor		
Nortriptyline	25 mg/day PO Titrate slowly to 75-100 mg/day PO x 8-12 wk	**Adverse Reactions** • GI effects (dry mouth, constipation, nausea); CV effects (postural hypotension, tachycardia); Psychiatric effects (behavioral disturbances, confusion, sexual dysfunction); Other effects (sedation, blurred vision, rashes) **Special Instructions** • Contraindicated in patient w/ recent myocardial infarction (MI), mania or severe hepatic disease; w/ concomitant intake or w/in 14 days of monoamine oxidase inhibitors (MAOI) use • Use w/ caution in patients w/ diabetes mellitus (DM), cardiac disease, hepatic impairment, epilepsy, thyroid disease
Other Antidepressant		
Bupropion HCl	**Sustained Release:** **Initial dose:** 150 mg PO 24 hrly x 3 days Then increase to 150 mg PO 12 hrly for at least 7 wk (observe 8-hr interval between doses) **Max dose:** 300 mg/day	• Start treatment 1-2 wk before target quit date **Adverse Reactions** • GI effects (nausea, constipation, dry mouth, altered taste); CNS effects (agitation, insomnia, tremor, anxiety, dizziness); CV effects (chest pain, tachycardia, hypertension) • Rarely: Stevens-Johnson syndrome, vasodilatation, syncope, seizure may occur **Special Instructions** • Contraindicated in patients w/ history of seizures or eating disorders; w/ concomitant intake or w/in 14 days of MAOI use • Use w/ caution in patients w/ head trauma, hepatic or renal impairment

OTHER ANTIHYPERTENSIVE

Drug	Dosage	Remarks
Centrally-Acting Antiadrenergic Agent		
Clonidine	0.10 mg PO 12 hrly Can be titrated to 0.20 mg PO 12 hrly ***or*** 0.10 mg/wk transdermal Titrate up to 0.20 mg transdermal Discontinue use gradually x 2-4 days **Duration:** 3-10 wk	• Start on or up to 3 days before quit day **Adverse Reactions** • CNS effects (headache, dizziness); Psychiatric effects (confusion, delusion, hallucination, depression); CV effects [atrioventricular (AV) block, cardiac arrhythmia, hypotension]; Other effects (accommodation disorder, erectile dysfunction) **Special Instructions** • Contraindicated in patients w/ sick sinus syndrome • Use w/ caution in patients w/ cardiac arrhythmia, diseases affecting AV conduction system of the heart, renal failure

All dosage recommendations are for non-pregnant & non-breastfeeding women, & non-elderly adults w/ normal renal & hepatic function unless otherwise stated.
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Dosage Guidelines

DRUGS USED IN SUBSTANCE DEPENDENCE			
Drug	**Available Strength**	**Dosage**	**Remarks[1]**
Nicotine gum	2 mg/gum, 4 mg/gum	8-12 gums/day x 3 mth before gradual reduction **≤ 20 cigarettes/day:** 2 mg gum **Max dose:** 25 gums/day **>20 cigarettes/day:** 4 mg gum **Max dose:** 15 gums/day **Max duration:** 12 mth	**Adverse Reactions** • GI effects (bitter taste, sore throat, dyspepsia, jaw ache); CNS effects (headache, dizziness); Other effect (hiccups) **Special Instructions** • Gum should be chewed slowly until the taste becomes strong then placed between the cheek & gum to facilitate nicotine absorption through the oral mucosa • Gum should be chewed slowly & intermittently for 30 min when urge to smoke occurs
Nicotine inhaler	10 mg/cartridge	**Usual dose:** 6-12 cartridges/day x 12 wk then reduce gradually over 6-8 wk **Max duration:** 6 mth	**Adverse Reactions** • GI effects (increased salivation, mouth & throat irritation, indigestion, nausea); Other effects (hiccups, cough, headache, insomnia) **Special Instructions** • Use w/ caution in patients w/ bronchospastic disease due to potential airway irritation • Use inhaler similar to a cigarette, taking 4 puffs/min - Use for 20 min every time there is an urge to smoke - Inhaler will last approximately 4 sessions; one cartridge can replace 4 cigarettes
Nicotine lozenge	1 mg/loz 2 mg/loz 4 mg/loz	1 loz 1-2 hrly **Usual dose:** 8-12 loz/day Reduce dose gradually after 3 mth **Max dose:** 1 mg loz: 20 loz/day 2-4 mg loz: 15 loz/day **Max duration:** 6 mth	**Adverse Reactions** • Same as Nicotine inhaler **Special Instructions** • Do not chew or swallow whole loz • Avoid food or drink 15 min prior to, during or after loz • Should be sucked slowly until the flavor becomes strong • Rest loz between cheek & gum • When flavor fades, repeat process until lozenge dissolves completely (about 30 min)
Nicotine nasal spray	500 mcg/spray	1 spray into each nostril as needed **Max dose:** 2 sprays/hr or 64 sprays/day **Max duration:** 3 mth	**Adverse Reactions** • Same as Nicotine inhaler **Special Instructions** • Administer intranasally via metered dose spray pump - Tilt head back slightly - Do not sniff, swallow or inhale through nose while administering as this causes irritation • Not recommended for patients w/ chronic nasal disorders such as allergic rhinitis, nasal polyps, or sinusitis

[1] Before starting NRT therapies, patient should stop smoking completely. All NRT therapies should be used w/ caution among particular CV patient groups: 3 mth post MI, arrhythmias & angina, high BP, occlusive peripheral arterial disease & use w/ caution in patients w/ active GI ulcer, chronic throat disease, asthma, DM, renal or hepatic failure, hyperthyroidism or pheochromocytoma.

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Dosage Guidelines

DRUGS USED IN SUBSTANCE DEPENDENCE (CONT'D)

Drug	Available Strength	Dosage	Remarks
Nicotine patch	15 mg/16 hr (30 cm^2), 10 mg/16 hr (20 cm^2), 5 mg/16 hr (10 cm^2)	**Usual dose:** **≤20 cigarettes/day:** 10 mg patch x 2-3 wk then shift to 5 mg patch x 2-3 wk **>20 cigarettes/day:** 15 mg x 12 wk then gradual dose reduction	**Adverse Reactions** • Mild local skin reactions (erythema, itching); Other effects (stomach discomfort, headache) **Special Instructions**[1] • Apply 1 patch to clean, dry, hairless area of intact skin on hip, trunk or upper arm upon awakening - Remove patch after 16 hr at bedtime - Rotate application site
	25 mg/16 hr (22.5 cm^2), 15 mg/16 hr (13.5 cm^2), 10 mg/16 hr (9 cm^2)	**<15 cigarettes/day:** 15 mg patch x 8 wk & 10 mg patch x 4 wk **>15 cigarettes/day:** 25 mg patch x 8 wk, 15 mg patch x 2 wk & 10 mg patch x 2 wk	
	21 mg/24 hr (30 cm^2), 14 mg/24 hr (20 cm^2), 7 mg/24 hr (10 cm^2)	**Usual dose:** **≤10 cigarettes/day:** 14 mg patch x 6 wk & 7 mg patch x 2 wk **>10 cigarettes/day:** 21 mg patch x 6 wk, 14 mg patch x 2 wk & 7 mg patch x 2 wk **Max duration:** 12 wk	**Adverse Reactions** • Mild local skin reactions (erythema, itching); Other effects (stomach discomfort, headache) **Special Instructions**[1] • Apply 1 patch to clean, dry, hairless area of intact skin on hip, trunk or upper arm upon awakening (24 hr) - Remove & replace patch at the same time each day - Rotate application site
	52.5 mg/24 hr (30 cm^2), 35 mg/24 hr (20 cm^2), 17.5 mg/24 hr (10 cm^2)	**<20 cigarettes/day:** Start w/ 35 mg patch/day **>20 cigarettes/day:** Start w/ 52.5 mg patch/day Use 52.5 mg patch, 35 mg patch & 17.5 mg patch to permit gradual withdrawal of nicotine replacement using treatment periods of 3-4 wk **Max duration:** 12 wk	
Varenicline	1 mg/tablet 500 mcg/tablet	1 mg PO 12 hrly following a 1 wk titration, as: **Days 1-3:** 0.5 mg PO 24 hrly **Days 4-7:** 0.5 mg PO 12 hrly **Day 8-end of treatment:** 1 mg PO 12 hrly **Duration:** 3-6 mth	• Start treatment 1-2 wk before target quit date **Adverse Reactions** • CNS effects (headache, dizziness, fatigue); Psychiatric effects (abnormal dreams, insomnia, depression, anxiety); GI effects (increased appetite, nausea, vomiting) • May be associated w/ infrequent CV adverse events in patients w/ stable CV disease; absolute risk of CV event is small compared to its efficacy **Special Instructions** • Use w/ caution in patients w/ renal dysfunction, those undergoing dialysis & patients w/ serious psychiatric illness

[1] Before starting NRT therapies, patient should stop smoking completely. All NRT therapies should be used w/ caution among particular CV patient groups: 3 mth post MI, arrhythmias & angina, high BP, occlusive peripheral arterial disease & use w/ caution in patients w/ active GI ulcer, chronic throat disease, asthma, DM, renal or hepatic failure, hyperthyroidism or pheochromocytoma.

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Dosage Guidelines

Smoking Aids	Bupropion	Nicotine Gum	Nicotine Inhaler	Nicotine Lozenge	Nicotine Nasal Spray	Nicotine Patch	Varenicline
Pharmacokinetics							
Time to Peak	2-3 hr	25-30 min	15-30 min	20-30 min	4-15 min	2-10 hr (slow onset)	3-4 hr
Dosing & Administration							
Dosing frequency	Single/ fixed	Multiple/ flexible	Multiple/ flexible	Multiple/ flexible	Multiple/ flexible	Single/ fixed	Single/fixed
Overnight dosing (prevent morning craving)	✖	✖	✖	✖	✖	✔ (24 hr patch)	✖
Dosing mimic smoking	✖	✖	✔ (hand-mouth coordination)	✖	✖	✖	✖
Instant craving relief	✖	✖	✖	✖	✔ Fastest delivery (reduces craving w/in min)	✖	✖
Special Precautions							
Cardiac effects[1] (Caution in patients w/ MI, arrhythmias, angina or uncontrolled hypertension)	✔	✔	✔	✔	✔	✔	✔ (Infrequent)
Epileptic effects (Caution in patients w/ seizure history & taking antiepileptic drugs)	✔	✖	✖	✖	✖	✖	✔
Eating disorder (Caution in patients w/ eating disorder)	✔	✖	✖	✖	✖	✖	✖
Neuropsychiatric events (caution in patients w/ major depressive disorder & psychiatric disorder for possible worsening of depression, suicidality or unusual change in behavior)	✔	✖	✖	✖	✖	✖	✔

[1]Smoking is an independent & major risk factor for cardiovascular disease
✔= present ✖ = absent

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