

SMOKING REDUCTION/CESSATION - MEDICATION DOSING Fact Sheet

The dose of nicotine replacement should be made on the basis of the usual number of cigarettes smoked and **titrated to effect**. Table 1 below shows general dosing recommendations based on the number of cigarettes typically smoked. However, clinical judgment for individual patients should always be used.

It should be noted that anyone receiving >21 mg nicotine patch, or patch with gum prn, is being **prescribed NRT “off-label”**. This is becoming the practice norm for most patients who smoke more than 30 cig/day, as the 21 mg patch does not adequately manage nicotine withdrawal for these patients (2, 3).

Health Canada now has approved NRT gum for a “reduce to quit” approach to smoking cessation. The aim is to reduce number of cig/day, and replace some cigarettes with NRT gum. In fact, the risk of harm from cigarette smoking in conjunction with NRT use is minimal/non-existent - patients tend to smoke/use NRT until they feel comfortable (i.e. therapeutic dose), and will stop smoking if they begin to experience symptoms of nicotine toxicity. Therefore, **concern that a hospitalized patient might smoke against medical advice while using NRT should not be a deterrent from prescribing NRT** (4, 5).

TABLE 1: GENERAL PATCH/GUM DOSING RECOMMENDATIONS

| Cigarettes per day (cpd) | NRT Patch* | NRT Patch (Reducing Dose) | NRT Gum* |
|---|-------------------------------|--|--|
| If patient smokes <10 cpd OR If patient weighs <45 kg | 7 mg | Nicotine Patch 7 mg daily x 6 weeks | If using as adjunct to patch: 2mg one piece q1-2h prn (max: 15 pieces/day) |
| If patient smokes 10 – 20 cpd | 14 mg | Nicotine Patch 14 mg daily x 6 weeks; then Nicotine Patch 7 mg daily x 4 weeks | If using as monotherapy: 2mg one piece q1-2h prn (max: 20 pieces/day) |
| If patient smokes 21-30 cpd | 21 mg | Nicotine Patch 21 mg daily x 6 weeks; then Nicotine Patch 14 mg daily x 2 weeks; then Nicotine Patch 7 mg daily x 2 weeks | If using as adjunct to patch: 2mg one piece q1-2h prn (max: 15 pieces/day) |
| If patient smokes 31-40 cpd | 28 mg (21 mg + 7 mg patch) | Nicotine Patch 28 mg (21 mg + 7 mg) daily x 6 weeks; then Nicotine Patch 21 mg daily x 4 weeks; then Nicotine Patch 14 mg daily x 2 weeks; then Nicotine Patch 7 mg daily x 2 weeks | If using as monotherapy: 4mg one piece q1-2h prn (max: 20 pieces/day) |
| If patient smokes >40 cpd | 42 mg (21 mg patch x2) | Nicotine Patch 42 mg (21 mg + 21 mg) daily x 6 weeks; then Nicotine Patch 35 mg (21 mg + 14 mg) daily x 2 weeks; then Nicotine Patch 28 mg (21 mg + 7 mg) daily x 2 weeks; then Nicotine Patch 21 mg daily x 2 weeks; then Nicotine Patch 14 mg daily x 2 weeks; then Nicotine Patch 7 mg daily x 2 weeks | |

*NOTE: Dosing is based on using patch in combination with gum. The patch provides long-acting nicotine to manage nicotine withdrawal, and the gum is used as an adjunct to address withdrawal symptoms not managed by the patch. If patient requests gum only after understanding rationale for patch, order as per patient preference.

The above dosing pertains to adults. Generally NRT use is avoided with adolescents, and clinical judgment needs to be used with individual adolescent patients.

All forms of NRT placed in the mouth will be affected by pH in mouth – acidic pH (i.e. juice, caffeinated beverages, pop) interferes with NRT absorption, so patient needs to understand this in order to get best use out of NRT.

NRT Gum – remember to “chew, chew, park” gum (between lower teeth and cheek).

NRT Lozenge - should be allowed to melt in the mouth, rather than chewed to ensure appropriate release of NRT.

TABLE 2: NRT LOZENGE DOSING

| Patient | Dose | Time |
|---|--------------|---|
| If patient smokes first cigarette more than 30 minutes after waking | 2 mg lozenge | Weeks 1 – 6 : one lozenge q 1-2h (Min. 9 / Max. 20 lozenges/day) |
| If patient smokes first cigarette within 30 minutes of waking | 4 mg lozenge | Weeks 7 – 9 : one lozenge q 2-4 h Weeks 10 – 12 : one lozenge q 4-8h |

NRT Mist - Absorbed by the oral mucosa. Median time to maximum blood concentration is 10-12 minutes, but starts within 60 seconds. Upon first use, prime the spray bottle by spraying it into the air until a fine mist appears. Point spray bottle into mouth and press down on spray bottle once, avoiding lips. A second spray should be given a few minutes after the first if cravings remain. Avoid spraying down the throat by not inhaling when spraying. Avoid swallowing for a few seconds after spraying. One or two sprays every 30-60 minutes as needed when cravings arise. Maximum dosing is 4 sprays per hour or 64 sprays per day.

NRT Inhaler - Local irritation in the mouth and throat, cough, and rhinitis. Side effects decline with continued use. Frequent, continuous puffing of the inhaler for 20 min should be undertaken. Delivery of nicotine declines significantly at temperatures below 4°C. In cold weather, the inhaler and cartridges should be kept in an inside pocket or other warm area. A dose from the nicotine inhaler consists of a puff or inhalation. Each cartridge delivers 4 mg of nicotine over a total of 80 inhalations. Recommended dosage is 6-16 cartridges per day, for up to 6 months. Taper the dosage during the final 3 months of treatment.

Bupropion (Zyban) – assumed mechanism: blockade of neuronal re-uptake of dopamine and norepinephrine and blockade of nicotinic acetylcholinergic receptors. If insomnia is marked, take the PM dose earlier in the afternoon, but at least 8 hours after the first daily dose (16). Begin bupropion SR treatment 1-2 weeks before stopping cigarette use. Starting dose is 150 mg every morning for three days, which is increased to 150 mg twice daily for 7-12 weeks. Long term therapy is required in some individuals for up to 6 months (16). Bupropion SR is contraindicated in the following individuals:

- history of seizure disorder
- history of eating disorder
- those taking another form of bupropion
- those who have used an MAO inhibitor in the past 14 days
- those who have undergone abrupt discontinuation of ethanol or sedatives
- hypersensitivity to Bupropion SR in the past

Reports of increased rates of depressed mood, agitation, changes in behaviour, suicidal thoughts and behaviour while using Bupropion SR exist. Clinicians should elicit a psychiatric history prior to using this medication and monitor any changes in mood and behaviour during use (51).

Varenicline (Champix) - partial nicotine receptor agonist and antagonist effects (16). For those with gastrointestinal upset, consider taking medication after eating or with a large glass of water. For those with insomnia, consider taking medication earlier in the day. Begin therapy one week before quit date at 0.5 mg once daily for three days, followed by 0.5 mg twice daily for 4 days, followed by 1 mg twice daily for 3 months. May use for up to six months. For those who experience side effects, consider reduced dosage (0.5 mg twice daily). Reports of increased rates of depressed mood, agitation, changes in behaviour, suicidal thoughts and behaviour exist with use of varenicline. Clinicians should elicit a psychiatric history prior to using this medication and monitor any changes in mood and behaviour during use (16, 52). From the information available to date, it is not possible to determine whether varenicline increases the risk of heart or stroke events in people who have cardiovascular disease (52, 53).