

# Weight gain after smoking cessation: practical advice for patients

COLIN MENDELSON, MB BS(Hons)

*Weight gain after quitting smoking is very difficult to prevent and can undermine many quit attempts. However, ex-smokers gain only 2 to 4 kg on average, and the health risks of this weight gain are far outweighed by the substantial health benefits of quitting. Weight gain is mostly due to the removal of the dietary and metabolic effects of nicotine. Quitters should be given simple dietary and exercise advice to minimise weight gain, but should be encouraged to focus primarily on quitting smoking. Once nonsmoking has become firmly established, strategies to lose weight can be introduced.*

■ Concern about gaining weight is one of the most common barriers to quitting smoking, especially for female smokers. Many female smokers report using cigarettes as a method of appetite and weight control, and weight gain



Dr Mendelsohn is a general practitioner in private practice, Smokescreen National Workshop Trainer and Visiting Fellow, School of Community Medicine, University of New South Wales, Sydney, NSW.

is a cause of relapse for many smokers who attempt to quit. Perhaps even worse, many young women actually commence smoking to help control weight.

In reality, the average amount of weight gained is small and its impact on health is far overshadowed by the considerable health benefits of quitting. Nevertheless, the issue of weight gain after quitting is important to many smokers and should be addressed by doctors who are counselling smokers to quit.

This article examines the amount of weight gained after quitting, why it occurs and the health risks of that weight gain compared with those of continuing to smoke. A management approach for doctors for controlling postcessation weight gain is presented, as well as practical advice for smokers. The role of anorectic drugs and nicotine replacement therapy to avoid weight gain is discussed.

## Who gains weight and how much?

The average weight gain after quitting smoking is only 2 to 4 kg<sup>1-4</sup> and occurs mainly in the first few weeks. The patient's weight plateaus after several months and is maintained over time. Major weight gain (greater than 13 kg) occurs in only about 10% of long term quitters.<sup>2</sup> However, not all quitters gain weight. Only 75 to 80% of smokers gain weight after cessation and 20 to 25% lose weight or stay the same.<sup>2,4</sup>

Female smokers tend to gain more weight than male smokers after quitting. In one large study, women gained 3.8 kg and men gained 2.8 kg on average over a median five year period.<sup>2</sup> Other groups of smokers with a higher risk of weight gain after quitting include heavier smokers, younger patients (under 55 years) and those with a lower body weight or a leaner build (those who can best afford to gain weight).<sup>2,3</sup>

Interestingly, smokers weigh an average of 3.4 kg less than nonsmokers.<sup>3</sup> The effect of smoking cessation is to raise the body weight to what it would have been if the patient had not smoked.

## Mechanisms of weight gain

Weight gain after quitting is mainly due to the removal of the dietary and metabolic effects of nicotine.<sup>5</sup> There is a transient increase in hunger (especially for foods that are sweet tasting and high in fat) and eating during the first few weeks after quitting. Eating

MODERN MEDICINE PATIENT HANDOUT

## How to control your weight after quitting smoking

### The facts

- Not everyone gains weight after quitting. One in four quitters lose weight or stay the same.
- The average weight gain after quitting is only 2 to 4 kg – less than most people think.
- As a smoker, you are artificially underweight. When you quit, your body returns to the weight it would have been if you had never smoked.
- The health benefits of stopping smoking far outweigh the effects of a small weight gain.
- If you do gain some weight, accept it for the moment. Make stopping smoking your main priority for now and resolve to lose the weight later.

### How to reduce weight gain

You will reduce weight gain by following these simple steps:

#### Weigh yourself weekly

Check your weight at the same time of the day and in the same clothes.

#### Watch your diet

Develop a healthy low-fat eating plan you can stick with using these suggestions:

##### Eat less fat

- Use low-fat cooking methods, such as microwaving, grilling, baking, steaming or boiling, and use nonstick frying pans.
- Trim the visible fat from meat before cooking and remove the skin from chicken. Choose lean cuts of meat and eat more fish, chicken and legumes (e.g. kidney beans and chick peas).
- Choose low-fat dairy foods – e.g. low-fat milk and yoghurt, and cottage or ricotta cheese.
- Let soups and casseroles cool and remove the fat off the top before eating.
- Avoid fried and deep-fried foods.
- Eat less take-away foods (e.g. hamburgers, pies and pizza).
- Spread margarine or butter very thinly on sandwiches, or preferably use none at all.
- Try to reduce mayonnaise, salad dressings, sour cream, sauces and gravies made with fat.

- Eat more fruits, vegetables, breads, cereal, rice and pasta.
- Drink lots of water or low-kilojoule drinks.

#### Beware of nibbling

- Many smokers develop cravings for sweet foods after quitting. Avoid soft drinks, cakes, biscuits, chocolate, pastries and lollies. Instead, keep low-kilojoule foods on hand (e.g. carrot or celery sticks, fresh fruit or low-kilojoule jellies), or carry sugarless chewing gum or low-kilojoule sweets.
- Learn some new way to cope with snacking triggers such as boredom and stress. For example, try 'deep breathing' or some activity that keeps your hands busy, such as a hobby or crossword puzzles.

#### Avoid high risk situations

- Identify situations in which you are most tempted to overeat and avoid these situations, especially in the first few weeks. Keeping a food diary can help in pinpointing trouble spots and planning coping strategies.
- Leave the table quickly after eating and clean your teeth or do the washing up. Stay away from the kitchen as much as possible.
- Ask to sit in the nonsmoking section of restaurants.
- Try to avoid alcohol, especially in social situations, as it is fattening and can weaken your decision to avoid overeating or smoking. Be especially careful at parties and when drinking with friends.

#### Exercise

- Exercise helps to burn off extra kilojoules and reduces tension and stress.
- Choose an activity that is enjoyable and convenient for you. Walking, swimming, cycling and jogging are ideal. Where possible exercise with family or friends.
- Exercise at least three times per week and gradually increase to at least 30 minutes each time.

#### Medications

- Certain medications and the use of nicotine gum or patches can help prevent weight gain, especially in the first few months after quitting. Discuss these options with your doctor.

patterns return to normal, however, over the next few months in most cases. Similarly, a short term reduction in kilojoule intake occurs if smoking is resumed. Many studies have shown

that, even though they weigh less, smokers eat the same amount as non-smokers. Eating patterns only change when the smoking habit changes.

One model that explains these obser-

vations is set point theory.<sup>5</sup> The set point is a predetermined level of weight which the body attempts to maintain by changing eating patterns and energy expenditure. The set point is reduced

*The average weight gain is small and its effects are far overshadowed by the health benefits of quitting smoking.*

by nicotine and rises again after the cessation of smoking. Therefore, eating temporarily increases after quitting until the new normal set point body weight is reached. Set point theory helps to explain why preventing weight gain after quitting is so difficult.

The small but repeated doses of nicotine in each cigarette also cause an increase in metabolic rate and the rate of kilojoule burning in smokers. As a result of this, most smokers will gain weight after quitting even if they do not eat more.

Other factors that may lead to weight gain in some quitters include the use of food as an oral or tactile substitute for cigarettes, the improved taste of food after quitting and eating for the relief of tension. Activity levels do not appear to play any part in the difference in weight between smokers and nonsmokers.

### **Health risks of weight gain after quitting**

An important issue is the extent to which the weight gain after smoking cessation may lead to elevations in blood pressure, cholesterol, glucose intolerance or other factors which would offset the benefits of smoking cessation. Studies have shown that quitters experience relatively small changes in these risk factors.<sup>1</sup>

The substantial health benefits of smoking cessation are well documented and the amount of weight gained after quitting would have to be considerable to negate these benefits. However, as mentioned above, the weight gain is usually very small. The number of individuals likely to gain enough weight to offset the benefits of smoking cessation is negligible. In conclusion, the clear reduction in health risk that results from quitting overshadows any health risk that may result from cessation-induced weight gain.<sup>1</sup>

### **A management approach**

Attempts to control weight gain after stopping smoking have had little success. Even comprehensive weight control programmes combined with quitting have generally not been successful in reducing weight gain.<sup>6,7</sup> Furthermore, these programmes do not usually increase quit rates and in some cases have reduced the chance of successful quitting.<sup>6</sup> Perhaps the mental and emotional demands of implementing a weight management programme interfere with the concentration needed to maintain abstinence from smoking.

Therefore, it is best to work on one problem at a time, making quitting the number one priority in the short term. Advise patients to try to avoid weight gain but to accept a small increase if it occurs. Deal with the weight gain later once nonsmoking has become firmly established – perhaps after 6 to 12 months.

Recommend simple weight control strategies only, consisting of simple dietary and exercise advice to minimise weight gain in the first few months after quitting. The use of medications or nicotine replacement therapy may have a role in selected cases. Explain that a weight gain of 2 to 4 kg is the average – this is much less than many people think. Advise patients that although most quitters gain a little weight, one in four smokers will lose weight or stay the same.

It is important to emphasise that the substantial health benefits of quitting far outweigh the negligible effects of a small weight gain. Try to put the weight gain in perspective. Help patients to change their attitudes to weight gain and to reduce their concern about it. Explain to patients that they are artificially underweight and may simply return to the weight they would have been

if they had never smoked.

Suggest that patients weigh themselves weekly. Regular visits to the doctor for weighing, dietary and exercise advice and support can also help some patients.

### **Dietary advice**

Advise patients to follow a well balanced low-fat diet with more fruit, vegetables, breads, cereals, rice and pasta, as described in the patient hand-out on page 68. Drinking plenty of water and low-kilojoule drinks can also be helpful.

Some people get strong oral cravings after quitting. Nibbling, especially on sweet foods, is a common result of this. Advise patients to have carrot or celery sticks, fruit or low-kilojoule jellies instead, or to carry around sugarless gum or low-kilojoule sweets.

It is important to identify eating triggers, such as boredom and stress, and to learn new ways to cope with them without eating – for example, developing a hobby, doing crosswords or performing 'deep breathing' or some other relaxation exercise. Certain high risk situations, such as parties or coffee breaks, may be difficult to deal with and smokers trying to quit may overeat to avoid smoking. Avoiding these situations in the first few weeks is wise.

### **Further information**

The 'Smokescreen for the 1990s' programme is designed to help doctors to help smokers to quit. For further information about the programme, contact:

The Healthy Lifestyle Centre  
St Vincent's Hospital  
Victoria Street  
Darlinghurst NSW 2010  
Tel: (02) 361 2625  
Fax: (02) 361 2464



*The effect of smoking cessation is to raise the body weight to what it would have been if the patient had not smoked.*

## Practice points

- The mean weight gain after quitting smoking is only 2 to 4 kg.
- Smokers weigh an average of 3.4 kg less than nonsmokers. In most cases, after quitting, the body weight returns to what it would have been if the patient had not smoked.
- One in four quitters lose weight or stay the same weight.
- Weight gain is mainly due to the removal of the dietary and metabolic effects of nicotine.
- The substantial health benefits of quitting far outweigh the risks that may result from weight gain.
- Intensive weight-control programmes combined with quitting have not been shown to be successful in preventing weight gain and may reduce quit rates.
- Give simple advice on eating a low-fat diet, exercising, and avoiding snacking and high risk eating situations.
- Advise patients to make quitting the main priority. Once nonsmoking has become firmly established, strategies to lose weight can be introduced.
- Dexfenfluramine, fluoxetine and nicotine replacement therapy help reduce weight gain in the short term and may be useful for some subgroups of smokers.

After meals, it is tempting to have a second helping of food in place of the postprandial cigarette. Instead, suggest the patient gets up from the table immediately and goes for a walk or cleans his or her teeth. Drinking less alcohol is also recommended as alcohol may reduce the resolve to avoid overeating or smoking.

### Exercise

Regular exercise is an important component of a long term weight-control programme. It also helps to reduce tension and stress. Exercise programmes should be enjoyable and personalised for each patient. Advise patients to start slowly, gradually building up to at least half an hour three times per week. Walking, swimming, cycling and jogging are ideal.

### Appetite suppressants

Because of the difficulties of preventing weight gain by behaviour change,

there has been interest in the use of anorectic agents. Both dexfenfluramine\* (Adifax) and fluoxetine<sup>9</sup> (Lovan, Prozac) have been shown to significantly reduce weight gain in the short term. One study comparing the two drugs over a 12-week period found dexfenfluramine to be more effective.<sup>10</sup>

However, no long term studies have been performed and it is possible that weight gain occurs after the drugs are stopped. Until more research is undertaken, these drugs may have a place in preventing relapse caused by weight gain in the early stages of quitting, especially in smokers who have gained large amounts of weight in previous quit attempts or who are daunted by the prospect of gaining weight.

### Nicotine replacement therapy

Several studies have reported that the use of nicotine gum (Nicorette Chewing Tablets) reduces postcessa-

tion weight gain, especially in heavy smokers,<sup>11,12</sup> although this effect has not always been demonstrated. The effect of the gum is dose related, so that those quitters using more gum gain less weight.<sup>12</sup> However, subjects using the gum have been found to gain weight when they stop using it.<sup>11</sup> Thus nicotine gum may only delay, rather than prevent, weight gain. The nicotine patch (Nicabate, Nicorette Patch, Nicotinell) has also been shown to reduce weight gain after quitting,<sup>13</sup> but the results of trials are generally less consistent. Like anorectic drugs, nicotine replacement therapy may have a place in minimising early weight gain in certain groups of smokers.

## A comprehensive plan for quitting

Weight gain is only one barrier to stopping smoking. The chances of successful quitting can be increased by addressing the broader range of patient concerns and by using nicotine replacement therapy. The 'Smoke-screen for the 1990s' programme<sup>14</sup> is one framework specifically designed for doctors to use to help smokers to quit, and was developed in the School of Community Medicine at the University of New South Wales. Over the last 10 years, over 5,000 doctors throughout Australia and New Zealand have been trained in the Smokescreen programme. For more information on Smokescreen, refer to the box on page 69.

## Summary

The average weight gain after quitting smoking is small in most cases and its effects are far outweighed by the health benefits of quitting. However, intensive weight control interventions have not generally been shown to be

successful. Doctors can help by giving simple dietary and exercise advice to minimise the weight gain in the short term. Advise patients to keep quitting as the primary focus and to accept some weight gain if it occurs. Once the patient is an established non-smoker, further attempts to reduce weight can be introduced. ■

#### References

1. US Department of Health and Human Services. The health benefits of smoking cessation. A report of the Surgeon General, Public Health Service, Centre for Disease Control, Office on Smoking and Health. DHHS Publication No. 90-2962, 1990; 471-515
2. Williamson DF, Madans J, Anda RF, et al. Smoking cessation and severity of weight gain in a national cohort. *N Engl J Med* 1991; 324: 739-745.
3. Klesges RC, Meyers AW, Klesges LM, La Vasque ME. Smoking, body weight, and their effects on smoking behaviour: a comprehensive review of the literature. *Psychol Bull* 1989; 106(2): 204-230.
4. Richmond RL, Kehoe L, Webster IW. Weight change after smoking cessation in general practice. *Med J Aust* 1993; 158: 821-822.
5. Perkins KA. Weight gain following smoking cessation. *J Consult Clin Psychol* 1993; 61(5): 768-777.
6. Hall SM, Tunstall CD, Vila KL, Duffy J. Weight gain prevention and smoking cessation: cautionary findings. *Am J Public Health* 1992; 82: 799-803.
7. Pirie P. Effects of nicotine gum on post-cessation weight gain. *Health Psychol* 1992; 11(suppl.): 53-54.
8. Spring B, Wurtman J, Gleason R, Wurtman R, Kessler K. Weight gain and withdrawal symptoms after smoking cessation: a preventative intervention using dexfenfluramine. *Health Psychol* 1991; 10(3): 216-223.
9. Pomerleau OF, Pomerleau CS, Morrell EM, Lowenbergh JM. Effects of fluoxetine on weight gain and food intake in smokers who reduce nicotine intake. *Psychoneurology* 1991; 16(5): 433-440.
10. Spring B, Wurtman J, Wurtman R, Goldberg H, McDermott J, Kahne M. The effect of dexfenfluramine and fluoxetine on weight gain after smoking cessation. *International J Obes* 1994; 18(suppl. 2): 309.
11. Gross J, Stitzer ML, Maldonado J. Nicotine Replacement: effects of postcessation weight gain. *J Consult Clin Psychol* 1989; 57(1): 87-92.
12. Emont SL, Cummings KM. Weight gain following smoking cessation: a possible role for nicotine replacement in weight management. *Addict Behav* 1987; 12: 151-155.
13. Sachs DP, Sawe U, Leischow SJ. Effectiveness of a 16 hour transdermal nicotine patch in a medical practice setting, without intensive group counseling. *Arch Intern Med* 1993; 153: 1881-1890.
14. Mendelsohn CP, Richmond RL. Smokescreen for the 1990s: a new approach to smoking cessation. *Aust Fam Physician* 1994; 23(5): 841-848.

# Nicotinell<sup>(nicotine)</sup>

(TRANSDERMAL NICOTINE PATCH)

Review Product Information before prescribing

## ABRIDGED PRODUCT INFORMATION

**INDICATIONS:** Short term (3 months) treatment of nicotine dependence as part of an effective behavioural therapy program in an overall strategy for smoking cessation. **CONTRAINDICATIONS:**

non-smokers or occasional smokers; children; pregnancy and lactation; acute myocardial infarction; unstable or worsening angina pectoris; severe cardiac arrhythmias; recent cerebro-vascular accident; diseases of the skin which may complicate patch therapy; known hypersensitivity to nicotine or any component of the therapeutic system.

**WARNINGS:** Nicotine is toxic and addictive and milligram doses are potentially fatal if rapidly absorbed. Risks of nicotine replacement should be weighed against the hazards of continued smoking while using Nicotinell and the likelihood of smoking cessation without nicotine replacement. Treatment should be discontinued if symptoms of overdosage appear (nausea, vomiting, abdominal pain, diarrhoea, headache, sweating and pallor). **Safety Note:** Both before and after use, Nicotinell contains a significant amount of nicotine which can produce severe symptoms of poisoning in small children and may prove fatal. Care must be taken during handling and disposal to ensure that they are not applied or consumed by small children or pets.

**PRECAUTIONS:** In view of the pharmacological effects of nicotine, Nicotinell should only be used if other means of smoking cessation have been unsuccessful for the following susceptible high risk patients with: hypertension (especially malignant or accelerated), stable angina pectoris, cerebrovascular disease, occlusive peripheral arterial disease, heart failure, hyperthyroidism, diabetes mellitus, renal or hepatic impairment, peptic ulcer, pheochromocytoma. Subjects should be urged to stop smoking completely while using Nicotinell to avoid increased adverse effects, including cardiovascular effects (eg. angina). Subjects should discontinue use and consult their doctor if they experience severe or persistent local skin reactions at the site of application or a generalised skin reaction. Patients with contact sensitisation may have a severe reaction to other nicotine-containing products or smoking. **USE IN PREGNANCY AND LACTATION:** Category D; contraindicated. **INTERACTIONS:** No information available. Smoking cessation, with or without Nicotinell, may alter the response to concomitant

medication. In particular, anticonvulsants may require special monitoring and dosage adjustment.

**ADVERSE REACTIONS:** Some of the symptoms are hard to differentiate from recognised tobacco withdrawal symptoms. Adverse events reported in controlled clinical trials irrespective of a causal association with the study drug: **More common**

(≥6%): application site reactions (usually erythema, pruritus or burning); headache; cold and flu-like symptoms; dysmenorrhoea; insomnia; nausea; myalgia; dizziness. **Less common** (<6%): other gastrointestinal disturbances and central nervous system effects; blood pressure changes and other cardiovascular symptoms; upper respiratory symptoms; symptoms of allergy; generalised skin reactions, others. **Isolated cases:** urticaria; angioneurotic oedema; dyspnoea. **DOSAGE AND ADMINISTRATION:** The subject should stop smoking completely during treatment with Nicotinell. Those smoking more than 20 cigarettes per day should be started with Nicotinell 30 cm<sup>2</sup> once daily, applied to non-hairy skin of the trunk or upper arm. Those smoking less than this should start with Nicotinell 20 cm<sup>2</sup>. Sizes of 30 cm<sup>2</sup>, 20 cm<sup>2</sup> and 10 cm<sup>2</sup> allow for adjustment according to individual response and gradual withdrawal of nicotine replacement, using treatment periods of 3-4 weeks. Treatment periods of more than 3 months and doses above 30 cm<sup>2</sup> have not been evaluated. The abuse potential of transdermal nicotine is theoretically very low. **Note:** Safety and efficacy in individuals below 18 years of age have not been established. Experience is limited in smokers over age 65. **PRESENTATION:** transdermal therapeutic system containing nicotine: •Nicotinell

**10:** 17.5mg nicotine with a 10 cm<sup>2</sup> release area; release rate 7mg/24h (approx); branding: CG CWC; 7's, 28's. •Nicotinell **20:** 35mg nicotine with a 20 cm<sup>2</sup> release area; release rate 14mg/24h (approx); branding: CG FEF; 7's, 28's. •Nicotinell **30:** 52.5mg nicotine with a 30 cm<sup>2</sup> release area; release rate 21mg/24h (approx); branding: CG EME; 7's, 28's. **DISTRIBUTED BY:** CIBA-GEIGY Australia Limited, 140 Bungaree Road, PENDLE HILL NSW 2145. ® = Registered Trade Mark. Full Product Information available on request. NICA.1 Ref: Approved Product Information NICI.1 (23.4.93 and safety-related amendment of 27.6.94) S&H CIBN0364 ciba