

SmokeLess New Zealand

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www.smokeless.org.nz/nrt.htm

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Smokeless pure nicotine

Aim: To assist smokers to quit and stay quit

How: To provide cigarette smokers with alternatives to inhaling toxic smoke to get their nicotine, and instead use pure smokeless nicotine, so smokers can quit smoking first, then decide whether to quit nicotine at the same time or later, or not at all.

NRT-related policies required to assist smokers to quit and stay quit

- Widen the approved uses of pure nicotine through the smoking cessation guidelines.
- Continue the government subsidy of NRT (nicotine replacement therapy) patches and gum.

Safety

- Over 3000 ex-smokers used nicotine gum for 5 years. No increase in deaths or hospitalizations was found¹, compared with those not using gum, whether or not the gum chewers were still smokers.

Rationale

- Pure nicotine replaces nicotine otherwise obtained from smoking.

Revised UK Guidelines for the use of NRT (note from ASH UK on Globalink 29 Dec 05)

- All forms of NRT can be used by patients with cardiovascular disease.
- All forms of NRT can be used by smokers aged 12 to 17 years.
- NRT can be used by pregnant smokers, if it is needed to stop the smoking.
- More than one form of NRT can now be used concurrently.
- NRT can now be prescribed for up to 9 months if patients show evidence of a continued need for NRT beyond the initial 8 to 12 week treatment phase.
- NRT can now be used while still smoking, with a view to reducing the amount smoked as a prelude to quitting.

Review of NRT in the USA

The seduction of harm reduction. Proceedings of the Sept. 2004 Summit. Sacramento CA. Dept of Health Services 2005.

<http://www.dhs.ca.gov/tobacco/documents/pubs/HarmReductProceedCompleteBooklet.pdf> 8 MB, at session 4.

Proposed nicotine replacement policies for New Zealand

(1) Widen the approved uses of pure nicotine through the smoking cessation guidelines

Current policy on the uses of nicotine	Proposed policy
Short term smoking cessation aid. This includes almost all current use of NRT. Medicinal nicotine (nicotine replacement therapy products or NRT) is licensed under the Medicines Act to treat withdrawal symptoms.	Continue the subsidy, and expand to cover a wider range of providers and of NRT products. For method of finance see (2) below.

Instead of a cigarette. (example: to cope with smoking restrictions) NRT is sold over the counter, but officially long term use is not encouraged or subsidised.	Encourage addicted smokers to smoke fewer cigarettes, by using nicotine instead of a cigarette.
Long term relapse prevention. Not subsidized	Subsidise long-term NRT to prevent relapse to smoking. ³

- 1 Murray RP, Bailey WC, Daniels K. et al. Safety of nicotine polacrilex gum used by 3,094 participants in the Lung Health Study. LHS Research Group. Chest 1996; 102: 438-45.
2. Blakely T Laugesen M. Symons R et al. New Zealand cigarettes have a high nicotine content. NZ Public Hlth Rep.1997; 4: 33-4
- 3 Medioni J, Berlin I, Mallet A. Increased risk of relapse after stopping nicotine replacement therapies: a mathematical modeling approach. Addiction 2005; 100: 247-54.

The NZ Ministry of Health is commissioning a review in 2006.

(2) Tax each tobacco product according to the risk of using it. Abandon the current flat tax per gram of tobacco across all classes of tobacco.

- Double the tax on hand rolled RYO cigarettes www.smokeless.org.nz/RYOtax.htm
- Maintain the tax rate on manufactured cigarettes and cigars www.smokeless.org.nz/taxandrisk.htm
- Decrease the tax on snuff by 90%.

(3) Tax only the smoking tobaccos for nicotine content.

- **Nicotine content tax.** Develop a policy to tax only smoking tobacco products based on nicotine content. This encourages cigarette manufacturers to reduce excess smoke nicotine.
- **Consider using nicotine tax to cross-subsidise** all types of NRT products (not just gum and patches).

(4) Extend the subsidy on NRT to cover NRT use for long term relapse prevention.

(5) Subsidise pure nicotine products: support Pharmac to continue this policy.

Since 2000, Government, through district health boards and Pharmac, their drug buying agency, funds a substantial subsidy on nicotine patches and gum for those smokers assisted by the Quit Campaign.

(6) Support research to develop and test fast-acting nicotine products

Medicinal nicotine is expensive, is designed for safety, for short term use, and to not cause addiction. There is a need for popularized oral nicotine products which smokers may actually want to use instead of cigarettes. Smokeless tobacco proves that nicotine can be absorbed within five to ten minutes from the mouth. The research question is whether nicotine products can be designed to be a popular substitute for smoking, or whether smokeless tobacco is needed to fulfil that role, as in Sweden.

(7) Encourage the sale of non medicinal nicotine to increase price competition.

Non medicinal nicotine products are virtually missing from the NZ market. The high markups on medicinal nicotine products discourage smokers from using nicotine instead of cigarettes, on a temporary or permanent basis.

Background: Current legislative framework for nicotine-containing products

- 1 Cigarette nicotine as in smoking tobacco can be sold by any retailer, but not to under-18s, under the Smoke-free Environments Act. (“dirty” nicotine because it is mixed up with poisonous gases)
- 2 Non-smoking tobacco nicotine as in oral tobacco is banned from sale or promotion, though import for private use is permitted. This is controlled by the Smoke-free Environments Act.
- 3 Medicinal nicotine products are controlled by the Medicines Act. Some NRT can be sold in supermarkets. Most are sold through pharmacies or dispensed through the subsidized scheme. Spray requires a prescription.
- 4 Non-medicinal nicotine can be freely imported or sold. Nicotine can be sold for non-medicinal purposes in NZ, (general sale) as long as no claim is made that cures people of withdrawal symptoms etc. It is however permissible to claim it can be used as a substitute for cigarette smoking.

The cost of providing ‘clean’ nicotine as an alternative to the nicotine in (toxic) smoke

- NRT costs less than a packet of cigarettes – but dose for dose RYO cigarettes supply cheaper nicotine.
- Dose for dose of nicotine, only 15mg patches and 4mg gum are cheaper than manufactured cigarettes.

Table 1. NRT costs less than a packet of cigarettes- so what is the problem?

Nicotine source	Pieces/ pack	RRP \$	\$/cig. \$/Piece	Pieces used per day*	\$ Cost/ Day
Cigarettes Holiday 20	20	9.25	0.46	18	8.42
Cigarettes RYO in 30 g tobacco	83	17.95	0.20	18	3.92
GUM 2mg					
Gum Classic 2mg 15	15	7.45	0.50	9	4.47
Gum Mint 2mg 15	15	7.45	0.50	9	4.47
Gum Classic 2mg 30	30	12.95	0.43	9	3.89
Gum Mint 2mg 30	30	12.95	0.43	9	3.89
GUM 4mg					
Gum Classic 4mg 15	15	8.95	0.60	9	5.37
Gum Mint 4mg 15	15	8.95	0.60	9	5.37
Gum Classic 4mg 30	30	15.95	0.53	9	4.79
Gum Mint 4mg 30	30	15.95	0.53	9	4.79
TABLET					
Sublingual tab. 30	30	19.70	0.67	9	6.03
PATCH					
Patch 15mg 7	7	24.95	3.56	1	3.56
Patch 10mg 7	7	22.95	3.28	1	3.28
Patch 5mg 7	7	19.95	2.85	1	2.85

1. Fraser T, McRobbie H et al. Evaluation of Smokestop an internet based smoking cessation programme. Auckland, 2006. For cigarette data see Table 1, at www.smokeless.org.nz/ryotax.htm
2. Average pieces of NRT per day: D.Barlow, NHF. Sept 2005.

Dose for dose of nicotine,

- The only NRT cheaper at retail than manufactured cigarettes is 4 mg gum, and the 15 mg patch:
- All NRT is more expensive than RYO cigarettes.

Table 2. Nicotine absorbed and cost per milligram absorbed

Nicotine product	Nicotine content mg	Nicotine absorbed per dose ² Mg	Cost per piece \$	Cost per mg nicotine \$
Cigarettes Holiday 20	13¹	1.4	0.46³	0.33
Cigarettes RYO 18 x 0.36g⁴	6.5	1.4	0.20	0.14
GUM 2mg				
Gum Classic 2mg 15	2	1	0.50	0.50
Gum Mint 2mg 15	2	1	0.50	0.50
Gum Classic 2mg 30	2	1	0.43	0.43
Gum Mint 2mg 30	2	1	0.43	0.43
GUM 4mg				
Gum Classic 4mg 15	4	2	0.60	0.30
Gum Mint 4mg 15	4	2	0.60	0.30
Gum Classic 4mg 30	4	2	0.53	0.27
Gum Mint 4mg 30	4	2	0.53	0.27
TABLET				
Sublingual tab. 30 ⁵	2	1	0.67	0.67
PATCH				
Patch 15mg 7	15	15	3.56	0.24
Patch 10mg 7	10	10	3.28	0.33
Patch 5mg 7	5	5	2.85	0.57

1. Blakely T Laugesen M. Symons R et al. New Zealand cigarettes have a high nicotine content. NZ Public Hlth Rep.1997; 4: 33-4.
2. Fagerstrom K. The nicotine market: An attempt to estimate the nicotine intake from various sources and the total nicotine consumption in some countries. *Nicotine Tob Res* 2005; 7: 1-8.
3. Health New Zealand. Analysis of Manufacturers Returns 2004. www.ndp.govt.nz Table F.
4. Taxation of RYO cigarettes in line with the risk. Table 1. www.smokeless.org.nz/ryotax.htm RYO cigarettes averaged 0.36 gm tobacco, and 18 smoked daily. Because the addiction rate was no less smoking RYO cigarettes, it is assumed that the nicotine extracted was 1.4 mg as for manufactured cigarettes.
5. Available from pharmacy only.

Table 3 shows that current practice or recommendations mean that many smokers quitting by using NRT will be nicotine deprived, and so vulnerable to resuming smoking.

For example, one 15 mg patch only replaces half the nicotine previously obtained from smoke.

As Table 3, shows, to fully replace cigarette smoke nicotine, the core products NRT 4mg gum, and NRT 15 mg patch do cost less than manufactured cigarettes, but for RYO smokers, cigarettes are cheaper.

The cost of fully replacing the smoke nicotine

Table 3. Since NRT only provides partial replacement of cigarette smoke nicotine, what is the cost of full replacement?

Nicotine source	Nicotine absorbed daily, based on average number of pieces used mg*	Previous column as % of daily cigarette nicotine	Cost per piece* \$	Amount of Nicotine required for full replacement	Daily cost of full replacement of cigarette smoke nicotine
Cigarettes Holiday 20	28	100	0.46	1 packet	9.25
RYO cigarettes 18	25	100	0.20	1 packet	3.92
GUM 2mg					
Gum Classic 2mg 15	9	32	0.50	2 packets	14.90
Gum Mint 2mg 15	9	32	0.50	2 packets	14.90
Gum Classic 2mg 30	9	32	0.43	1 packet	12.95
Gum Mint 2mg 30	9	32	0.43	1 packet	12.95
GUM 4mg					
Gum Classic 4mg 15	18	64	0.60	1 packet	8.95
Gum Mint 4mg 15	18	64	0.60	1 packet	8.95
Gum Classic 4mg 30	18	64	0.53	½ packet	8.00
Gum Mint 4mg 30	18	64	0.53	½ packet	8.00
TABLET					
Sublingual tab. 30 #	9	32	0.67	1 packet	19.70
PATCH					
Patch 15mg 7**	15	54	3.56	2 patches	7.10
Patch 10mg 7**	10	36	3.28	3 patches	10.95
Patch 5mg 7**	5	18	2.85	6 patches	17.10

*From Tables 1 and/or 2 above.

Pharmacy only.

** These weaker patches are actually used to wean people off the 15 mg patches.

The quantity of NRT required for full nicotine replacement may be greater than shown in Table 3.

The estimate of 1.4 mg absorbed, is an average only; smokers vary greatly in the amount of nicotine they need to inhale per cigarette.