Appendix 1.
Fagerström Test for Nicotine Dependence (FTND) and Heaviness of Smoking (HSI)*

Please answer the following questions:

1. **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

2. **Do you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, cinema, etc.)?**
   - 1 - Yes
   - 0 - No

3. **Which cigarette would you hate to give up?**
   - 1 - The first one in the morning
   - 0 - All the others

4. **How many cigarettes/day do you smoke?**
   - 0 - 10 or less
   - 1 - 11-20
   - 2 - 21-30
   - 3 - 31 or more

5. **Do you smoke more frequently during the first hours after waking than during the rest of the day?**
   - 1 - Yes
   - 0 - No

6. **Do you smoke if you are so ill you are in bed most of the day?**
   - 1 - Yes
   - 0 - No

* The Heaviness of Smoking Index (HSI) consists of FTND Item 1 and FTND Item 4, using the same response scales and calculating the total score using the sum of the scores on those two items.

Total score = Sum of all questions

Appendix 2.
Features of Diagnostic and Statistical Manual-IV (DSM-IV) Substance Dependence that are Targeted by Structured Diagnostic Interviews

A maladaptive pattern of substance use, leading to clinically significant impairment or distress as manifested by three (or more) of the following occurring at any time in the same 12-month period:

1. Tolerance, as defined by either of the following:
    a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
    b. Markedly diminished effect with continued use of the same amount of substance.

2. Withdrawal, as manifested by either of the following:
    a. The characteristic withdrawal syndrome for the substance
    b. The same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.

3. The substance is often taken in larger amounts or over a longer period than was intended.

4. There is a persistent desire or unsuccessful efforts to cut down or control substance use.

5. A great deal of time is spent in activities necessary to obtain the substance (e.g. visiting multiple doctors or driving long distances), use the substance (e.g. chain smoking), or recover from its effects.

6. Important social, occupational, or recreational activities are given up or reduced because of substance use.

7. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g. current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

Appendix 3.
Features of the International Statistical Classification and Related Health Problems-10 (ICD-10) Substance Dependence that are Targeted by Structured Diagnostic Interviews

Three or more of the following manifestations should have occurred together for at least one month, or if persisting for periods of less than one month, should have occurred together repeatedly within a 12-month period:

1. A strong desire or sense of compulsion to take the substance.

2. Impaired capacity to control substance-taking behaviour in terms of onset, termination or level of use, as evidenced by: the substance being often taken in larger amounts or over longer periods of time than intended, or any unsuccessful effort or persistent desire to cut down or control substance use.

3. A physiological withdrawal state when substance use is reduced or ceased, as evidenced by the characteristic withdrawal syndrome for the substance, or use of the same (or closely related) substance with the intention of relieving or avoiding withdrawal symptoms.

4. Evidence of tolerance to the effects of the substance, such that there is a need for markedly increased amounts of the substance to achieve intoxication or desired effect, or that there is a markedly diminished effect with continued use of the same amount of the substance.

5. Preoccupation with substance use, as manifest by: important alternative pleasures or interests being given up or reduced because of substance use, or a great deal of time being spent in activities necessary to obtain the substance, take the substance, or recover from its effects.

6. Persisting with substance use despite clear evidence of harmful consequences as evidenced by continued use when the person was actually aware of the nature and extent of harm.

Appendix 4.
The Tobacco Dependence Screener (TDS)*

Please answer the following questions either yes or no:

1. Have you often had periods of days when you smoked a lot more than you than you intended to?

2. Have you ever tried to quit or cut down on tobacco and found you could not?

3. Did you crave tobacco after you quit or cut down on it?

4. Did you have any of the following problems when you quit or cut down on tobacco: irritation, nervousness, restless, trouble concentrating, headache, drowsiness, upset stomach, heart slow down, increased appetite or body weight, hand shakes, or depression?

5. Did you ever start using tobacco again to keep from having such problems?

6. Have you ever continued to smoke when you had a serious illness that you knew made it unwise to use tobacco?

7. Have you ever continued to use tobacco after you knew that it caused you health problems?

8. Did you continue to use tobacco after you knew that it caused you mental problems?

9. Have you ever felt like you were dependent on tobacco?

10. Have you given up work or social activities so you could use tobacco?

* To get the total score for the TDS, add up all the points by giving each “yes” response one point, and each “no” response zero points.

Appendix 5.
The Cigarette Dependence Scale (CDS)

1. Please rate your addiction to cigarettes on a scale of 0 to 100:†
   a. I am NOT addicted to cigarettes at all = 0
   b. I am extremely addicted to cigarettes =100
      1 - 0-20
      2 - 21-40
      3 – 41-60
      4 – 61-80
      5 – 81-100

2. On average, how many cigarettes do you smoke per day?†
      1 – 0-5
      2 – 6-10
      3 – 11-20
      4 – 21-29
      5 – 30+

3. Usually, how soon after waking up do you smoke your first cigarette?†
      5 – 0-5 minutes
      4 – 6-15 minutes
      3 – 16-30 minutes
      2 – 31-60 minutes
      1 – 61+ minutes

4. For you, quitting smoking for good would be:†
      5 – Impossible
      4 – Very difficult
      3 – Fairly difficult
      2 – Fairly easy
      1 – Very easy

Please indicate whether you agree with each of the following statements:
      1 – Totally disagree
      2 – Somewhat disagree
      3 – Neither agree nor disagree
      4 – Somewhat agree
      5 – Fully agree

5. After a few hours without smoking I feel an irresistible urge to smoke.†
6. The idea of not having any cigarettes causes me stress.
7. Before going out, I always make sure that I have cigarettes with me.
8. I am a prisoner of cigarettes.
9. I smoke too much.
10. Sometimes I drop everything to go out and buy cigarettes.
11. I smoke all the time.
12. I smoke despite the risks to my health.

The CDS total scores are sums of all of the relevant 5 or 12 items.

† Items included in the CDS-5.

Appendix 6.
The Nicotine Dependence Syndrome Scale (NDSS)

Circle the number that indicates how well each of the following statements describes you:

1 – Not at all true
2 – Somewhat true
3 – Moderately true
4 – Very true
5 – Extremely true

1. After not smoking for while, I need to smoke to relieve feelings of restlessness and irritability.
2. Whenever I go without a smoke for a few hours, I experience craving.
3. After not smoking for a while, I need to smoke in order to keep myself from experiencing any discomfort.
4. When I'm really craving a cigarette, it feels like I'm in the grip of some unknown force that I cannot control.
5. I feel a sense of control over my smoking. I can "take it or leave it" at any time.
6. I tend to avoid restaurants that don't allow smoking, even if I would otherwise enjoy the food.
7. Sometimes I decline offers to visit with my non-smoking friends because I know that I'll feel uncomfortable if I smoke.
8. Even if traveling a long distance, I'd rather not travel by airplane because I wouldn't be allowed to smoke.
9. Since the time when I became a regular smoker, the amount I smoke has either stayed the same or has decreased somewhat.
10. Compared to when I first started smoking, I need to smoke a lot more now in order to get what I want out of it.
11. Compared to when I first started smoking, I can smoke much, much more now before I start to feel nauseated or ill.
12. It's hard to estimate how many cigarettes I smoke per day because the number often changes.
13. My smoking pattern is very irregular throughout the day. It is not unusual for me to smoke many cigarettes in an hour, then not have another one until hours later.
14. The number of cigarettes I smoke per day is often influenced by other factors – how I'm feeling, what I'm doing, etc.
15. I smoke at different rates in different situations.
16. My smoking is not much affected by other things. I smoke about the same amount whether I'm relaxing or working, happy or sad, alone or with others, etc.
17. My cigarette smoking is fairly regular throughout the day.
18. I smoke consistently and regularly throughout the day.
19. I smoke about the same amount on weekends as on weekdays.

Scoring for the NDSS involves multiplying the item score by a factor loading score and then summing the factor-corrected scores for each subscale and for the total scale. See Shiffman *et al.* (2004) for the factor loadings.

Appendix 7.
Wisconsin Inventory of Smoking Dependence Motives (WISDM)

Below are a series of statements about cigarette smoking. Please rate your level of agreement for each, using the following scale:

1 = Not true of me at all
2
3
4
5
6
7 = Extremely true of me

1. I enjoy the taste of cigarettes most of the time.
2. Smoking keeps me from gaining weight.
3. Smoking makes a good mood better.
4. If I always smoke in a certain place it is hard to be there and not smoke.
5. I often smoke without thinking about it.
6. Cigarettes control me.
7. Smoking cigarettes improves my mood.
8. Smoking makes me feel content.
9. I usually want to smoke right after I wake up.
10. Very few things give me pleasure each day like cigarettes.
11. It's hard to ignore an urge to smoke.
12. The flavor of a cigarette is pleasing.
13. I smoke when I really need to concentrate.
14. I can only go a couple hours between cigarettes.
15. I frequently smoke to keep my mind focused.
16. I rely upon smoking to control my hunger and eating.
17. My life is full of reminders to smoke.
18. Smoking helps me feel better in seconds.
19. I smoke without deciding to.
20. Cigarettes keep me company, like a close friend.
21. Few things would be able to replace smoking in my life.
22. I'm around smokers much of the time.
23. There are particular sights and smells that trigger strong urges to smoke.
24. Smoking helps me stay focused.
25. Smoking helps me deal with stress.
26. I frequently light cigarettes without thinking about it.
27. Most of my daily cigarettes taste good.
28. Sometimes I feel like cigarettes rule my life.
29. I frequently crave cigarettes.
30. Most of the people I spend time with are smokers.
31. Weight control is a major reason why I smoke.
32. I usually feel much better after a cigarette.
33. Some of the cigarettes I smoke taste great.
34. I'm really hooked on cigarettes.
35. Smoking is the fastest way to reward myself.
36. Sometimes I feel like cigarettes are my best friends.
37. My urges to smoke keep getting stronger if I don't smoke.
38. I would continue smoking, even if it meant I could spend less time on my hobbies and other interests.
39. My concentration is improved after smoking a cigarette.
40. Seeing someone smoke makes me really want a cigarette.
41. I find myself reaching for cigarettes without thinking about it.
42. I crave cigarettes at certain times of the day.
43. I would feel alone without my cigarettes.

Appendix 7.
Wisconsin Inventory of Smoking Dependence Motives (WISDM)

44. A lot of my friends or family smoke.
45. Smoking brings me a lot of pressure.
46. Cigarettes are about the only thing that can give me a lift when I need it.
47. Other smokers would consider me a heavy smoker.
48. I feel a strong bond with my cigarettes.
49. It would take a pretty serious medical problem to make me quit smoking.
50. When I haven't been able to smoke for a few hours, the craving gets intolerable.
51. When I do certain things, I know I'm going to smoke.
52. Most of my friends and acquaintances smoke.
53. I love the feeling of inhaling the smoke into my mouth.
54. I smoke within the first 30 minutes of awakening in the morning.
55. Sometimes I'm not aware that I am smoking.
56. I'm worried that if I quit smoking I'll gain weight.
57. Smoking helps me think better.
58. Smoking really helps me feel better if I've been feeling down.
59. Some things are very hard to do without smoking.
60. Smoking makes me feel good.
61. Smoking keeps me from overeating.
62. My smoking is out of control.
63. I consider myself a heavy smoker.
64. Even when I feel good, smoking helps me feel better.
65. I reach for cigarettes when I feel irritable.
66. I enjoy the sensations of a long, slow exhalation of smoke.
67. Giving up cigarettes would be like losing a good friend.
68. Smoking is the easiest way to give myself a lift.

WISDM Subscale Scores = Mean of all subscale items

WISDM Total Score = Sum of all the subscale means

WISDM Subscale	Items
Affiliative Attachment	#20, 36, 43, 48, 67
Automaticity	#5, 19, 26, 41, 55
Loss of Control	#6, 28, 34, 62
Behavioral Choice/Melioration	#10, 21, 35, 38, 46, 49, 68
Cognitive Enhancement	#13, 15, 24, 39, 57
Craving	#11, 29, 37, 50
Cue exposure/Associative Process	#4, 17, 23, 40, 42, 51, 59
Negative Reinforcement	#7, 18, 25, 32, 58, 65
Positive Reinforcement	#3, 8, 45, 60, 64
Social/Environmental Goals	#22, 30, 44, 52
Taste/Sensory Process	#1, 12, 27, 33, 53, 66
Tolerance	#9, 14, 47, 54, 63
Weight Control	#2, 16, 31, 56, 61

Appendix 8.
The Fagerström Test for Nicotine Dependence-Smokeless Tobacco (FTND-ST)

1. How soon after you wake up to do you place your first dip?

Within 5 min	3
6–30 min	2
31–60 min	1
After 60 min	0

2. How often do you intentionally swallow tobacco juice?

Always	2
Sometimes	1
Never	0

3. Which chew would you hate to give up most?

The first one in the morning	1
Any other	0

4. How many cans/pouches per week do you use?

More than 3	2
2–3	1
1	0

5. Do you chew more frequently during the first hours after awakening than during the rest of the day?

Yes	1
No	0

6. Do you chew if you are so ill that you are in bed most of the day?

Yes	1
No	0

Appendix 9.
Quantitative Measures of Constructs to Assess Labelling Policies

I. Quantitative Measures

Health Warnings - Awareness

Measure	"Are you aware of any recent changes to health warnings on cigarette packs?" (Yes, No)
Source	Borland & Hill, 1997b
Outcome	Almost universal awareness among adult smokers in Australia.
Measure	"Have you noticed any changes to the health warnings on cigarette packages?" (Yes, No)
Source	Health Canada, 2001
Outcome	Almost universal awareness among general population in Canada, including non-smokers and youth.
Measure	"Have you ever seen health warning messages on cigarette packages?" (Yes, No)
Source	Hammond *et al.*, 2003
Outcome	Almost universal awareness among adult smokers in Canada.
Measure	"Have you noticed any changes to the warning labels on cigarette packs since [6 month anchor]?" (Yes, No) "Does the pack you are currently smoking have the new warnings?" (Yes, No)
Source	The ITC Project
Outcome	Used to evaluate the implementation of new UK warnings in 2003; high levels of awareness.
Measure	"Have you seen the new warning labels which include pictures?" (Yes, No, Don't know)
Source	Koval *et al.*, 2005
Outcome	Young adults: Current smokers and experimental/ex-smokers were more likely to have seen new pictorial warning labels than never-smokers.

Appendix 9.
Quantitative Measures

Health Warnings - Looking/Reading	
Measure	"About how often do you find yourself looking at, or reading health warning messages on cigarette packages?" (Never, Less than once a week, About once a week, Once every 2 or 3 days, About once a day, Several times per day)
Source	Health Canada, 2005
Outcome	Increased significantly following the implementation of new pictorial warnings.
Measure	"In the last month, that is, since [date], how often, if at all, have you noticed the warning labels on cigarette packs?" (Never, Rarely, Sometimes, Often, Very Often) "In the last month, how often, if at all, have you read or looked closely at the warning labels on cigarette packs?" (Never, Rarely, Sometimes, Often, Very Often)
Source	Hammond *et al.*, 2007a
Outcome	Measures of noticing and reading strongly associated with the size and comprehensiveness of warnings among Canadian, USA, UK, and Australian adult smokers. Changes in the warnings were associated with increases in noticing and reading in the UK.
Depth of Processing	
Measure	"In the past 3 months, how carefully have you ever read the inside messages in cigarette packs?" (5-point Likert scale) "In the past 3 months, how carefully have you ever read the outside messages in cigarette packs?" (5-point Likert scale) "In the past 3 months, how often have you thought about what the inside warnings have to say?" (5-point Likert scale) "In the past 3 months, how often have you thought about what the outside warnings have to say?" (5-point Likert scale) "In the past 3 months, have you ever talked about the new warning labels with other smokers or non-smokers?" (Never, Rarely, Sometimes, Often, All the time) "In the past 3 months, have you ever thought about the warning labels or what they had to say when a cigarette pack wasn't in sight?" (Never, Rarely, Sometimes, Often, All the time) "In the past 3 months, have you ever saved or held on to a warning label after you had finished the pack?" (Yes, No)
Source	Hammond *et al.*, 2004a
Outcome	Depth of Processing scale consisting of these measures was associated with intention to quit (cross-sectional analyses), as well as future cessation-related behaviour (decreases in consumption, attempt to quit, or abstinence) at 3-month follow-up, adjusting for demographics, intentions to quit, and measures of consumption.

Appendix 9.
Quantitative Measures

Health Warnings - Discussions with Others	
Measure	"Did the box encourage you to talk about smoking with other people?" (Never, Sometimes, Often) "Over the past 4 weeks, have you discussed smoking with other people?" (Never, Sometimes, Often)
Source	Christie & Etter, 2004
Outcome	After four weeks using cigarette pack covers with health warnings, almost one third (32%) said that the boxes often prompted discussions about smoking with others, 51% responded sometimes, and 16% said never.
Measure	"How often have people you know mentioned or discussed the new warnings on cigarette packs in conversations with you?" (Frequently, Sometimes, Rarely, Never)
Source	Canadian Cancer Society, 2001
Outcome	More than 80% of people had people they know discuss the new warnings.
Health Warnings - Media Sources	
Measure	"In the last 6 months, have you noticed advertising or information that talks about the dangers of smoking, or encourages quitting in any of the following places?" (Yes, No to a list of 9 sources, including "on cigarette packages")
Source	Hammond *et al.*, 2006a
Outcome	Between country differences observed: noticing information on cigarette packs was strongly associated with the size and strength of the warning in Canada, USA, UK, and Australia. Package warnings were the second most common source of health information after television.
Emissions - Looking/Reading	
Measure	"Overall, how often do you find yourself looking at, or reading, the information about chemicals and substances on the side of cigarette packages?" (Never, Less than once a week, About once a week, Once every 2 or 3 days, About once a day, Several times per day)
Source	Health Canada, 2003
Outcome	Descriptive: approximately 43% reported "never" looking at the information on the side of packages, whereas a quarter reported looking at the side once per week or more often.

Appendix 9.
Quantitative Measures

Measure	"In the last month, how often have you read or looked closely at the information about the contents on the side of the pack?" (Never, Rarely, Sometimes, Often, Very often)
Source	The ITC Project
Outcome	Descriptive: approximately 43% reported "never" looking at the information on the side of packages, whereas a quarter reported looking at the side once per week or more often. More than one half reported using the higher number in the range, mainly because it was "most harmful."
Health Warnings – Eye Tracking	
Measure	Eye tracking: Participants wore eye-tracking equipment and viewed USA cigarette advertisements with health warnings.
Source	Fischer *et al.*,1989b
Outcome	Average attention to warning was 8% of viewing time; the health warning was not viewed at all in almost half of all cases (44%). Viewing time associated with subsequent recall/recognition of health warnings.
Measure	Eye tracking: Participants wore eye-tracking equipment and viewed cigarette ads with health warnings, including existing mandated warnings in the USA and newly developed warnings.
Source	Krugman *et al.*, 1994
Outcome	The new warnings were more likely to attract attention, attract attention in a shorter period of time, although were less likely to hold attention over time.
Health Warnings – Viewing Time	
Measure	Health warnings were flashed on a screen and the amount of time was recorded.
Source	Peters *et al.*, 2007
Outcome	Longer viewing times were associated with picture warnings compared to text warnings.
Health Warning - Location	
Measure	"Where on the cigarette packages have you seen warning labels?" (Presented with diagram) "Circle all of the real warnings that you have actually seen on packages of cigarettes." (Four actual and four false)
Source	Robinson & Killen, 1997
Outcome	Increased knowledge of pack warnings associated with higher levels of smoking.

Appendix 9.
Quantitative Measures

Measure	"Without looking at a cigarette package, where on the pack are the warnings or messages located?" (Open ended)
Source	Hammond *et al.*, 2004a
Outcome	Participants showed good recall of outside warnings; lesser recall of inside warnings.
Measure	"Where are the warnings on Canadian cigarette packages located?" (Open ended)
Source	Environics Research Group, 2003
Outcome	Participants showed good recall of outside warnings; lesser, though still high, recall of inside warnings.
Measure	Knowledge of the presence and location of health warnings on packages.
Source	Richards *et al.*, 1989
Outcome	67% knew the warnings were on the side of the pack (91% of current smokers versus 60% of non-smokers).
Health Warning – Content	
Measure	"As far as you know, what do the health warnings on cigarette packets say?" (Open ended)
Source	Hill, 1988
Outcome	86% knew at least one health warning. 97% of smokers could provide text of a warning; smokers more knowledgeable about warning content. Knowledge of warnings may be associated with intention to quit.
Measure	Smokers were asked about the content of US Surgeon General's warnings on cigarette packages.
Source	Richards *et al.*, 1989
Outcome	Very few (7%) knew there were four different warnings. Content knowledge was low: 22% no knowledge, 48% knew general theme (health), 28% knew one specific theme, 1% knew wording for one. Smokers and non-smokers had similar results.
Measure	"Circle all of the real warnings that you have actually seen on packages of cigarettes." (Four actual and four false)
Source	Robinson & Killen, 1997
Outcome	Increased knowledge of pack warnings associated with higher levels of smoking.
Measure	"As far as you know, what do the health warnings on the front of cigarette packs say?" (Open ended)
Source	Borland & Hill, 1997a
Outcome	Increase in knowledge following implementation of more comprehensive policy.

Appendix 9.
Quantitative Measures

Measure	Students were asked to list everything they could remember about a cigarette package after they had viewed an image for approximately one minute.
Source	Rootman *et al.*, 1995
Outcome	Students in Canada were more likely to recall the health warning on Canadian packages (83%) than USA students were to recall warnings on USA packages (6%).
Measure	"I'm now going to describe some warning labels or messages that may or may not be on cigarette packages. I'd like you to tell whether you remember seeing each on packs, by answering yes or no." (Recognition: four actual, four false warnings) "Which of the following types of information are provided either on the outside or the inside of cigarette packages?" (Recognition: seven actual, one false) "Can you recall any specific quit-tips that appear on cigarettes packs?" (Open ended)
Source	Hammond *et al.*, 2004a
Outcome	Respondents provided a range of responses. The "mouth cancer" warning was the most common response.
Measure	"In your own words, write or describe the health warnings you remember." (Open ended)
Source	Health Canada Youth Smoking Survey (Brown *et al.*, 2005)
Outcome	Respondents provided a range of responses. "Mouth cancer" and "impotence" most commonly recalled warnings.
Measure	"Without looking at a cigarette package, what specific health warning messages can you remember seeing on cigarette packages in Canada?" (Open ended)
Source	Health Canada, 2003
Outcome	Respondents provided a range of responses. The "mouth cancer" warning was the most common response.
Measure	Participants were asked to identify current USA labels (Score out of four)
Source	O'Hegarty *et al.*, 2006
Outcome	Descriptive only: approximately half identified at least three of the four warning messages on USA cigarette packs.
Emission Side Panel - Content	
Measure	"Without looking at anything, what, if any, chemicals or substances can you name that are in cigarettes or cigarette smoke?" (Open ended)

Appendix 9.
Quantitative Measures

	"Without looking at a cigarette package, as far as you know, are any chemicals or substances currently listed on cigarette packages in Canada" (Yes, No)
	"Without looking at a cigarette package, can you name any chemicals or substances that are currently listed on cigarette packages in Canada?" (Open ended)
Source	Health Canada, 2003
Outcome	Higher recall for nicotine (64%) and tar (53%) than the four other emissions listed on packages (<25%). Daily smokers more likely to recall other emissions.
Measure	"Without looking at a pack, can you tell me the tar level of your cigarettes?" (Open ended)
Source	O'Connor *et al.*, 2006c
Outcome	Very few were able to correctly recall tar level. Smokers living in a country where the tar numbers were listed on packs were more likely to report the tar level.
Measure	"Can you tell me, in milligrams, the tar content of your cigarettes?" (Open ended)
	Smokers were asked where they could obtain information on the yield of the cigarette brand they smoked. (5 point scale: Very low (1-3mg), Low (4-6mg), Medium (7-9mg), High (10-12mg), Very high (10-12mg))
Source	Chapman *et al.*, 1986
Outcome	Only 2% of smokers correctly recalled the ISO tar level and a majority underestimated the level of their own brand.
Measure	"What is the tar number of the cigarettes you smoked most recently?" (Open ended) "Is a [5mg/16mg] tar cigarette lower in tar than most cigarettes on the market?" (Yes, No)
Source	Cohen, 1996b
Outcome	Few smokers knew the tar level of cigarettes, with the exception of those who smoked cigarettes in the 1-5mg FTC tar range.
Health Warnings – Affective Reactions	
Measure	"Some people have reported that the warning labels have made them feel different types of emotion. On a scale from 1 to 5 where, 1 is not at all and 5 is extremely, have the warning labels made you feel: fearful, amused, disgusted, angry?"
Source	Hammond *et al.*, 2004a
Outcome	Respondents who reported greater negative emotional responses were more likely to engage in cessation-related behaviour (i.e. attempts to quit, reductions in consumption, or abstinence) at 3-month follow-up.

Appendix 9.
Quantitative Measures

Measure	Response to smoking-related image or word cues on four adjective pairs (e.g. good-bad, positive-negative, favorable-unfavorable, and like-dislike) "How does this warning label make you think and feel about cigarette smoking?" on a 9-point scale (–4 = extremely negative to +4 = extremely positive)
Source	Peters *et al.*, 2007
Outcome	Canadian labels produced more negative affective reactions to smoking cues and to the smoker image, among both smokers and nonsmokers, without signs of defensive reactions from smokers. Participants in the Canadian label condition reported that their warning labels made them feel more negative toward smoking than those in the US label condition.
Health Warnings – Avoidance	
Measure	"Since the beginning of the year, have you ever concealed the warning messages on your cigarette package, either by placing a cardboard sleeve or other cover over your package, OR by transferring your cigarettes to another container?" (Yes, No for each option) "Do you currently do this with your cigarettes all the time, occasionally, rarely, or never?"
Source	Canadian Cancer Society, 2001
Outcome	Descriptive only.
Measure	"I try my best to avoid thinking about the warning labels." (Strongly disagree, Somewhat disagree, Neutral, Somewhat agree, Strongly agree) "Have you made any efforts to avoid the labels by: (1) covering or hiding the labels? (2) using another case? (3) any other method?" (Yes, No to each question) "Have you ever bought another brand or requested a specific package to avoid a particular warning label?" (Yes, No)
Source	Hammond *et al.*, 2004a
Outcome	Approximately 40% reported at least one avoidance behaviour. Avoidance was not associated with future cessation related behaviour measured at 3-month follow-up.
Measure	"In the last month, have you made any effort to avoid looking at or thinking about the warning labels: (1) by covering the warnings up? (2) by keeping the pack out of sight? (3) by using a cigarette case or some other pack? (4) by not buying packs with particular labels?" (Yes, No to each question)
Source	The ITC Project
Outcome	Descriptive only.

Appendix 9.
Quantitative Measures

Health Warnings – Accuracy	
Measure	"How accurately do you feel the warnings depict the risks to your health?" (Very inaccurately, Somewhat inaccurately, Neutral, Somewhat accurately, Very accurately)
Source	Hammond *et al.*, 2004a
Outcome	Fewer than 15% of smokers reported that the information in the pictorial warnings was at all inaccurate.
Measure	"The messages are accurate." (Strongly Disagree, Somewhat disagree, Somewhat agree, Strongly Agree) "The messages provide you with important information about the health effects of smoking cigarettes." (Strongly Disagree, Somewhat disagree, Somewhat agree, Strongly Agree)
Source	Health Canada, 2005
Outcome	Descriptive only: Fewer than 10% of adults or youth disagreed that the warnings were accurate, while approximately 20% or less disagreed that the messages provide important information about health risks.
Health Warnings – Believability	
Measure	Credibility: 7 point bi-polar scale (informative-uninformative).
Source	Loken & Howard-Pitney, 1988
Outcome	Specific warnings on US cigarette advertisements were rated as credible.
Measure	"In your opinion, are each of the following sources of information about the chemicals and substances in cigarettes and cigarette smoke very, somewhat, not very, or not at all trustworthy ...? (1) Canadian Cancer Society, (2) Health Canada, (3) Tobacco companies
Source	Health Canada, 2003
Outcome	Well respected, non-governmental organisations and Health Canada were found to be highly credible sources of health information, whereas the tobacco companies were not.
Measure	"How much do you believe the information in the warning label is true or false?" on a 9 point scale (–4 = completely false to +4= completely true). US participants were asked whether Canadian labels should be used in the USA.
Source	Peters *et al.,* 2007
Outcome	No differences in the believability of text or graphic warnings. A majority of both smokers and nonsmokers endorsed the use of Canadian labels in the USA.

Appendix 9.
Quantitative Measures

Measure	"Do you believe the health warnings that you see on cigarette packages?" (Yes, No, Not sure, I haven't see them)
Sources	Health Canada Youth Smoking Survey, 2002; Brown *et al.,* 2005 (http:// www.hcsc.gc.ca/hl-vs/pubs/tobac-tabac/yss-etj-2002/index-eng.php)
Outcome	Almost universal agreement among youth that the health warnings were believable.
Measure	Perceived Believability Scale: Unbelievable/Believable, Untrustworthy/Trustworthy, Not convincing/Convincing, Not credible/Credible, Unreasonable/Reasonable, Dishonest/Honest, Questionable/Unquestionable, Inconclusive/Conclusive, Not authentic/Authentic, Unlikely/ Likely (Adjective pairs rated on 1-5 Likert scale)
Source	Beltramini, 1988
Outcome	Respondent's smoking behaviour (and demographics) had no effect on perceive believability of USA health warnings.
Measure	Beltramini's 10-item Perceived Believability Scale (see above).
Source	Cecil *et al.*, 1996
Outcome	Smokers score lower than non-smokers when viewing heath warnings.
Health Warnings – Public Opinion/Support	
Measure	Respondents were asked about the adequacy of current warnings, approval for more information if it meant that less youth would smoke, and approval of "rules to make cigarette packets less colourful and attractive." (Open ended)
Source	Borland & Hill, 1997a
Outcome	Descriptive only: Half thought adequate, a third thought there should be more - 88% approval if caused less youth to smoke - 60% for less attractive; 87% for less attractive, if reduced uptake
Measure	"How much do you agree or disagree with cigarette packages having health warning messages?" (Agree a lot, agree a little, Neither agree nor disagree, Disagree a little, Disagree a lot)
Source	Health Canada Youth Smoking Survey, 2002 (http://www.hc-sc.gc.ca/hl-vs/pubs/tobac-tabac/yss-etj-2002/index-eng.php)
Outcome	Descriptive only: high levels of support from youth smokers and non-smokers.

Appendix 9.
Quantitative Measures

Measure	"Would you like to see more or less of the following information on cigarette packages?" (More, Less, About right) 1. health risks 2. how to quit 3. benefits of quitting 4. where to get help to quit 5. 1-800 telephone # for info and advice 6. website address
Source	Hammond *et al.*, 2004a
Outcome	The majority of smokers reported a desire for more information for each variable. Fewer than 30% expressed a desire for less health information on packages.
Measure	Participants were asked their opinions about the size of the US labels. (Open ended)
Source	O'Hegarty *et al.*, 2006
Outcome	A higher percentage of former smokers than current smokers (62.0% and 40.8%, respectively) thought that current US labels should be larger.
Emission Labelling - Public Support	
Measure	"Cigarette manufacturers are currently required to list three chemicals - carbon monoxide, tar, and nicotine, and their amounts on cigarette packages. What do you think about requiring cigarette manufacturers to add to this list three other chemicals that are found in tobacco - formaldehyde, benzene, and hydrogen cyanide, and their amounts?" (Strongly support, Somewhat support, Somewhat oppose, Strongly oppose)
Source	Health Canada, 2001
Outcome	Descriptive only: approximately 90% of the general population indicated support, with approximately 80% of youth and adult smokers indicating support.
Measure	Participants were asked whether they agreed or disagreed that tar yields should be displayed wherever cigarettes are purchased. (Agree, Disagree, Unsure)
Source	Chapman *et al.*, 1986
Outcome	72% agreement.

Appendix 9.
Quantitative Measures

Health Warnings – Thinking About Health Risks	
Measure	"In the past 3 months, how have the warning labels affected how much you think about the health risks of smoking? Have they made you think about health risks: A lot less, A little less, No difference, A little more, A lot more?"
Source	Hammond *et al.*, 2004a
Outcome	Associated with intentions to quit cross-sectionally, as well as cessation-related behaviour at 3-month follow-up when combined with measures of depth of processing.
Measure	"To what extent, if at all, do the warning labels make you think about the health risks of smoking?" (Not at all, A little, Somewhat, A lot)
Source	Hammond *et al.*, 2007a
Outcome	Respondents living in countries with larger, more comprehensive warnings were more likely to report that the warnings made them think about the health risks of smoking. Changes in the UK warnings were also associated with increases in thinking about the health risks of smoking.
Measure	"Have the new health warnings made you think a lot more about the health effects of smoking, think a little more, or have they had no impact on how much you think about the health effects of smoking?"
Source	Canadian Cancer Society, 2001
Outcome	Descriptive only: approximately half of smokers and non-smokers reported thinking more about health risks because of the warnings.
Measure	"This [Canadian] label would make me more worried about the health effects of smoking." (5-point Likert scale where 5=strongly agree)
Source	O'Hegarty *et al.*, 2006
Outcome	Graphics were rated as more likely to cause worry about the health effects of smoking than text warnings.
Measure	"Do you agree or disagree that this warning is likely to prompt people to think more about the effects of [targeted health risk] on [target group]?" (1-Strongly disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Strongly agree, 6-Don't know)
Source	BRC Marketing & Social Research, 2004
Outcome	Question was used to evaluate message targeting similar themes (e.g. the risks of smoking while pregnant).

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Quantitative Measures

Health Warnings - Concern & Worry About Health Effects	
Measure	"Have the new health warnings made you much more concerned about the health effects of smoking, a little more concerned, or have they had no impact?"
Source	Canadian Cancer Society, 2001
Outcome	Descriptive only: approximately 40% of smokers and non-smokers reported thinking more about health risks because of the warnings.

Health Warnings - Knowledge of Health Effects & Perceived Risk	
Measure	"Thinking about the health warning messages you have seen on cigarette packages, have these messages been very effective, somewhat effective, not very effective, or not at all effective in each of the following ways ... Informing you about the health effects of cigarette smoking? (Not at all effective, Not very, Somewhat, Very Effective)
Source	Health Canada, 2005
Outcome	A substantial proportion of smokers reported that the pictorial warnings were effective in informing them about the health effects of smoking.
Measure	"I am going to read you a list of health effects and diseases that may or may not be caused by smoking cigarettes. Based on what you know or believe, does smoking cause the following: (1) heart disease in smokers, (2) stroke in smokers, (3) impotence in male smokers, (4) lung cancer in smokers, (5) lung cancer in nonsmokers from secondhand smoke, (6) blindness, (7) mouth and throat cancer, (8) peripheral vascular disease, (9) asthma in children from secondhand smoke." (Yes, No to each question) Note: Not all health effects included in every wave.
Source	Hammond *et al.*, 2006a
Outcome	Specific health effects were associated with health effects listed on the label in each country.
Measure	"In your opinion, are there any illnesses caused by smoking?" If yes, "Which illnesses are caused by smoking? (Open ended) Smoking knowledge and attitudes (16 items)
Source	Borland & Hill, 1997b
Outcome	Smokers reported a greater number of smoking illnesses following implementation of new text warnings in Australia. Acceptance of statements used in warnings became stronger at follow-up.

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Quantitative Measures

Measure	Risk scores for smoking, environmental tobacco smoke, susceptibility to lung cancer, respiratory diseases, and cardiovascular diseases, reduced life expectancy, and others.
Source	Portillo & Antonanzas, 2002
Outcome	Students attributed a higher health risk to smoking following the presentation of the EU warnings packages.
Measure	Cigarettes cause cancer. Cigarettes cause strokes and heart disease. Tobacco smoke causes fatal lung disease in nonsmokers. (5-pint Likert scale where 5= strongly agree)
Source	O'Hegarty *et al.*, 2006
Outcome	Significantly higher endorsement for two of the three statements following presentation of graphic versus text only warnings following presentation of the warnings.
Measure	"I am going to read you a list of human health effects and diseases that may or may not be caused by smoking cigarettes. Based on what you know or believe, please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree that smoking cigarettes can cause each of the following ... lung cancer, throat cancer, mouth cancer, emphysema, heart disease, asthma, premature death, chronic bronchitis, gum or mouth diseases, smaller babies/reduced growth of babies during pregnancy, stroke, wrinkles and premature ageing, premature birth or preterm birth, blood clots, miscarriages, stomach ulcers, impotence in men, infertility, bladder cancer, gangrene, acne, multiple sclerosis, hepatitis, arthritis, Alzheimer's disease." Note: a list of 11 health effects for secondhand smoke was also used.
Source	Health Canada, 2005
Outcome	Descriptive only
Emissions - Comprehension & Meaning	
Measure	"What in your opinion is the meaning of the tar value of cigarettes?" (Open ended) "Is a 10-mg tar cigarette more relevant to health than a 5-gm one, and if so, how much more?" (Yes, No; Open ended)
Source	Gori, 1990
Outcome	Approximately half reported that tar levels were an indicator of health risk. Overall, very low understanding of tar levels.

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Quantitative Measures

Measure	"Could a pack-a-day smoker significantly lower health risks by switching from a 20-mg/16mg tar cigarette to a 5-mg tar cigarette?" (Yes, No)
	"Assume a person switched from a 10-mg tar cigarette to a 1-mg tar cigarette. Which of the following is closest to your opinion? The person probably could smoke more than 1, but these numbers can't tell you how much less tar the person would take in from the 1-mg tar cigarette. The person could smoke more than 1 or 2, but fewer than 9 or 10, of the 1-mg tar cigarette without taking in more tar. The person could smoke about 10 of the 1-mg tar cigarettes without taking in more tar."
Source	Cohen, 1996a,b
Outcome	Substantial minority of respondents reported that lower tar cigarettes would lower health risk or result in lower tar exposure.
Measure	"Tar numbers [appear/used to appear] in advertisements and sometimes on cigarette packs. As you understand it, how closely, if at all, are the tar numbers related to the amount of tar that smokers take into their bodies?" (Closely related, Somewhat related, Not at all related)
	"As far as you know, are each of the following chemicals included in cigarette smoke? (1) cyanide (2) mercury (3) arsenic (4) carbon monoxide." (Yes, No to each question)
	"Which of the following, if any, helps to indicate whether a cigarette brand COULD be less harmful compared to others: …. The tar or nicotine levels for a brand?" 1 A little less harmful 2 No different 3 A little more harmful
Source	The ITC Project
Outcome	Knowledge of chemicals was associated with labeling policy among smokers in Canada, the USA, UK, and Australia: if the emission was printed on the package, participants were more likely to report it was in smoke.
Measure	"Which of the following do you think is closest to the total number of chemicals or substances that are found in cigarettes or cigarette smoke? Is the total number closest to (3, 6, 15, 500, 1000, 4000, 5000)?"
	"Here are questions about some of the chemicals that are listed on the cigarette packs. What specific health effects, if any, can you name that can be caused by…(Each of 6 chemicals on side panel of package: tar, nicotine, CO, benzene, formaldehyde, hydrogen cyanide)?" (Open ended)
	"A range of numbers is reported beside each chemical on the side of the cigarette pack. For example, a pack may say "Tar 13 to 31mg." What does this range mean?" (Open ended)
	"Do you think the range of numbers listed for a chemical on the pack means ...?" (All cigarettes in that pack will have the same amount of a chemical, but those in another pack of the same brand may have more or less. Some cigarettes in that pack may have larger amounts of a chemical and others in the pack may have less. Some smokers may take in larger amounts of a chemical and other smokers may take in less. Combination of the above.)

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Quantitative Measures

	"Now, still thinking about the numbers that go with the chemicals that are listed on the side of a cigarette package, have you frequently, sometimes, rarely, or never done each of the following ...?" Talked about/compared amounts with another smoker. Used amounts to inform about health hazards of own/other brand. Used amounts to look for brand that may be less harmful. Used amounts to look for/try another brand close to own. Used amounts as step to quit smoking. "If you were to look for a safer or less harmful cigarette, do you think you would or would not use the information about the amounts of chemicals listed on the cigarette packs to help you find a less harmful brand?" (Yes or Maybe, No, None less harmful)
Source	Health Canada, 2003
Outcome	Generally, low knowledge of health effects and very little understanding of what the range of numbers on Canadian cigarette packages means. Nevertheless, over half indicated they would use the emission information to identify a "less harmful" cigarette brand.
Light & Mild Descriptors - Health	
Measure	"Compared with smoking regular cigarettes, would smoking light cigarettes increase, decrease, or have no effect on your risk of having health problems?" "Is that GREATLY increase [decrease] or SOMEWHAT increase [decrease]?" "If the number 100 stood for the risk to health from a regular cigarette, and 1 stood for the risk to health for a nonsmoker, what number stands for the risk to the health of a smoker of light cigarettes?"
Source	Kozlowski *et al.*, 2000
Outcome	The numerical "1-100" approach was found to be misleading relative to the "ordered categorical" approach.
Measure	"How many light cigarettes would someone have to smoke to get the same amount of tar as from one regular cigarette?" (Open ended – respondent to provide number of cigarettes, or also could respond "don't know") "Now I'm going to ask you about reasons some people might give for smoking [light or ultra-light, according to self-reported usual type] cigarettes. For each one, please tell me whether it is one of your reasons for smoking [light or ultra-light] cigarettes. Do you smoke [light or ultra-light] cigarettes as a step toward quitting smoking completely? Do you smoke [light or ultra-light] cigarettes to reduce the risks of smoking without having to give up smoking? Do you smoke [light or ultra-light] cigarettes to reduce the tar you get from smoking? Do you smoke [light or ultra-light] cigarettes to reduce the nicotine you get from smoking? Do you smoke [light or ultra-light] cigarettes because you prefer the taste compared to regular cigarettes?" If the response were yes to any of these reasons, smokers were asked: "How important is this reason to you? Is it very important or somewhat important?"

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Quantitative Measures

Source	Kozlowski *et al.*, 1998b
Outcome	The majority of smokers reported that lights would deliver lower amounts of tar and nicotine than regular cigarettes - a misconception.
Measure	Health knowledge summative score (from 8/10 items in 1996/2000 respectively) Perceptions of light/mild cigarettes Reasons for smoking light/mild
Source	Ashley *et al.*, 2001
Outcome	Approximately one quarter of smokers said they smoked lights to reduce health risks, 40% replied to smoke light/mild as a step toward quitting, and 41% said they would be more likely to quit if they knew that light cigarettes provided the same amount of tar and nicotine as regular cigarettes.
Measure	Respondents were asked whether light/ultra-light cigarettes in comparison to regular cigarettes were safer, healthier, and less likely to cause cancer. (5 point scale ranging from 1 = “definitely not true” to 5 = “definitely true”) Respondents were asked to estimate the number of light and ultra-light cigarettes, respectively, someone would have to smoke to get the same amount of tar in one regular cigarette. Respondents asked to estimate the risk of smoking lights and ultra-lights, respectively, relative to the risk of not smoking (designated “0”) and the risk of smoking regulars (designated “10”).
Source	Shiffman *et al.*, 2001
Outcome	On average, smokers believed that lights afforded a 25% reduction in risk, and ultra-lights a 33% reduction in risk. Light and ultra-light cigarette smokers evaluated the risks of their own cigarette types more favourably. On average, half of all smokers thought that it was necessary to smoke two light cigarettes and three ultra-light cigarettes to get as much tar as from a single regular cigarette. Believing that lights and ultra-lights delivered less tar and nicotine independently contributed to the belief that these cigarettes were safer.
Measure	“In your opinion, how many (a) light and (b) ultra-light cigarettes would someone have to smoke to inhale the same amount of nicotine as from one regular cigarette?” (Open ended)
Source	Etter *et al.,* 2003c
Outcome	On average, participants reported one would have to smoke two light cigarettes or four ultra-light cigarettes to inhale the same amount of nicotine from one regular cigarette.

Appendix 9.
Quantitative Measures

Measure	Smokers were exposed to print advertisements for light and regular cigarettes and asked to rank the products on health risk, amount of tar, and carcinogenicity, and identified the messages they perceived the advertisements to convey. (Rating scale from 1-10)
Source	Hamilton *et al.*, 2004
Outcome	Respondents perceived lights as having significantly lower health risks and carcinogen levels than regular cigarettes.
Measure	"The next question is about the amount of tar smokers take into their lungs from smoking cigarettes. Compared to smokers of regular cigarette brands, do smokers who smoke [participant's brand] take in: a lot less tar into their lungs than smokers of regular cigarettes, a little less, about the same amount, a little more tar, a lot more tar into their lungs?" "For the following questions, I will refer to all types of light, mild, and low tar cigarettes as "light cigarettes." Please tell me if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with each of the following statements about light cigarettes: …Light cigarettes are less harmful than regular cigarettes. …Smokers of light cigarettes take in less tar than smokers of regular cigarettes." "How many light cigarettes would you have to smoke to harm you as much as 10 regular cigarettes would?" (Far fewer light cigarettes than 10, Somewhat fewer, Same number of light cigarettes, Somewhat more, Far more light cigarettes than 10) "Do you think that the brand you usually smoke, [current brand], might be a little less harmful, no different, or a little more harmful, compared to other cigarette brands? 1 A little less harmful 2 No different 3 A little more harmful "Which of the following, if any, helps to indicate whether a cigarette brand COULD be less harmful compared to others: ….Words in the name of the brand, such as light or mild?" 1 A little less harmful 2 No different 3 A little more harmful
Source	The ITC Project
Outcome	A majority of smokers surveyed in each country, except Canada, continue to believe that light cigarettes offer some health benefit compared to regular cigarettes (Canada 43%, USA 51%, Australia 55%, UK 70%). A majority of smokers in all four countries believed that light cigarettes are smoother on the throat and chest than regular cigarettes. Predictors of use of light cigarettes and beliefs about possible benefits were very similar in the four countries.

Appendix 9.
Quantitative Measures

Measure	Which of the following do you think is true: a light cigarette has more tar than a regular one, a light cigarette has less tar, or a light cigarette has the same amount of tar as a regular "Which of the following do you think is true: a light cigarette has more nicotine than a regular one, a light cigarette has less nicotine, or a light cigarette has the same amount of nicotine as a regular?" "If you switched to [light/regular] cigarettes, how do you think this would affect your daily intake of nicotine?" (Increase, Decrease, Remain same, Depends on cigarette) "If you switched to [light/regular] cigarettes, how do you think this would affect your daily intake of tar?" (Increase, Decrease, Remain same, Depends on cigarette)
Source	Castrucci & Gerlach, 2007
Outcome	The majority of smokers say that lights have less tar and/or nicotine, ultra-light smokers more likely to say these have less. In addition, 63.0% of light and 73.0% of ultra-light smokers reported that switching would increase their intake of tar and nicotine.
Light & Mild Descriptors - Sensory Properties	
Measure	"When you smoke a cigarette, is it easy or difficult to tell if it is a regular strength variety or a light one, just from the experience of smoking it?" (Open ended) "Light cigarettes are smoother on your throat and chest than regular cigarettes." (Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree)
Sources	The ITC Project; Borland *et al*., 2004
Outcome	The majority of smokers contacted in Australia, Canada, UK, and USA believe light cigarettes are smoother on their throat and chest than regular cigarettes.
Measure	3-item Sensation index: "You cough less smoking lights." "Lights feel smoother on your throat." "Lights feel easier on your chest."
Source	Shiffman *et al*., 2001
Outcome	Believing that lights and ultra-lights were less harsh independently contributed to the belief that these cigarettes were safer.

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Quantitative Measures

Light & Mild Descriptors - Addiction	
Measure	"For the following statement/question, I will refer to all types of light, mild, and low tar cigarettes as "light cigarettes." Please tell me if you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with each of the following statements about light cigarettes: Light cigarettes make it easier to quit smoking. Do you believe that [light/ultra-light] cigarettes are more addictive, as addictive, or less addictive than regular cigarettes?"
Source	The ITC Project
Outcome	A minority of respondents reported that "light/mild" cigarettes may be less addictive.
"Other" Brand Descriptors	
Measure	"Which, if any, of the following terms on cigarette packs mean that the cigarettes are supposed to be some form of light, mild, or low-tar cigarette?" (Yes, No to each) 1 Smooth 2 Refined 3 Generous 4 Ultra "Do you think that the brand you usually smoke, [current brand], might be a little less harmful, no different, or a little more harmful, compared to other cigarette brands?" 1 A little less harmful 2 No different 3 A little more harmful
Source	The ITC Project
Outcome	None to date.
Attractiveness	
Measure	"How good is this advertisement?" (0-very bad, to 20-very good) "How familiar is this advertisement?" (0-very bad, to 20-very good) "Do you want to smoke a cigarette?" (-5-would hate to, to +5-very much indeed)
Source	Hyland & Birrell, 1979
Outcome	Presentation of a health warning increased desire to smoke. Presence of warning decreased perceived "goodness" of ad; did not affect perceived familiarity.

Appendix 9.
Quantitative Measures

Measure	Attractiveness scale: 7-point bipolar scale (attractive-unattractive).
Source	Loken & Howard-Pitney, 1988
Outcome	Specific warnings on cigarette advertisements can act as a counter-influence to an ad's appeal by making it appear less attractive and less persuasive than if the ad contained only a general warning, particularly for smokers.
Measure	Products shown to adolescents with/without warnings. "Would you ever use this product?" (6 point scale from "absolutely, definitely would not use it" to "absolutely, definitely would use it") "Would most kids your age use it?" (6 point scale from "absolutely, definitely would not use it" to "absolutely, definitely would use it")
Source	Brubaker & Mitby, 1990
Outcome	Less than half (43%) exposed to warnings recalled seeing them; a third of those who noticed the warnings recalled the message content.
Measure	"Do you think the new warnings make cigarettes packages look less attractive, more attractive, or has it made no difference to their attractiveness? "How often have you put your cigarette package away because you didn't want others to see the warning on the package? Have you done this?" (Often, Sometimes, Rarely, Never)
Source	Canadian Cancer Society, 2001
Health Warnings – Consumption Patterns	
Outcome	Over half of smokers (63%) reported that the warnings make cigarette packages look less attractive, and approximately one third of smokers reported that they prefer to purchase a pack without the new warnings.
Measure	"Are you less inclined or more inclined to purchase cigarettes that contain the new warnings?" "If, when buying cigarettes from a shop or a vending machine, you were able to choose between a pack with or without the new warnings, which one would you buy?"
Source	Willemsen, 2005
Outcome	Approximately one third of smokers reported that they prefer to purchase a pack without the new warnings; 14% became less inclined to purchase cigarettes because of the new warnings.
Measure	Auction method: smokers placed separate bids on two packs of cigarettes; one with a text-only warning and the other with a graphic image of a smoker with cancer.

Appendix 9.
Quantitative Measures

Source	Thrasher *et al.,* 2007
Outcome	The pack with a graphic image had a mean attributed value which was 17% lower ($3.21 pesos) than the normal pack with the text warning, and this difference was consistent and statistically significant across sociodemographic groups, extent of smoking, quit attempts, and levels of perceived smoking risks.
Measure	"How often, if at all, have you been tempted to have a cigarette but decide not to because of the new warnings on the packs?" (Once, A few times, Many times, Never) "What impact have the new warnings had on your smoking behaviour inside your home? Have they motivated you to smoke much less inside your home, somewhat less, or have they had no impact?"
Source	Canadian Cancer Society, 2001
Outcome	One fifth of smokers indicated that the warnings had stopped them from having a cigarette, and approximately one quarter reported smoking less in the home as a result of the warnings.
Measure	"Thinking about the health warning messages you have seen on cigarette packages, have these messages been very effective, somewhat effective, not very effective, or not at all effective in each of the following ways ... Getting you to smoke less around others over the past year than you used to. Getting you to smoke less this year than last year."
Source	Health Canada, 2005
Outcome	Descriptive only: responses to all measures increased following implementation of larger pictorial warnings.
Measure	"In the past 3 months, have the warning labels made you smoke: a lot less, a little less, no difference, a little more, a lot more?" "In the past 3 months, have the warning labels ever made you delay before lighting up or butt out a cigarette early? (5 point Likert scale)
Source	Hammond *et al,* 2004a
Outcome	Approximately one fifth of Canadian smokers reported that the pictorial warnings had made them smoke less; less than 1% reported smoking more as a result of the warnings.
Measure	"In the last month, have the warning labels stopped you from having a cigarette when you were about to smoke one?" (Never, Once, A few times, Many times)

Appendix 9.
Quantitative Measures

Source	Hammond *et al.*, 2007a
Outcome	Larger pictorial warnings were associated with a greater likelihood of reporting forgoing a cigarette among Canada, USA, UK, and Australian smokers.
Measure	"Are you smoking (somewhat) less or (somewhat) more as a result of the new warnings or are you still smoking the same amount?"
Source	Willemsen, 2005
Outcome	Approximately 10% of adult smokers reported they smoked less because of the warnings.
Measure	Cigarettes smoked per week using data from national survey.
Source	Gospodinov & Irvine, 2004 (using data from the Canadian Tobacco Use Monitoring Survey)
Outcome	A reduction of 2 cigarettes per week among current smokers in the months following the implementation of pictorial health warnings.
Health Warnings - Smoking Initiation	
Measure	"Do you think the new warning labels might make some young people less likely to start smoking?" (Yes, No, Don't know) "Do you think the new warnings might make some young people more likely to start smoking?" (Yes, No, Don't know)
Source	Koval *et al.*, 2005
Outcome	Among young adults, current smokers were less likely than experimental/ex-smokers to believe that warning labels with stronger messages would make people their age less likely to smoke. Experimental/ex-smokers were more likely to believe that new warning labels would make people their age less likely to smoke than never- or current-smokers. Although only ~8% of current smokers were more likely to believe that new warning labels might make people their age more likely to smoke.
Health Warnings – Motivation to Quit	
Measure	"To what extent have the new warnings increased your motivation to quit smoking? Has your motivation increased: a lot, a little, not at all?"
Source	Canadian Cancer Society, 2001
Outcome	Descriptive only: approximately 40% reported the warnings had increased their motivation to quit.

Appendix 9.
Quantitative Measures

Measure	"Thinking about the health warning messages you have seen on cigarette packages, have these messages been very effective, somewhat effective, not very effective or not at all effective in… increasing your desire to quit smoking over the past year?"
Source	Health Canada, 2005
Outcome	None to date.
Measure	"How have the warnings affected the likelihood that you will quit smoking within the next year?" (A lot less likely to quit because of the labels, Somewhat less likely because of the labels, No difference, Somewhat more likely to quit because of the labels, A lot more likely to quit) "How have the warning labels affected your self-confidence in your ability to quit?" (A lot less confident in ability to quit, Somewhat less confident, No influence, Somewhat more confident, A lot more confident)
Source	Hammond *et al*, 2004b
Outcome	Approximately one third of smokers reported they were at least somewhat more likely to quit as a result of the pictorial warnings in Canada, and approximately one quarter reported that the warnings had made them more confident in their ability to quit.
Measure	"To what extent, if at all, do the warning labels on cigarette packs make you more likely to quit smoking?" (Not at all, A little, Somewhat, A lot) "In the past 6 months, have each of the following things led you to think about quitting? …warning labels" (Not at all, Somewhat, Very Much). Note: asked a part of a list.
Source	Hammond *et al*., 2007a
Outcome	Larger pictorial warnings were associated with greater proportions of smokers reporting that the warnings increased their likelihood of quitting among Canada, USA, UK, and Australian smokers.
Measure	"Did the new health warnings make you more or less motivated to quit smoking?"
Source	Willemsen, 2005
Outcome	Approximately 18% of Dutch smokers reported that new EU text warnings motivated them to quit.
Measure	"This label would motivate me to quit smoking." (5-point Likert scale, with 5=strongly agree)
Source	O'Hegarty *et al*., 2006

Appendix 9.
Quantitative Measures

Outcome	Respondents were significantly more likely to report that graphic warnings would motivate them to quit smoking compared to text warnings following presentation of the warnings.
Measure	"Do the new warnings make you think about trying to quit?" (Yes, No, Don't know)
	"In the past month, has noticing the new warnings led you to decide not to have a cigarette?" (Yes, No, Don't know)
Source	Koval *et al.*, 2005
Outcome	Young adults: ~40% of current smokers said new warnings made them think about trying to quit; ~25% said noticing warnings led them to not have a cigarette.
Health Warnings – Quit Attempts & Abstinence	
Measure	"Thinking about the health warning messages you have seen on cigarette packages, have these messages been very effective, somewhat effective, not very effective or not at all effective in… getting you to try to quit smoking within the past year?"
Source	Health Canada, 2005
Outcome	Descriptive only.
Measure	"To what extent, if at all, were the following reasons for your current quit attempt… warning labels?" (Not at all, Somewhat, Very much). Note: asked as part of a list of different reasons for quitting.
Source	Hammond *et al.*, 2007a
Outcome	Larger pictorial warnings were associated with greater proportions of smokers reported the warnings as a reason for their quit attempt among Canada, USA, UK, and Australian smokers.
Measure	Prevalence estimates for weekly smokers from national survey.
Source	Gospodinov & Irvine, 2004 (using data from the Canadian Tobacco Use Monitoring Survey)
Outcome	No discernable change in prevalence rates in the months following the introduction of pictorial warnings.
Health Warnings - Use of Cessation Services	
Measure	"What was the main reason for calling the quitline?" (Open ended)
Source	UK Department of Health
Outcome	UK pack warnings were the second largest reason cited by callers to the NHS Stop Smoking Helpline. Between 1,500 and 4,000 callers per month have cited this reason since the written warnings were introduced in 2003; a 12% increase.

Appendix 9.
Quantitative Measures

Measure	Call volume before and after introduction of quitline number on Dutch cigarette packages.
Source	Willemsen, 2002
Outcome	A 3- to 4-fold increase in call volume between the months before and after the new warnings.
Health Warnings - Quitting Among Former Smokers	
Measure	"How much did the warning labels on cigarette packages influence your decision to quit?" 1. No influence on your decision to quit 2. Very little influence on your decision to quit 3. Moderate influence on your decision to quit 4. Strong influence on your decision to quit 5. Main or major influence on your decision to quit "Did the warning labels make it easier or help you to quit?" 1. Not at all helpful 2. Only a little bit helpful 3. Moderately helpful 4. Very helpful 5. Extremely helpful
Source	Hammond *et al.*, 2003
Outcome	Asked along with price, bans/bylaws, personal health effects, health effects of others.
Measure	"To what extent, if at all, do the warning labels on cigarette packs make you more likely to stay quit?" (Not at all, a little, Somewhat, A lot)
Source	The ITC Project
Outcome	More prominent warnings associated with higher responses.
Measure	"To what extent have the new warnings on cigarette packages made you feel better about being a non-smoker? Have they made you feel a lot better, a little better, or have they had no impact on you?"
Source	Canadian Cancer Society, 2001
Outcome	Approximately half of former smokers reported that the warnings had made them feel better about being an ex-smoker.
Measure	"This label would motivate me not to start smoking again." (5-point Likert scale)
Source	O'Hegarty *et al.,* 2006
Outcome	Respondents were significantly more likely to report that graphic warnings would motivate them to remain abstinent compared to text warnings following presentation of the warnings.

Appendix 10.
Qualitative Measures from Focus Groups

Focus Groups - Health Warning Noticing & Salience	
Measure	"Does this warning catch your attention?" (Open ended) "Does it make you want to read further/know more?" (Open ended) "What stands out most to you?" (Open ended)
Source	Health Canada, 2006
Outcome	The picture was generally the first feature people looked at and related to; it determined the strength of the warning's emotional impact and noticeability. Pictures showing children, or clearly depicting disease (or diseased people) in some way, were the most effective. Motivation to read further varied based on the emotional impact of the warning itself and/or the personal relevance of the particular topic.
Measure	"Which graphics are most noticeable? Least noticeable? Why?" (Open ended) "Which are the most memorable and least memorable graphics? Why?" (Open ended) "Why are the warnings memorable?" (Open ended)
Source	Elliott & Shanahan Research, 2002
Outcome	Examined the content of images (e.g. shocking versus non-shocking, attractive versus unattractive). A variety of images and image styles is most likely to be effective in terms of maintaining "freshness" and retaining smoker attention.
Focus Groups - Health Warning Location	
Measure	"Can you describe what is displayed (shown) on a pack of cigarettes?" (Open ended) "What would you find when you look at a pack of cigarettes (without actually looking at a pack)?" "Can you describe all that is written on a cigarette pack?" "What do you recall about these warnings? What strikes you, what catches your attention?" "Now, think only of the images you remember having seen. Describe all the images you can recall." "Now, forget the images and think of only the words and what was written. Name all the words you can recall." "For each image recalled, ask: can you recall the words associated with this image?"
Source	CREATEC, 2003
Outcome	Descriptive only

Appendix 10.
Qualitative Measures from Focus Groups

Focus Groups - Health Warning Affective Reactions	
Measure	"Did you notice who made these warnings?" (Open ended) "Why do you think Health Canada made these warnings?" "Who else should make these warnings?"
Source	CREATEC, 2003
Outcome	Most thought the warnings came from the government.
Measure	"What do you think/how do you feel about this warning?" (Open ended) "What do you think/how do you feel about the picture?" "What do you think/how do you feel about the words?" "What does this warning tell you about the effects of smoking?" "As a smoker, does this warning affect you personally?"
Source	Health Canada, 2006
Outcome	The emotional impact of a warning appeared to predict its ability to inform and/or motivate thoughts of quitting. The most effective warnings generated a strong emotion supported by factual information.
Measure	Examined emotional reactions to warnings, including positive/negative message approach (e.g. positive could relate to feeling better by not smoking).
Source	Elliott & Shanahan Research, 2002
Outcome	Graphics had considerable impact on all age groups. Descriptive or emotive messages had considerable impact for younger smokers. Too much fear is likely to lead to defensiveness and rationalising of the messages; some warnings and explanatory messages need to provide support and encouragement.
Focus Groups - Health Warning Believability/Credibility	
Measure	"Are [the messages] truthful, personally relevant?" (Open ended; explore more with respondent)
Source	Elliott & Shanahan Research, 2002
Outcome	The relevance of the warnings depended upon the demographic of the smoker.
Measure	"Do you agree or disagree that any or all of these messages would be more effective being associated with or sponsored by the Ministry of Health?" (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree, Don't know) "For what particular reasons do you say that?" (Open ended)

Appendix 10.
Qualitative Measures from Focus Groups

Source	BRC Marketing & Social Research, 2004
Outcome	A large proportion of participants agreed messages would be more effective if they were associated with the Ministry of Health, as it gave official credibility.
Measure	“Do you believe what this warning is saying?” (Open ended)
Source	Health Canada, 2006
Outcome	While new information tended to interest participants, many also wanted proof or evidence in the form of statistics or clearer pictures. Lack of supporting data was often a key argument for rejection of disturbing new information. Most participants felt the Health Canada name lent credibility to the claim in the warning. Some participants tended to refute the message based on the idea that it was "not only" smoking that caused the illness or situation to occur.
Focus Groups - General Comprehension/Meaning	
Measure	Overall comprehension – are they easy to understand, is the information reliable? Any comprehension difficulties?
Source	Elliott & Shanahan Research, 2002
Outcome	Any increase in the font size, area of pack devoted to the message, and any contrasting background will facilitate readability. All photos and visuals need to be clear and recognizable to enable smokers to easily identify with the health issue concerned. Accompanying text messages need to be brief and as simple as possible to enable ease of comprehension.
Measure	“What message is this warning trying to get across?” (Open ended) ”Anything else it’s trying to say?” (Open ended) “What changes would you make to this warning to make it easier to understand?” (Open ended)
Source	Health Canada, 2006
Outcome	Pictures played the key role in understanding the message, and tended to override the meaning conveyed by the words in the headline. Some participants tended to take the words in the headline literally, and often failed to read in-between the lines or to derive an implicit message.

Appendix 10.
Qualitative Measures from Focus Groups

Measure	"Are [the warnings] interesting and informative? Helpful? Why/why not?" (Open ended) "How likely are [you] to read the explanatory messages? Is it curiosity? Information seeking?" (Open ended) "Do the labels raise the salience of health concerns?" (Open ended) "Which health topics/issues to do with smoking are smokers most concerned about? Why?" (Open ended)
Source	Elliott & Shanahan Research, 2002
Outcome	Health messages' impact increases with participant's age. Messages about children and babies effective in middle age range. Recommend including both factual and personalised
Measure	"Did you learn something while looking at these warnings? What?" (Open ended) "Are these warnings a good way to make you think? Why? Do they inform you?" (Open ended) "Do you take into account what is being said in the warnings?" (Open ended)
Source	CREATEC, 2003
Outcome	Descriptive only
Measure	"What does this warning tell you about the effects of smoking?" (Open ended) "Anything new here?" (Open ended) "After looking at these warnings, what do you remember about what you saw or read?" (Open ended) "Is there anything else?" (Open ended)
Source	Health Canada, 2006
Outcome	Overall, people's attitude towards new information was positive and was sometimes related to a warning's noticeability. If presented effectively (impactful picture and clear headline), most wanted more information.
Measure	Three standard readability tests: Flesch, Gunning's Fog, Dale/Chall
Source	Malouff *et al.*, 1992
Outcome	All three methods produced similar results: each of the four US warnings required a reading level typical of college students/graduates; the three smokeless tobacco warnings required middle/high school reading levels.
Measure	Participants were asked to look at their cigarette packages and instructed to offer what knowledge they had about each listed ingredient and how it can affect one's health. (Open ended)
Source	Health Canada, 2003
Outcome	Low knowledge of health effects

Appendix 10.
Qualitative Measures from Focus Groups

Focus Groups - Likelihood of Quitting	
Measure	"Do you agree or disagree that this packet (including the warning, picture and text) is likely to encourage [target group] to quit smoking or think about quitting?" (1-Strongly disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Strongly agree, 6-Don't know)
Source	BRC Marketing & Social Research, 2004
Outcome	Question was used to evaluate message targeting similar themes (e.g. the risks of smoking while pregnant).